
Education and Economic Development

*A Federal Reserve Bank of Cleveland Research Conference
Proceedings of a Conference Held in Cleveland, Ohio November 18–19, 2004*

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Preface

In November of 2004, the Federal Reserve Bank of Cleveland hosted a conference on education and economic policy. The conference was designed to help sort out the myriad of claims and counterclaims about what constitutes good public policy for education. Though education is indeed an important public policy concern, it may not be self-evident why a Federal Reserve Bank would concern itself with education. Of course, most people know the Federal Reserve is responsible for setting monetary policy. But according to the Federal Reserve Act, Congress has also charged the Federal Reserve with promoting the goals of *maximum employment, stable prices, and moderate long-term interest rates*.

To set an appropriate monetary policy, we must understand the dynamics of the real economy, as well as those of prices or inflation. This means that we need to understand the policies that enhance or inhibit growth. Clearly, capital accumulation—both physical and human capital—is a prerequisite for sustained economic growth.

The program was chosen so as to address many different issues—to go “a mile wide and an inch deep,” covering the entire spectrum from prekindergarten through college education. The conference was attended by economists, educators, civic leaders and political officials. On the first day, six scholars presented papers based on their current research. On the second day, five eminent economists presented papers written specifically for this conference. The group was asked to review what economists have learned over the years about returns on investment in education.

The message that came out of the research is encouraging: Although our education systems are facing rough waters—in the courtroom and in the classroom—there is considerable evidence of the potential for large returns to our educational investments.

Education and Economic Development: Beginning a Dialogue

Sandra Pianalto

Good morning, everyone. On behalf of the Federal Reserve Bank of Cleveland, I would like to welcome you to Day 2 of our conference on education and economic development. I have been looking forward to this event for some months now. It is a strategic objective of this Bank is to engage in research on issues that are important to our region. In my travels throughout the Fourth Federal Reserve District, and really throughout the country, education stands out as one of the most critical issues. I know that we will all benefit greatly from the presentations we hear and the discussions we share today.

If you were with us yesterday, you heard some of the latest research findings on education and economic development. Today's presentations will center on the policy-related issues. I think that both elements—research and policy—are essential to better understand how we can obtain the greatest possible returns to public funds devoted to education.

In my remarks this morning, I will first focus on why the Federal Reserve is interested in this topic. Then I will make a few comments related to the quality of education, and I will conclude by exploring the links between research and public policy. I have to warn you however, that I am going to be spending most of my time raising questions rather than giving answers or proposing solutions.

THE FEDERAL RESERVE'S POLICY ROLE

Let me begin with the question of why the Federal Reserve is interested in education and economic development. Most people know that our organization is responsible for setting monetary policy. Under the Federal Reserve Act, Congress has charged the Federal Reserve with promoting the goals of maximum employment, stable prices, and moderate long-term interest rates.

Of course, these goals do not specifically require us to do things like hold conferences on education. But to set

an appropriate monetary policy, we must understand the dynamics of the real economy, and this means that we need to understand the policies that enhance or inhibit growth. Clearly, capital accumulation is a prerequisite for sustained economic growth. And when I say "capital accumulation," I am referring to this term in its broadest sense. This includes both physical and human capital.

To bring this issue closer to home, let me tell you why I have an interest in this topic. Most of you know that the Federal Open Market Committee, or FOMC, is the Federal Reserve's policymaking body. As president and CEO of the Federal Reserve Bank of Cleveland, I participate fully in the policy discussion, and this year I have had a vote on policy direction. Part of my role is to bring information about my District's economy to the FOMC meetings. To inform that local perspective, I rely on economic data from my Research staff as well as anecdotal reports from people in my District.

I spend a lot of time traveling throughout the Fourth District and meeting with business leaders to get their input on current economic conditions. More often than not, those discussions turn to questions about employment. People in our region are wondering why job opportunities have still not picked up all that much during the current economic expansion compared with this stage in previous expansions.

We suspect that some longer-term factors have been affecting the regional employment situation. Growing economies tend to change shape over time, and that eventually leads to economic transformation. By that I mean that some sectors grow faster than others, and some sectors might actually decline.

For example, at the turn of the 20th century, agriculture accounted for the majority of employment in our country, but today it accounts for only about 1 percent. Similarly, we have also been witnessing a decline in manufacturing's share of employment over the past 50 years or so.

Our region is certainly aware of the growing pains that accompany an economy in transition. Ohio remains far more concentrated in manufacturing employment than the nation—16 percent compared with 11 percent—so the manufacturing job picture affects our labor market more heavily.

Ohio's manufacturing tradition once gave many people a path to higher earnings without the need for higher education. We all know that day is over.

Like most other states and most other countries, we are seeing that manufacturing jobs are steadily giving way to jobs that may require different skills or educational requirements. And, in fact, the educational requirements of service sector jobs are changing as well.

I am convinced that education holds the key to our continued success as a region. My friend Luis Proenza, who is president of the University of Akron, has stated that lifelong learning has literally become the new infrastructure of our knowledge-based economy. Education, as infrastructure, means that we must be willing to see our schools, colleges and universities as key players in economic development—because of the talent they create, the research they conduct, and the new knowledge they produce. It is partly from research and innovation that new companies are born and new jobs are created. Indeed, research and innovation help to drive economic expansion and the creation of new wealth.

In our Bank's 2003 Annual Report, we propose that innovation is the true engine of economic prosperity. Research and innovation can also play a vital role in advancing the performance of our educational infrastructure.

THE QUESTION OF EDUCATIONAL QUALITY

So let me now turn to the topic of educational quality. I think this is a dimension that is often overlooked. To take one simple example, if we look at data from developed countries, there does not appear to be much of a relationship between levels of education and levels of gross domestic product, or GDP. But on closer examination, it turns out that it is not just the level of education, but the quality of the education that matters. And, once quality is included, we do find a significantly positive relationship between education and GDP. As a result, public policies that are designed to produce "more education" without regard to the quality of the product

might lead to more years of education, but little lasting benefit.

A recent report from ACT, an organization that administers the college-entrance examination, states that the core curricula in American high schools are insufficient in preparing students for college-level work and even for job training. The report concludes that only 22 percent of the 1.2 million high-school students who took the ACT test in the 2003-to-2004 academic year were adequately prepared for college-level courses in English, mathematics, and science.

This situation has several important implications. First, it should give us pause to think that merely by raising high school and college graduation rates, the new graduates will have significantly improved their human capital. Second, we should question whether the additional public funding needed to achieve those higher completion rates would be money well spent if quality is lacking. Third, we must recognize that inadequate preparation places burdens on colleges, which will need to provide remedial education to entering students.

We must keep in mind that these problems are not someone else's problems—they are our problems. The problems I have been describing are common throughout the country. Solutions are not obvious, and resources are scarce. A further complication is that different constituents often have firmly entrenched views on how to address these issues, whether or not their opinions are supported by the facts.

A LOOK AT THE LINK BETWEEN RESEARCH AND PUBLIC POLICY

That brings me to the final area I want to comment on this morning, and that is the connection between research and public policy. As we will see in our discussions today, it is useful to think of producing education in the same way we think about producing any other good. Take some inputs, put them together in a certain way, and produce some output. Well, that's a good starting point!

But immediately we face several critical questions, which we do not know how to answer with any comfortable degree of certainty:

First, what are the inputs to education and how do we measure them?

Second, what is the output and how is it measured?

Third, how should the inputs **be combined**?

And **finally, what roles do governments play** in ensuring that the best combinations take place?

If we go back to the basics and seek answers to these fundamental questions, I think we will go a long way toward better understanding how we actually produce human capital today, and how we might obtain even better outcomes in the future.

Believe me; I appreciate the role that economists play in sweating out the details of measurement issues and education production functions. But when all is said and done, those of you in the public policy arena are responsible for allocating scarce public resources to achieve the highest return from the dollars invested.

Because governments control so much of the educational machinery, important resource allocation decisions are made in the political arena, not the marketplace. In recent years, frustration with government solutions has resulted in educational experiments designed to simulate some aspects of market systems, such as vouchers and charter schools. I think it is fair to say that there are few aspects of educational policy and financing that are free from controversy today.

I know that many people in this region are uncertain about the condition of our educational infrastructure. People wonder, for example, whether we are paying enough attention to the potential benefits of expanding early childhood education, whether we are spending the right amount of money on primary and secondary education, whether state funding of education at all levels is too low, and whether the outflow of college graduates is too large. These are legitimate concerns that deserve further study.

We can begin with the education of very young children. I suspect that many of us regard early childhood education as a sound investment, yet most of the public infrastructure and policy discussions are centered on the later years of a child's education. As a rule, most early education is the responsibility of the families involved, and can take a number of different structures, both formal and informal. Are public policy makers miss-

ing something important by not paying more attention to preschool education? There is a large body of research on this topic, and we will hear a summary of that work this morning.

Moving to the middle of the educational spectrum—primary and secondary education—we hear some differing opinions. Some say we are not spending enough, and others say that money alone is not the answer to improving educational outcomes. Those who call for more money discuss using those funds to reduce class sizes, to pay teachers higher salaries, to purchase more equipment and supplies, and to improve the physical condition of schools. Those who downplay the benefits of additional funding think that we can improve educational outcomes by making more effective use of the dollars we already have available.

How much latitude do local school boards and superintendents have to effect change within their school districts? What have we learned that could help us evaluate these subjects? These topics will be discussed later this afternoon.

Finally, what about higher education? It is not uncommon to hear college and university presidents justify requests for increased public funding with the logic that college-educated people earn more than those who have not completed college. Presumably, the taxes that these newly educated people will pay on their higher earnings over time will more than pay for the increased public subsidies. This might be true in some instances, but how can we determine when, and to what degree?

There are several other questions to consider. If individuals have such great earnings potential, why don't we expect more students to finance their own educations? Are the public benefits to higher education so large that they merit public subsidies? If public assistance is warranted, how might we know whether public institutions should reduce tuition, or whether loan assistance or tuition tax credits make more sense? I don't expect that we will be able to answer all of these questions today, but by asking them, I hope to make the point that different approaches might have different consequences—and each of them merits our attention and analysis.

Education finance policy can have consequences for all citizens through its potential effects throughout the tax system. States typically rely on sales taxes, property taxes, and income taxes to finance their schools. But we

know that states differ greatly in how they use these taxes, and how much of the financing is at the state and local levels. Many states are in turmoil over how to design their financing systems.

We know that the way education is financed has consequences for those who bear the financing burden. As a general rule, people will take actions to avoid the burden, often by moving away. Public policy makers need to anticipate these consequences and be prepared to accept them.

CONCLUSION

We know that it will take time and money to achieve better outcomes. But progress will also require a willingness to think in new ways about educational goals and the trade-offs involved in attaining them. To create lasting change, many stakeholders will need to participate in the discussions, which is why I am pleased to see such a diverse group here today.

My hope is that by sponsoring this conference, we can call attention to what economists have learned from studying the design and performance of education systems. The Federal Reserve Bank of Cleveland views this as an important public policy issue, one in which we will remain active in helping to search for better outcomes.

Thank you for participating in our conference and for your commitment to the goals of education and economic development. Together, we can begin to ask the important questions about education and public policy, and then use what we learn to help build educational systems we can all be proud of—systems that will help our region, and our country, prosper.

Maximizing Returns from Prekindergarten Education

W. Steven Barnett

Public investments in prekindergarten education have been promoted on the grounds that such programs can produce high rates of return. This paper reviews the basis for such claims and identifies policy choices likely to affect actual returns. Experience demonstrates that potential gains are not always realized. As preschool education has become ubiquitous, the time is ripe to develop policies to ensure that the public reaps an adequate return on its investment. Such policies will significantly increase educational gains, particularly for our most disadvantaged children.

BACKGROUND

Prior to 1960, most children were educated entirely at home before age five or six. Today, most children in the United States enter a classroom at age three or four. Although increased labor force participation has played some role in this trend, demand for formal education appears to play a larger role. Preschool attendance rates have increased at roughly the same pace whether or not the mother is in the labor force, as shown in figure 1. Much of the increase in preschool education has been privately funded, but public-sector expenditures have increased substantially, as well.

Although preschool attendance has become the norm, the result has been far from uniform with respect to either quality or quantity; and, some children have been left behind altogether. Whether a child attends a preschool program still depends on family income and parental education. Program standards are much more variable than for K–12 education and generally are quite low, especially for child care programs. Nevertheless, parents report virtually all of these to be educational and express high levels of satisfaction (Emlen 1998; Helburn and Howes 1996; West, Hausken, and Collins 1993). By contrast, research finds wide variations in the educational effectiveness of these programs, and that many have little positive effect and some negative effect on child development (Magnuson, Ruhm, and Waldfogel 2004; Sammons et al. 2002a, 2002b; Vandell 2004).

This paper seeks to provide increased clarity regarding the potential benefits and possible adverse effects of early care and education, with particular emphasis on the effects for children disadvantaged by socioeconomic circumstances. In addition, it seeks to summarize what is known about the extent to which variations in child characteristics, program characteristics, and the social environment alter the magnitude of the educational benefits from early education. Key issues in the review are the nature and duration of program effects. There is no dispute about whether programs have immediate or short-term effects on children, but there are disputes about the importance of the effects and whether they persist or result in other long-term effects that are more consequential (Jacobson 2001; Haskins 1989; Herrnstein and Murray 1994; Woodhead 1988; Zigler and Freedman 1987; Ramey and Ramey 1992).

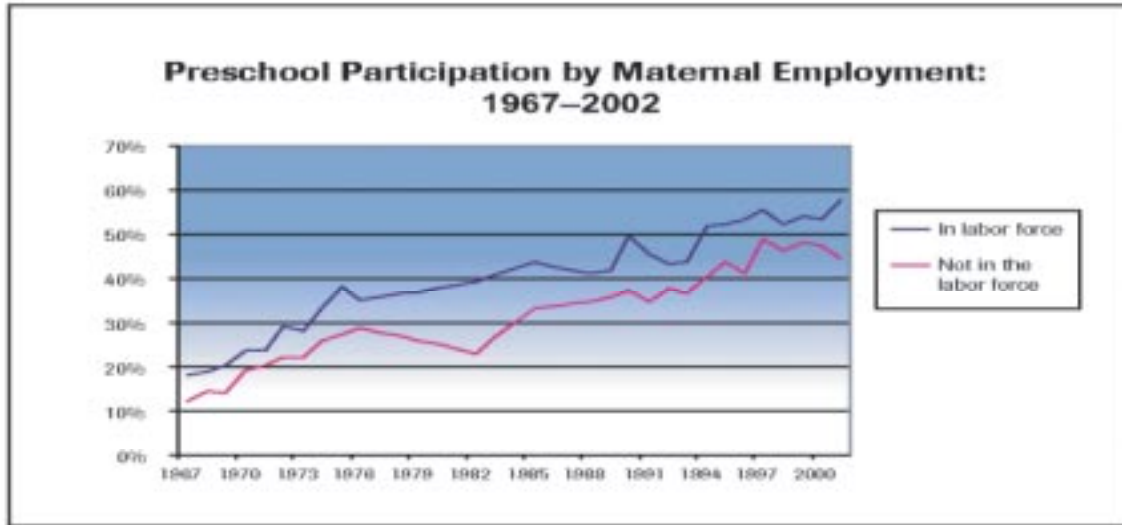
SHORT TERM EVIDENCE

Many studies have been conducted on the immediate and short-term effects of preschool programs. Most of this research is found in two largely separate but related literatures, one on educational interventions and the other on child care. Traditionally, these literatures have focused on different questions with different populations and have had different theoretical and methodological orientations. In recent years, there has been some convergence (Barnett 2003).

Early Intervention Studies

Most of the educational interventions have been half-day or school-day programs over a school year targeting children who are economically disadvantaged or otherwise at elevated risk of educational failure. Typically these efforts begin at age three or four. In a few studies the interventions began before age one and provided services for up to 10 hours per day year-round (these programs combine effective child care with education). Some other intervention programs worked primarily in the home, seeking to change parent behavior in ways that would improve child development. Interventions have in some cases combined both center-based and home-based approaches (Barnett 1998; Bowman, Donovan, and Burns 2001).

Figure 1



Source: Current Population Survey (C.P.S.) 1967-2002
 Data for the following years have been interpolated: 1977-1981, 1983, 1984 and 1986

The early intervention literature has focused on looking for positive effects on child development. There are literally hundreds of studies of immediate effects, and their findings have been conveniently summarized in both quantitative meta-analyses and traditional literature reviews (Guralnick and Bennett 1987; McKey et al. 1985; Ramey, Bryant, and Suarez 1985; White and Casto 1985). Across these studies, the average initial effect on cognitive abilities is about 0.50 standard deviations, seven or eight points on an IQ test. Average effects on social and emotional outcomes also were positive, though somewhat smaller, 0.25 to 0.40 standard deviations. Little evidence of negative effects is found in these studies. Similar results are found across studies employing a wide variety of research designs, including randomized trials and single-subject designs in which the “treatment” was experimentally manipulated.

Child Care Studies

Research on child care has tended to study the effects of typical child care arrangements on the general population, with an emphasis on potential negative impacts on social and emotional development. More recently, the field has increased its attention to cognitive development and the potential for positive effects. Studies have relied on statistical analysis of natural variation rather than experiments. Over time, child care research has evolved from asking about the average effects of care

to asking how the effects of care vary depending on quality and the characteristics of children and families (Scarr and Eisenberg 1993).

Child care has not proved as detrimental as some predicted, but long hours have been found to produce small negative effects on child–mother attachment and social behavior, particularly aggression (Barnett 2004; Lamb, Sternberg, and Ketterlinus 1992; Scarr and Eisenberg 1993; Vandell 2004). These negative findings should be viewed with caution: Some researchers question the conceptualization and measurement of attachment, the behaviors of most children in child care remain in the normal range, and negative effects on behavior do appear to persist past the first few years of school (Barnett 2004; Scarr and Eisenberg 1993; Prodroidis et al. 1995; Burchinal 1999; Howes et al. 1988; Borge and Melhuish 1995; Belsky 2001; Vandell 2004). Center-based programs also have been found to produce small, positive effects on cognitive development. Positive effects generally have not been found for other forms of child care such as family home day care.

LONG-TERM EVIDENCE

The case for significant economic returns from investing in preschool education rests not on the short-term research, but on fewer than 40 long-term studies conducted since 1960. Three with the longest follow-ups

have been subject to benefit–cost analysis. Barnett (1998) reviewed 36 of these studies with follow-ups through at least the third grade. This includes 15 studies of small-scale “model” programs and 22 studies of large-scale public school and Head Start programs. The pattern of evidence from these studies is complex. Most fail to find persistent effects on IQ. Some, but not all, find persistent effects on achievement test scores. Many find effects on academic success as measured by grade repetition and special education placements. Very long-term follow-ups have consistently found increases in high school graduation rates. Whether or not a study finds positive lasting cognitive effects primarily depends on differences in research methods, with several common flaws accounting for failure to find lasting effects.

Fewer studies have examined long-term effects on social and emotional development. Most of these have found persistent positive effects on social behavior. None have found persistent negative effects on social behavior. Beyond improvements in classroom behavior and juvenile delinquency, several studies have found substantial decreases in adult crime. Whether or not studies find lasting social and emotional effects appears to depend on policy-relevant differences across studies rather than methodological differences. These are discussed at length later in this paper.

Although the types of effects produced do not differ for the most part between the two categories of long-term studies reviewed, the magnitude of effects does appear to differ. Barnett (2002) compares the average effects of small-scale and large-scale programs on grade repetition and special education placements (Barnett 2002; Vandell 2004). These two outcomes are directly comparable across a substantial number of studies. As shown in table 1, the small-scale studies report much larger effects, though the large-scale study effects are still

substantial. The reasons for this difference in effectiveness are difficult to isolate as the small-scale programs are higher in quality and serve more seriously disadvantaged populations (who have higher base rates of these problems).

Cost–benefit analyses have been conducted using data from three studies that followed children from the preschool years into adulthood. All three analyses find positive net benefits. The two that focus on part-day programs at ages three and four are found to produce benefits far in excess of cost. The study that focuses on a program that provided education in the context of full-day child care from the age of six weeks to kindergarten entry found that benefits exceed cost, but not by such a large a margin. In the case of the Perry Preschool study, the corresponding internal rate of return has been calculated to be a real rate of 16 percent. This is more than double the historic rate of return to private equities. Moreover, there are many reasons to believe that these analyses actually underestimate the returns. The studies and their findings are summarized in table 2.

The evidence reviewed above leaves little doubt that preschool can be a remarkable investment with high returns and important impacts on the educational, social, and economic success of children growing up in disadvantaged circumstances. Yet, the evidence also raises concerns that such gains will not be realized when public policies are brought to scale. Not all studies have found the same results. Moreover, the continued poor educational outcomes of children in poverty raises questions about the effectiveness of current programs—the federal Head Start program serves more than 900,000 children at a cost of \$7 billion per year, state and local governments spend several billion dollars on their own prekindergarten programs, and the federal government and states allocate billions more to subsidize child care (Barnett et al. 2004; Barnett and Masse 2003).

TABLE 1: PERCENTAGE POINT DECREASE IN SPECIAL EDUCATION AND GRADE RETENTION, BY PRESCHOOL PROGRAM TYPE

Outcome measure	Model programs			Head Start/public school		
	Mean	SD	N	Mean	SD	N
Special education	19.6**	14.6	11	4.7**	5.3	9
Grade repetition	14.9*	9.8	14	8.4*	5.4	10

* $p < .01$, two-tailed t test with unequal variances; ** $p < .05$, two-tailed t test with unequal variances.

TABLE 2: THREE BENEFIT–COST ANALYSES

	High/Scope Perry Preschool	Carolina Abecedarian	Chicago Child- Parent Centers
Year began	1962	1972	1985
Location	Ypsilanti, MI	Chapel Hill, NC	Chicago, IL
Sample size	123	111	1,539
Research design	Random assignment	Random assignment	Matched neighborhood
Ages	Ages 3–4	Six weeks to age 5	Ages 3–4
Program schedule	Half-day, school year	Full-day, year-round	Half-day, school year
Findings			
Increased IQ short term	Yes	Yes	Not measured
Increased IQ long term	No	Yes	Not measured
Increased achievement long term	Yes	Yes	Yes
Special education	37% v. 50%	25% v. 48%	14% v. 25%
Retained in grade	35% v. 40%	31% v. 55%	23% v. 38%
High school graduation	65% v. 45%	67% v. 51%	50% v. 39%
Arrested by 21	15% v. 25%	45% v. 41%	17% v. 25%
Benefit–Cost results			
Cost	\$ 16,264	\$ 36,929	\$ 7,417
Benefit	\$277,631	\$139,571	\$52,936
Benefit/cost ratio	17.07	3.78	7.14

IMPROVING RETURNS

The major potential determinants of the effectiveness and economic returns of a preschool program can be characterized as person, process, and context. Person refers to the population served. Process refers to the program delivered. Context refers to the broader educational and social environment in which the program is delivered. Although much remains to be learned, existing research provides insights into the importance of each of these potential determinants of impact and returns.

Person

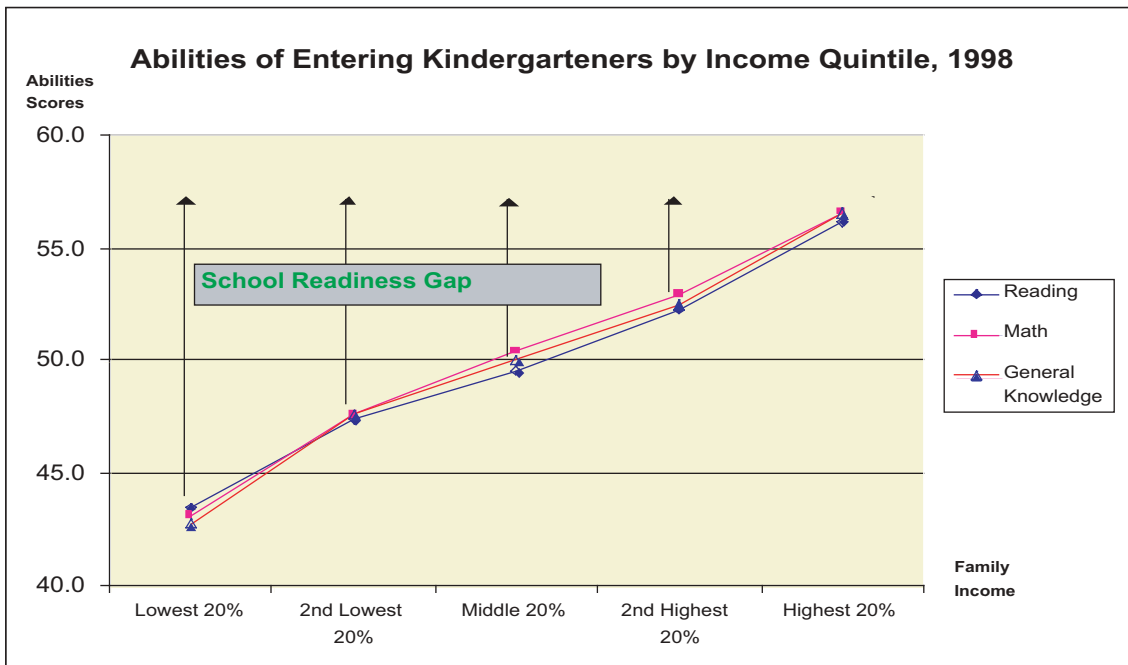
Most studies of program impact have focused on low-income populations with a high percentage of minority children. These populations have relatively high levels of the problems that preschool programs seek to address and that account for much of the economic return: low cognitive and social skill levels at entry to kindergarten, high rates of grade repetition and special education placements, low rates of high school graduation, low earnings, and high crime rates. In addition, some studies of the effects of variations in child care

quality on children's development have found larger effects for more disadvantaged children. This is consistent with the view that preschool programs' added resources yield the largest gains for children whose families have the least capacity for investment.

Research on the prevalence of educational problems among children generally is suggestive, also. As illustrated in figures 2 and 3, the relationship between family income and children's social and cognitive abilities at school entry is nearly linear. If it is assumed that families in the top 20th percentile for income provide optimally for the development of their children, then children at the median income are approximately half as far below "optimal" development as children from families in the bottom 20th percentile. Similarly, table 3 shows that the problems of grade repetition and high school dropout are roughly half as prevalent among children from middle income families as they are among children from families in the bottom 20th percentile.

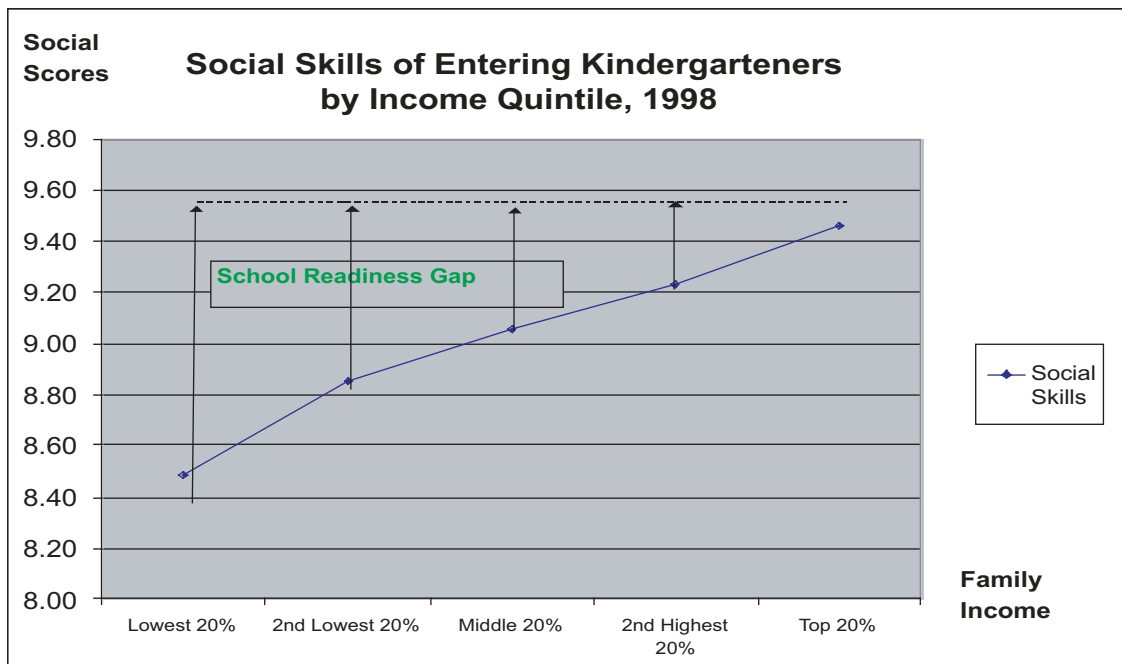
These data suggest that programs targeting children in poverty will have the largest returns and that returns decline more or less continuously with income. They

Figure 2



Source: Barnett, W.S., Brown, K., and Shore, R. (April, 2004). The universal v. targeted debate: Should the United States have preschool for all? *Preschool Policy Matters, Issue 6*. New Brunswick, N.J.:NIEER.

Figure 3



Source: Barnett, W.S., Brown, K., and Shore, R. (April, 2004). The universal v. targeted debate: Should the United States have preschool for all? *Preschool Policy Matters, Issue 6*. New Brunswick, N.J.:NIEER.

also suggest that the average return for the middle class might be half that for children in poverty. If so, the impacts on middle-class children would be sufficiently large to justify investing in public preschool programs for them, as well.

When choosing between targeted and universal approaches, policy makers also must take into account the costs and imperfections of targeting on a large scale. It is particularly difficult to target education programs on poor children because education must be delivered continuously over a substantial period of time to be effective, but poverty is a status that changes frequently. For example, surveys find as many as half of the children enrolled in Head Start are not poor, while most children in poverty are not in Head Start. Targeting imperfections could account for some of the difference in impacts between large-scale and small-scale programs. Of even more importance, benefits for most of the target population are lost because they are not actually served by targeted programs. By contrast, universal education programs miss few children in poverty.

TABLE 3: GRADE REPETITION AND DROPOUT RATES, BY INCOME

Income	Retention	Dropout
Lowest 20%	17%	23%
20%–80%	12%	11%
Highest 20%	8%	3%

Source: U.S. Department of Education, National Center for Education Statistics, 1997, *Dropout Rates in the United States, 1995*; figures are multiyear averages.

Targeting a program on children at risk of school failure is costly and imperfect. In fact, it may be so costly and imperfect that the costs exceed the benefits. Table 4 presents cost–benefit comparisons of targeted and universal programs using the results of the Perry Preschool study and simple but realistic assumptions about program participation and extrapolated benefits. These comparisons use a real discount rate of 7 percent.

Assumptions for each policy alternative are as follows. The targeted program serves 20 percent of the population in each age cohort. This roughly equals the percentage of preschool children in poverty nationally. However, the targeted program enrolls only half of the poor population; the other half of the children enrolled are nonpoor. This is comparable to Head Start. Benefits

for nonpoor children in the targeted program are assumed to equal half the benefits for poor children. Two universal scenarios (A and B) are considered. In both, all children in poor families (bottom 20 percent) and the middle class (20th–80th percentile for income) are enrolled, and half of the top 20 percent are enrolled. Benefits for children in the top 20 percent are assumed to be zero for this example. In A, middle-class children are assumed to generate benefits equal to half that for poor children. In B, middle-class children are assumed to generate only enough benefits (one-sixth those of poor children) to offset cost. Remarkably, even under B, the universal program still has a higher net present value. Clearly, targeted programs need not be more efficient than universal programs.

PROCESS

Preschool programs vary tremendously in their quality and quantity, much more so than elementary schools. There is abundant evidence that this impacts their educational effectiveness and that the vast majority of preschool programs are educationally weak (Helburn and Howes 1996; Barnett 2004; Peisner-Feinberg et al. 1999). Program effectiveness could be significantly improved if programs were more closely aligned with models found to be highly effective. In addition, further improvements in effectiveness could be achieved by systematically varying public programs to investigate the impacts of program characteristics that are relatively easy for policy to manipulate.

Quality

As discussed earlier, small-scale model programs had significantly larger impacts than large-scale public programs on children’s learning and on later school success. On the whole, the small-scale programs had better qualified and compensated teachers, smaller classes, and higher teacher–child ratios. In addition, it seems likely that they had stronger supervision and more systematically engaged in reflective teaching and teacher–child interactions similar to those that children would encounter in the elementary school (Frede 1998). These advantages in practice were facilitated by teacher (and supervisor) quality and ratios that made intensive individualization possible.

The contrast between the programs found to be most effective and current policy is stark (Barnett et al. 2004; Barnett 2003a, 2003b). The typical teacher in a small-scale program had a college degree and received

TABLE 4: COSTS, BENEFITS, AND NET PRESENT VALUE OF RETURNS TO TARGETED VERSUS UNIVERSAL PREKINDERGARTEN

Family economic classification	Number of children	Cost (billions)	Benefit (billions)	Net present value (billions)
Targeted Preschool Program				
Low	383,871	\$ 5.5	\$ 34.3	\$ 28.8
Middle	383,871	5.5	17.2	11.6
High	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	767,742	\$ 11.0	\$ 51.5	\$ 40.5
Universal Preschool Program: Scenario A				
Low	767,742	\$ 11.0	\$ 68.6	\$ 57.6
Middle	2,303,226	33.1	103.0	70.0
High	<u>383,871</u>	<u>5.5</u>	<u>0</u>	<u>-5.5</u>
Total	3,454,839	\$ 50.0	\$ 172.0	\$ 122.0
Universal Preschool Program: Scenario B				
Low	767,742	\$ 11.0	\$ 69.0	\$ 58.0
Middle	2,303,226	33.1	33.1	0
High	<u>383,871</u>	<u>5.5</u>	<u>0</u>	<u>-5.5</u>
Total	3,454,839	\$ 50.0	\$ 102.0	\$ 52.1

compensation equivalent to that in the public schools. The teacher-child ratio frequently was 1:7 or less and group size usually was 15 or less. Yet, today most preschool teachers in the United States do not have a college degree and their average pay is half that of K-12 teachers. The federal Head Start program requires only that half the teachers (nationally) have a two-year degree, and teacher pay is correspondingly low. Only 23 states require that teachers in state-funded prekindergarten programs have a four-year college degree and only 13 require a college degree and certification in preschool education. Class size and ratios are highly variable. One teacher and an assistant (with no more than a high school diploma) to 20 children is a common requirement. No state requires that teachers in child care have a college degree, and childcare class size and ratio requirements are even more lax than for state-funded prekindergarten programs.

The disparities in program characteristics outlined above seem more than sufficient to explain why current programs do not replicate the results of highly effective programs. It also would explain why estimated effects

tend to be largest for state prekindergarten programs, and smallest for center-based child care programs. Studies find no benefits from family home child care as opposed to center-based programs. More specific guidance can be obtained from studies that focus on the effects of teacher qualifications, class size and ratio, and curriculum. Note that such effects are unlikely to be independent. For example, a strong curriculum is difficult for poorly educated teachers to implement.

Numerous studies of the effects of preschool teacher qualifications indicate that both general education and specific training in the education of young children influence teaching quality and children's learning and development (Barnett 2003b). A meta-analysis of this literature finds an average effect size of .16 for teachers with a bachelor's degree (18 studies) and an average correlation of .21 (15 studies) with years of education, where the outcomes are either teaching quality or child progress (Kelly and Camilli 2004). Note that the situation in preschool education is quite different from that in K-12, as the issue there typically revolves around whether a master's degree contributes to teacher effectiveness over a bachelor's

degree (as opposed to a bachelor's degree over a high school diploma or associate's degree).

Research on class size and ratios has found that smaller classes and better ratios are associated with better teaching and improved outcomes for children (Barnett, Schulman, and Shore 2004). When classes and ratios are more favorable, teachers engage in more stimulating, responsive, and supportive interactions, more individualized attention, and more dialogues; and they spend less time managing behavior and more time in educational activities. Studies finding smaller class sizes lead to better test scores include randomized trials at the preschool and kindergarten level. An overview of the evidence suggests that substantial effects of class size may be obtained only when classes are reduced to 15 or fewer children (or the equivalent ratio).

Research on the effects of curriculum, including long-term randomized trials, has produced a number of important findings (Schweinhart and Weikart 1997). One is that direct instruction has larger short-term effects on cognitive test scores, though these extra gains do not necessarily persist. Another is that direct instruction fails to produce positive effects on social and emotional development. As the social and emotional gains can account for most of the economic return, it is essential for economic efficiency that they not be sacrificed for somewhat higher test scores. Thus, it is important that preschool programs have a balanced curriculum that produces substantial increases in academically important knowledge and skills and in social and emotional skills. Important aspects of cognitive and social development that may influence success in and out of school include self-regulation, getting along with others, the ability and inclination to plan and take responsibility, positive attitudes toward school and other social institutions, and creative problem solving.

Research also provides a fair number of studies that can inform policy about what does not work. Multiple randomized trials have found that attempts to intervene through comprehensive social and educational services have had little or no positive effects. The Comprehensive Child Development Program (CCDP) was found to produce small effects on some parent behaviors and child development (an effect size of 0.10) at age two and no meaningful effects at age five (St. Pierre and Layzer 1999; Vandell 2004). Studies of the Avance family support program, Child and Family Resource Program, and New

Chance failed to find significant effects on child development (St. Pierre, Layzer, and Barnes 1998). Research on Even Start found small effects, at best, on children (St. Pierre et al. 1998). Early Head Start (a birth to age 3 program) was found to produce small effects on child and parent outcomes (Love et al. 2001). One explanation for these findings is that even fairly expensive programs that seek to provide comprehensive services to children and families end up delivering weak, diffuse services that may duplicate much of what is available elsewhere.

Home visit programs also have generally failed to influence parenting and improve children's cognitive development (Scarr and McCartney 1988; Levenstein, O'Hara, and Madden 1983). Two randomized trials on Parents at Teachers (PAT) found small and inconsistent effects on parenting knowledge, attitudes, and behavior and no effects on child development (Wagner and Clayton 1999). A randomized trial of the Home Instruction Program for Preschool Youngsters (HIPPI) found significant effects on cognitive development for one cohort, but not another (Baker, Piotrkowski, and Brooks-Gunn 1999). A randomized trial comparing full-day, year-round educational child care plus home visits to parent education alone and to no treatment found equivalent outcomes for home visits and no treatment (Wasik et al. 1990). A randomized trial of home visits in Head Start found no effects on home environment or child development (Boutte 1992). One potential explanation is that home visits may have to be much more frequent than is usually the case to be effective (Powell and Grantham-McGregor 1989; Gomby, Culross, and Behrman 1999).

Studies of home visitation and comprehensive services approaches strongly suggest that attempts to influence child development through parents are relatively weak. A fairly intensive level of direct service may be required to produce substantial effects on children's cognitive development, in particular. However, further research is warranted on the circumstances under which parent-directed programs might be highly effective (Kagitcibasi 1997; Barnett, Escobar, and Ravsten 1988; van Tuijl, Leseman, and Rispen 2001). Relatively intensive nurse home visitation programs beginning during pregnancy have had substantive impacts on children and families, with small effects on cognitive outcomes. New studies should carefully document cost; home visit programs can be much more expensive than is commonly supposed (St. Pierre et al. 1998).

Quantity

Isolating the effects of the age at start and the duration of preschool education is difficult given the myriad ways in which the intensity and other characteristics of programs vary. In addition, there is considerable uncertainty about how to measure quantity. Simply comparing the number of hours across programs that differ in the number of days or even years across which those hours are spread seems unsatisfactory. Some of the more effective models have delivered relatively few hours—the Perry Preschool program provided two and a half hours per day plus weekly home visits with children and their parents. No direct experimental comparisons reveal the impacts of additional hours per day or beginning the program at age four rather than age three. Kindergarten studies suggest a cognitive advantage for full-day over half-day programs. Some studies find that starting at an earlier age produces larger gains for preschool children, but do not necessarily find a full day to be more effective (Sammons 2002a, 2002b).

One finding that stands out is that only programs beginning with infants and continuing up to age five have demonstrated permanent (albeit modest) increases in IQ. These programs also produce quite large gains in achievement and school success. As these programs provided child care, they operated full-day, year-round and provided a large number of hours of services. Clearly, such programs are much more expensive. Having relatively few studies of high-quality birth-to-age-five interventions and lacking true experimental comparisons with shorter programs, it is difficult to assess marginal benefits relative to the marginal costs. For those children already in child care, it is the extra cost of providing educational quality that is relevant, not total cost of the program.

The fact that child care is a joint product with education complicates matters with respect to the effects of length of day and (to a lesser extent) days per year. Whether or not they influence child development, the hours of operation influence parental willingness to send their children. Many working parents find it difficult to transport their children to and from part-day programs and to obtain alternative child care arrangements for the rest of the day and for work days when school is not in session. When preschool offerings are limited to two to three hours on school days some parents will send their children elsewhere, forgoing the child development benefits (Barnett et al. 2001).

Context

The impacts of preschool education can vary with the broader contexts within which children live and programs operate. The most obvious source of variation is where K–12 policies directly affect the outcomes targeted by preschool education. For example, if a school district has a policy that no children will be retained in a grade, then there will be no effects on grade repetition. If a community has very little crime and violence, the baseline rates may be so low that even very disadvantaged children have limited involvement with crime. Conceivably, a K–12 education system may be so weak that children who enter kindergarten advantaged by preschool education can obtain no support to maintain those gains. The results of the Perry and Chicago studies and many others suggest that this may be of more theoretical than practical concern (Barnett 2002).

Nevertheless, there may be reason for concern that bureaucratic inertia and special interest groups can limit the realization of benefits from large-scale preschool programs. When preschool programs reduce the need for grade repetition and special education, there may be some tendency for schools to find students to fill the classes and employ the current configuration of teachers and support staff. There may be a reluctance to cut back on law enforcement and prisons, so that harsher sentences might result as space becomes available. Although it is difficult to address the issues outside of education, it should be easier to coordinate K–12 policy so that large reductions in grade repetition and special education are realized.

Finally, large-scale preschool education, particularly universal programs (at least within a school district), might be expected to produce larger gains because of peer effects (Barnett 1996; Schecter n.d.). If everyone in a classroom has attended preschool, classroom climate will change, median ability will rise, and dispersion in ability will narrow (those at the bottom gain most). This would make teaching easier and children would be likely to gain from the improved peer interactions. This kind of general equilibrium effect might have consequences beyond the classroom, and how large these would be could depend on whether there are critical “tipping points” for peer effects and whether these are reached.

DISCUSSION

The evidence for potentially large returns to preschool education stands in stark contrast to the evidence of actual performance for many of our preschool programs, private as well as public. The contrast in program quality is equally stark and seems likely to explain much of performance gap. Currently, the nation invests too little in providing children who can benefit the most with access to preschool education and in ensuring that the programs accessed are of optimal quality.

The poor quality of most private preschool programs is more than readily explained by market imperfections that afflict preschool education. The externalities are extremely large, both in absolute terms and as a percentage of benefits to be obtained, so that the private incentives to purchase high quality are far lower than is consistent with the social benefits. As agents for their children, parents face serious impediments to making optimal investments. They do not appear to be good judges of quality, and the service they purchase is difficult for them to directly observe (and their children are too young to deliver reliable reports on quality). For any individual parent there is a risk that the benefits will be lost because of later events that can override the modest effects of preschool education (as well as death of the parent or child), and these risks seem likely to be higher for low-income families. In addition, there are limits to parental altruism and some behavioral economics would suggest that returns 20 to 40 years in the future may be seriously undervalued in parental decision making.

Public action is needed to produce more optimal investments in the education of young children, but currently falls short of ensuring that the kinds of returns that are possible are actually delivered. Given their relatively low costs, Head Start and state prekindergarten programs might pass a simple cost-benefit test. Most publicly subsidized child care programs would not; funding increases have emphasized quantity and neglected quality. There are very large additional gains to be had at modest additional costs by moving the quality of all of these programs in the direction indicated by model programs that produced much higher returns

Most public support for preschool education targets children in poor or low-income families. This is consistent with evidence that returns are higher for public investments in the education of these young children. However, targeting proves to be highly inaccurate in

practice, particularly with respect to a status that changes fairly frequently and a service that must be provided consistently over a sustained time. Moreover, substantial benefits to children's learning and development extend far up the income ladder. Thus, targeting may not be an economically efficient strategy. Obviously, this need not imply free public preschool education for all—options for cost sharing include sliding fee scales, including those for only hours beyond a core educational part of the day. Nevertheless, a number of states are moving in the direction of offering free public education beginning at age four, and it is possible that this policy is more efficient than offering a targeted program.

In an era when mandated achievement tests are increasingly seen as the key to driving more efficient public education, preschool studies suggest caution on at least one point. The economic benefits from improvements in social and emotional development may be larger than those from improvements in cognitive development. While the latter should not be neglected, a balanced curricular approach is required to obtain large gains in both. The approach that maximizes test score gains may minimize social and emotional gains. If test scores alone, or even primarily, drive preschool education practice, the results could be highly inefficient. It may be possible to introduce valid assessments of social and emotional development (adding physical might be useful as well given concerns with obesity) to accountability systems. However, the extent to which accountability systems actually provide unbiased estimates of program performance is highly questionable.

Economic returns are to some extent dependent on context. Much of the social and economic context for preschool education is beyond the control of policy makers. Even that which is not may be much more heavily influenced by other considerations. Still, some aspects of K-12 education policy should be carefully examined for alignment with preschool education policy. Where high-quality preschool programs are introduced on a large scale, K-12 education should be expected to substantially reduce grade repetition and special education places, particularly for children from low-income families. Prohibiting grade repetition in all but a few rare cases may be a sensible response. Finding the appropriate policy response with respect to special education will be more complex.

Finally, although it is clear that preschool programs should move in the direction of higher-quality, more intensive education, much remains to be learned about exactly where programs should be moved. Moreover, the optimal quantity and quality of preschool education may differ among children and communities. Substantial progress toward providing policy makers and parents with better information could best be obtained by systematically experimenting with alternative hours, staffing,

ratios, group sizes, and other aspects of programs. The federal and state governments could easily conduct such experiments in ways that allow for the interaction of person, process, and context. Making such studies a regular part of program operation would create a system for permanent improvement and response to change that is missing from public education for older children.

ENDNOTE

¹A substantial portion of the Abecedarian control group attended child care so that the analysis to some extent captures the marginal benefits of the treatment above usual child care.

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The Public Interest in Higher Education

Michael J. Rizzo

The American public is certainly *interested* in higher education. Fifty-two percent of adults over age 25 and 62 percent of high school graduates (down from 67 percent in 1997) had spent some time in college by the end of 2001.¹ The press produces thousands of pages annually on the topic. Congress spends hundreds of hours each year in debate on it. Millions of citizens take advantage of college athletics events, cultural programs, facilities and the fruits of university research. These facts alone say nothing about the necessity of public funds to *support* higher education.² This paper analyzes when and why (if at all) the public should be interested in higher education and provides a brief survey of what economists currently know about the public benefits produced by investments in higher education.

Universities, particularly the publics, are increasingly bemoaning the budgetary squeeze caused by the slowing economy and changing governmental priorities.³ As academe aggressively pursues business and civic leaders to support higher education, these and other policymakers justifiably want to understand the role that it plays in economic development. Countless studies have demonstrated that the private returns to higher education investments are large and increasing. Comparatively little is known about the social returns to higher education investments.

Social returns are the *net* benefits that accrue to society from both private and public investments in higher education. Taxonomy can be confusing in the literature, so throughout this paper what I call the social returns is actually the sum of private and public returns. The public returns are those returns that accrue to society *beyond* those that accrue to the individuals making the investment.⁴ Focusing on the purely monetary aspect of higher education investments, individuals will choose the socially optimal level of education if they can realize *all* of the gains from their investments—assuming they are not restricted from choosing to invest. Society will reap the benefits of increased tax collections when individuals graduate from college. To the extent that individuals would not be able to receive benefits equal to the amount of the increased tax payments (for instance, the more money I earn, the less

likely I am to require welfare and Medicaid benefits), they may choose to underinvest in schooling from a societal standpoint.⁵

Private earnings increments constitute a portion of the social returns to higher education that are well understood and whose measurement has become more accurate with the advancement of new and creative empirical techniques—I will discuss them only in passing in this paper. In order for policymakers to make informed decisions, they must address four questions beyond understanding the private investment decisions of individuals. First, what are the economic and noneconomic benefits (both public and private) of higher education investments beyond the expected earnings advantages of individuals? What is the theoretical rationale for when public investments are justified? Second, what types of returns can be expected? Do we know anything about the expected magnitude of these returns? Third, how can one measure the social returns? Fourth, what are the analytical and practical challenges to measuring these returns and implementing policy?

The following section will address these four questions in turn, with a focus on surveying what economists currently know and are working toward with respect to each. The remainder of the paper will discuss issues I feel are particularly important for understanding fully what the public returns to investments in higher education are. These topics include examining the role of agricultural and cooperative experiment programs at universities and the prospects for their future; complementarities between higher education and elementary and secondary education; the role of community colleges; states' capacity to educate their citizens and the role of nonresident enrollments in higher education; the relationship between higher education and the workforce; and support for undergraduate education versus support for "big science" and technology transfer.

The Benefits of Higher Education

Public spending on higher education is justified any time that private individuals, guided by their own devices, would choose suboptimal levels of schooling from the standpoint of society.⁶ To a degree, determining

what is optimal for society entails some measure of subjectivity and value judgment on part of its citizens. However, the same can be said of noneducation spending, so while I acknowledge this challenge, I will discuss it no further. A broad economic definition of an educational benefit might be anything that shifts out the utility possibility function of society (including production possibility shifters such as labor productivity); anything that reduces costs and makes resources available for more productive uses, such as increased employment opportunities, which may release resources from law enforcement by cutting crime rates; and anything which increases welfare possibilities directly, such as public spiritedness or social consciousness of one's neighbor. The benefits of higher education, both private and public, can be partitioned into pecuniary and nonpecuniary benefits.

Pecuniary returns are anything that improves the financial well-being of individuals and the public. These would include the increased tax receipts collected from educated citizens. In addition, this larger and deeper tax base would reduce the tax pressure on the lower-income members of society at the same time as reducing the number of people that would require support from all levels of government. A rather substantial pecuniary benefit of higher education that is almost universally ignored in economic research as well as the debate on higher education funding is what Burton Weisbrod (1962) called the "financial option" return of educational investments. Part of the monetary value of completing an education is that passing through various schooling thresholds provides one with the opportunity to obtain still more education. If students are unaware of this option value at the time of making their investment decisions (and this might be especially prevalent among students from disadvantaged families or families with lower average education levels), public subsidies can help avoid systematic underinvestment. Though it is easy to see why the option value is largest for more elementary levels of education, the changing technological and economic conditions of the twenty-first century are inflating the option value of a college education. I am confident you have overheard someone complaining that, "It now takes a college education to land the same job that a high school graduate could have landed 20 years ago." This trend captures the essence of the financial option.

The nonpecuniary benefits of higher education are all of the nonmonetary benefits that accrue to individuals and society. The difficulty in attaching a dollar value to

most of these types of benefits (and in many cases, recognizing) is likely responsible for the dearth of economic studies that focus on measuring the public returns to higher education and for the apparent understatement of the benefits in those studies that do exist. The most easily recognizable nonpecuniary benefits include the private and public consumption benefits of higher education. Individuals may gain more than an earnings advantage from going to college—they might actually (gasp) enjoy class and the social activities on campus, have their intellectual and cultural horizons expanded, and be able to tap into a vast network of educated alumni and friends. The public is welcomed at even the most proprietary of institutions, and the benefits they enjoy include taking part in the arts, special lectures, athletics programs, and other campus facilities (coffee shops, arboreta, gymnasias, etc.).

Other recognizable nonpecuniary benefits include promoting educational opportunity, promoting growth and economic productivity, supplying trained men and women to the economy, achieving specific social objectives such as income transfer or equalization, developing an educated citizenry, creating knowledge, and stimulating learning. There is a growing literature in human ecology that finds that female and maternal education affects children's health, female mortality, female fertility, birth rates, and the "quality" of children.

Economist Alfred Marshall knew that it would be difficult to identify all of the benefits of higher education when he said, "All that is spent during the many years in opening the means of higher education to the masses would be well paid for if it called out one more Newton or Darwin, Shakespeare or Beethoven."⁷ Colleges not only instruct students, but the society benefits of the research activities from faculty members.⁸ Many believe that the volume of basic research would be smaller in the absence of higher education. To the extent that the value of research is captured by faculty salaries (and other mechanisms such as ownership rights on the research), the private returns will capture the externality.

Three additional nonpecuniary benefits deserve mention. First, higher education can widely broaden individual employment choices and expand the geographical area under which one might consider working and living. This private "opportunity option" is particularly important in the twenty-first century as labor markets are increasingly national in scope and transportation and relocation costs (actual and psychic) are much lower

today than in the past.⁹ Second, higher education acts as a “technology hedge” in the sense that the more educated a worker is, the more able she is to adapt to technical changes in the workplace. This hedge option lends importance to the support of a broad liberal arts undergraduate education. While these benefits will not manifest themselves through higher earnings, they may be internalized in greater job security, earnings stability, and a greater capacity to benefit from on-the-job training. Third, my obtaining a higher education will have direct and indirect intergenerational benefits. The direct effect is that my children will receive an informal education at home. The indirect externality is that children of college-educated parents are much more likely to receive a college degree or pursue careers in different fields, whose value cannot be solely judged by earnings. Individuals with a high discount rate may not consider these benefits at the time investments are being made—providing the impetus for intervention by an entity that cares about the long-term prospects of our society.¹⁰

When Public Interest Is Justified

That higher education produces substantial private and public benefits is not *prima facie* confirmation that public subsidies are justified. For every stated benefit above, there are related costs and the measurement issue is no less difficult on this side of the ledger. A careful accounting of all tangible and opportunity costs is a necessary condition for informed decision making. Broadly speaking then, there are three economic criteria that must be jointly satisfied in order for additional investments in higher education to be a socially efficient allocation of resources.¹¹ First, higher education investments must have a positive *net* social benefit. That is, the sum of private and public benefits must exceed the sum of private and public costs. Second, individuals must be restricted from investing in the socially optimal level. This may occur if personal discount rates are very high (due possibly to laziness, poor health, economic hardship, etc.) or more generally when private individuals cannot capture all of the private benefits, and/or when there are additional public benefits that private individuals do not take into consideration when choosing to undergo an investment. Third, the net social return to higher education investments must be larger than any competing use of public monies *at the margin*.¹²

Individuals may not choose the optimal level of education because externalities exist. Private investments in higher education may confer benefits upon three different groups of people. The first are residence-related

beneficiaries that benefit by virtue of the relationship between their place of residence and the student/institution. University communities have a large pool of energetic young people who perform community service; as mentioned above, universities have a wealth of activities and facilities that are open for public consumption; and most important, universities provide a wide range of public services including, but not limited to, cooperative and agricultural experiment research and programs. The second are employment-related beneficiaries or productivity spillovers. College-educated workers enhance the productivity of others by sharing knowledge and skills through formal and informal interactions of workers with heterogeneous skill levels. They also may produce technological externalities (Lucas 1988), knowledge spillovers (Gilles and Puga 2003), and pecuniary externalities (Acemoglu 1996). Society at large is also seen to benefit from private investments in higher education. Better-educated persons may make better and more informed policy decisions and be more active politically and socially.¹³ Society can also be seen to benefit because it is likely that education is an important input into the production functions of other publicly provided and supported goods. For example, it is very likely that the quality and quantity of national defense provided by the federal government depends heavily on the education level of the population and research productivity of college faculty members.

That institutions of higher education are responsible for producing positive spillovers that would not exist in their absence can be understood from watching a few scenes from the movie *Apollo 13*. When NASA understood that the lives of its astronauts were in jeopardy unless they could figure out how to unpoison the air in the lunar module, it did not ask each of its talented scientists to go home and figure out how to solve this problem. Rather, NASA put its best people in a room—where together they used their individual expertise in electronics, air filtration, mathematics, etc., to collaboratively come up with a solution. Colleges and universities bring together the most talented students (peer effects) and teachers precisely because the interaction among these people is likely to enhance learning and improve the quality of research and service above and beyond what would occur if all of America’s talented people were spread throughout society.

Imperfect capital markets are believed to cause significant underinvestments in education if left untended. The salient question is not really whether certain persons are

credit constrained—they most certainly exist. The right question is how difficult it would be to target subsidies to those who are constrained and to design programs that reduce the moral hazard resulting from the “savings penalty” imposed on thrifty households. The rationale for broad-based public support is that it is difficult to target the right individuals. Opponents of broad-based support suggest “leakage” is a problem—the extent that general subsidies are merely transfer payments to those that are not credit constrained.¹⁴ Finally, private underinvestment may result from a divergence between individual and societal goals—such as equality of opportunity.

Types and Magnitudes of Returns

The field of human capital was developed primarily because of the inability of standard classical economics to explain differences in national income growth between rich and poor countries. Because these variations could not be explained by the employment of traditional factors of production (labor, capital and land), it was reasoned that variation in quality, specifically in labor quality, must account for the missing variation. This development led to an intense study of the private returns to educational investments, but little study of the public returns. If a state/city wanted to develop a higher education policy to promote economic growth, it would be necessary to obtain information on the impacts of higher education on area wages, income growth, productivity, mobility, and civic behavior. Recent studies have attempted to address each of these issues.

A small number of studies of the public returns emanated during the middle half of the twentieth century. In 1957 Zvi Griliches estimated the social rate of return on hybrid corn seed research to be 700 percent and that the rate of return to all agricultural research was between 35 percent and 170 percent. In 1971, Burton Weisbrod found that economic returns alone to the polio vaccine approached 14 percent. The past 10 years have seen a reemergence of attention by economists toward this question. As in the early studies, it is nearly impossible to directly state what the “overall social rate of return to education” is, though economists are increasingly able to quantify some of the public benefits to higher education investments.

Glaeser, Scheinkman, and Shleifer (1995) studied the relationship between demographic characteristics of American cities and regions in 1960 and growth in income in these areas between then and 1990. Their major finding was that income growth over the period is positively

related to the stock of human capital at the beginning of the period. Similar to the international development literature, they find that income growth in cities can be characterized by their workforce structure and the rate of structural change that occurs. They find that income growth was faster in cities with low initial unemployment rates and in cities where a smaller share of the workforce is employed in the manufacturing sector.¹⁵

A number of studies have focused on the relationship between the stock of human capital in an area and the employment and income conditions in that area. Glaeser and Saiz (2003) show that the percentage of workers with college degrees strongly predicts future income growth rates in urban areas. They cite the dichotomous experiences of Boston and Detroit since 1980 to illustrate their point. In 1980, each city looked similar—shuttered manufacturing plants, declining populations, declining real estate values, and unpleasant winter and spring weather. However, Boston has enjoyed resurgence and Detroit has not. A large reason for this resurgence was that Boston focused on investing in industries and programs that were complementary to the large stock of educated people in that area and Detroit did not. In addition, more highly educated people are more able to adapt to changing technologies and move into new employment (Boston) than a generally less highly educated workforce (Detroit). A more detailed study of the differences between the two cities’ economic policies over the past 20 years would be a valuable exercise for any city, county, or state government trying to spur its own economic development.¹⁶

In a series of papers in 2004, Enrico Moretti examines how a more highly educated workforce may lead to economic growth. In one paper (2004b), he shows that highly educated workers produce positive spillovers to less skilled workers. He finds that cities that have larger shares of college-educated workers have higher wages for high school dropouts and high school graduates. A 1 percentage point increase in the city’s share of population who are college graduates will increase wages of dropouts by 1.9 percent and graduates by 1.6 percent.¹⁷ In a subsequent paper (2004c), he analyzes plant-level data to show that plant productivity in cities that experience large increases in the share of college graduates rises more than the productivity of similar plants in cities that experience small increases in the share of college graduates.¹⁸

Bound et al. (2004) investigate the relationship between the number of college graduates *produced* in

a state with the number of college graduates *residing and working* in that state. They demonstrate that the rate of production of college graduates in a state is weakly related, if at all, to the number of college graduates in a state—implying that it might not be necessary for a state to invest heavily in higher education for the purposes of economic development if it can import the talent from elsewhere. Groen (2004) asks a similar question at the individual level—what is the impact of attending college in a state on the probability of remaining in, and working, in that state? His results suggest a modest link between attending college in a state and working in the state. Each of these papers raises questions about the validity of government assertions that public support for higher education promotes increases in the human capital stock in an area. State monies may be better spent by creating research corridors and business environments that attract talented workers to their areas rather than trying to use merit scholarships and institutional aid in the hopes that talented students will remain after graduation.

Turning to the civic returns to higher education investments, two papers attempt to study the relationship between the education level of a population and voting behavior and other civic responsibilities. Dee (2003) finds large, positive, and significant correlations between education levels and voter participation (an additional year of schooling increases voter participation by 7 percentage points). He also finds strong, positive correlations between educational attainment and attitudes toward free speech and newspaper readership.¹⁹ Milligan, Moretti, and Oreopoulos (forthcoming) find, using U.S. and U.K. data, that voter participation is higher the higher the education level of the population. Raw data (that is, unconditional) from the Bureau of Labor Statistics show that that 45.6 percent of four-year college graduates participate in volunteer activities, while only 21.7 percent of high school graduates do (34.1 percent for students with some college). Further, the median hours donated per year is 12 hours higher for college graduates than high school graduates. Additional unconditioned data suggest that the civic returns to college education are large. DDB Worldwide reported in 2002 that 17 percent of college graduates donated blood regularly, while only 11 percent of high school graduates donated. Finally, a RAND study in 1999 completed by Vernez, Krop, and Rydell finds that government spending on social programs is substantially lower for 30-year old college graduates than for 30-year-old high school

graduates. The savings are larger for women (up to \$2,700 annually) than for men (up to \$2,300 annually), and are largest for African Americans and Hispanics (up to \$2,700 annually) than for whites and Asian Americans (up to \$1,500 annually).

How Are Social Returns Measured?

Social returns to higher education investments can be examined in three ways. The most commonly employed technique is a traditional benefit–cost analysis, or the rate of return analysis (ROR). These analyses compute the amount and timing of all private benefits and costs and all public benefits and costs and impute from these cash-flow streams an internal rate of return. A second technique that is gaining popularity is the economic impact study (EIS). An EIS attempts to add up all of the money generated and spent in a community by an institution of higher education—it then applies a multiplier to this dollar amount to determine the economic value of the institution to the community. The multiplier reflects the number of times a dollar is spent in the local economy before it flights—or leaves the boundaries of the community. A third approach, which is easier to implement for higher levels of government entities, estimates the contributions of higher education to the economy. These studies are always done econometrically—researchers regress net national (regional/local) income growth on traditional factors of production. The residual from this regression is typically attributed to education and is considered the amount of growth attributable to knowledge and other miscellaneous items.

Rate of Return Studies

Many economists would agree that the social returns found in these studies represent a lower bound on the returns to higher education investments. This derives from the difficulty in first identifying, and then measuring all of the relevant costs and benefits. A proper rendering of these models requires identification of four elements: private benefits and costs and public benefits and costs. Private costs are well understood—they include the out-of-pocket tuition and fees expenses (including books and other campus services), *incremental* living expenses, and the wage earnings given up by the student while enrolled. Getting a handle on the public and thus social costs has been more challenging.

In most studies, the *social* costs (that is, private plus public costs) are computed—they are taken to be the educational and general (E&G) expenditures of institutions plus all or part of a student's forgone earnings.

Though this has the advantage of including all private tuition payments, marginal living costs and costs of books and supplies are ignored. Research and public service costs are typically added to the cost side of the calculation, without any consideration of the benefits of these activities—only to those resulting from undergraduate or graduate instruction. Given this methodology, it seems inconsistent, then, to not decompose the E&G expenditure category further—it includes a large number of noninstructional dollars, even within the instructional expenditures category.²⁰ Upwards of 50 percent (or more) of faculty time at some universities is considered research time and, to the extent that students and society at large do not receive 100 percent of the benefits of this time (or if they do, if researchers choose not to include them), these calculations should not include 100 percent of the costs. As our colleges and universities move rapidly toward a research and big science model of higher education, correctly accounting for these factors will become more challenging, and more important.

The benefits side of the ledger is more difficult to account for correctly. Only pretax returns to private individuals are typically included in ROR analyses (the post-tax earnings account for the private benefit while the tax payments account for the public benefit). A large number of private and public benefits are either impossible to measure, or plainly ignored. These include the consumption benefits to students (Greek life membership, attendance at cultural and athletic events and, the pleasure obtained from learning) and to nonstudents as well (attendance at cultural and athletic events, educational programming, etc.). They also include the social investment benefits (lower welfare and crime rates, community leadership, and volunteer work of graduates, etc.) and all of the public benefits mentioned earlier in this paper. Ignoring the magnitude of these benefits will significantly depress the social rate of return calculations. However, the challenge in including them is that each benefit needs to be converted into an additional years of schooling equivalent or earnings equivalent to be included in the calculations. Some of these benefits are already being approximated, as evidenced by the studies cited earlier. Some benefits can be approximated with some effort—valuation methods adopted from the environmental economics discipline can be used to compute consumption and existence values for example. However, some benefits are nearly impossible to approximate—how much should a city of 500,000 value

a 15 percent increase in the probability that a cure for cancer will be found as a result of the research happening at the local university?²¹

Economic Impact Studies

These play an increasing role in state calculations of the value of public investments in higher education and in state attempts to stabilize and enhance their economies. States now often require economic impact statements and universities themselves prepare them to use in lobbying for increased support. There are three ways to implement an EIS. First, economic base studies employ surveys to obtain financial data—and can usually assert causality because they track expenditures from the institution throughout the local economy. The difficult task here is to separate expenditures representing local actual gains to the community economy from those that are recycled funds. An additional challenge is to determine which community funds are spent elsewhere, such as when a school uses local taxes to purchase goods and services produced elsewhere. A key issue to be resolved in these studies is whether the multiplier is larger for expenditures on higher education than it is for other items—admittedly, a very difficult proposition.²²

Second are traditional input–output approaches. These techniques derive from the field of regional and urban economics and divide a system of producers and consumers into different branches, which are defined in terms of the resources they require as inputs and what they produce as outputs. The quantities of input and output for a given time period, usually expressed in monetary terms, are entered into an input–output matrix within which one can analyze what happens within and across various sectors of an economy where growth and decline takes place and what effects various subsidies may have. The third approach is to use econometric modeling.

EIS are testimony to the fact that conventional ROR studies do omit important external benefits. These studies focus on the benefits captured by individuals other than college graduates, such as the community members who profit from spillovers from academic institutions. Further, these studies make a case for community support for local colleges and universities *independent* of the case that can be made at higher political levels. Among the expenditures and contributions that are captured by these analyses are the direct expenditures made by the institution and its students in

the locality. The most important of these are those that originate from outside the locality. Students and institutions receive funds from higher levels of government in the form of federal research grants and contracts, federal tuition aid, and fees from nonresident students that would otherwise not be part of the revenues of the local and state economy. Additional impacts are made through employee tax payments and local expenditures and monies generated from visitors to the institution and town. Faculty, staff, and students may collaborate with or lend expertise to businesses, government agencies, and nonprofit organizations—many are even setting up research centers and consulting services of their own. Significant proportions of all public university graduates stay in the area in which they attend college and become part of the area's human capital.²³ The higher earnings of college graduates mean greater demand for area products, more state and local tax revenue, and decreased pressure on the social services system.²⁴

To what extent do universities bring money into an area (or state) rather than take it out? It depends largely on schools' abilities to attract out-of-area (state) students that spend their money in the area (state), as well as federal research and financial aid dollars. This would bias support for large research universities that are magnets for nonresidents and that generate large amounts of external research support. The notion of EIS is easier to understand for community colleges that are funded out of local tax revenues and are located entirely within those tax boundaries. Thus, any noncommunity funds expended in the tax area, including any from state or federal governments, represent potential financial gains. In the case of state universities, all of the gains emanate from resources derived from out of state. The best estimates of the local economic contributions are for the community colleges—where estimation is least problematic. Leslie and Brinkman (1987) find that for each dollar in a college's operating budget, an additional \$1.50 to \$1.60 in local business volume is created. For each \$1 million (in 1985–86) spent, about 59 jobs were created. For the research universities, NASULGC (2003) finds an enormous return for its member institutions—\$5 for every \$1 spent and 1.6 extracampus jobs for every campus job. In addition, they find that every \$100 spent by their institutions is associated with another \$64 in employee spending, \$60 in student spending, and \$14 in visitor spending.

One must still regard these studies with some degree of hesitation. The counterfactual required to understand

the true economic impact of a university in its locality is difficult to simulate in analyses and certainly rarely happens in practice. The question that needs to be answered is, what would happen to income, employment, and education levels if a college instantly vanished from its community? The question could also be framed as, what would wages, employment, and education levels be in the community had the college never located here?

Contribution Studies

This approach overcomes the concern of omission of benefits from ROR analyses. Education undoubtedly enhances productivity by contributing to research and development efficiency and to the speed of innovation application, both of which may not be fully reflected in the earnings of an educated workforce. However, these contribution studies likely represent an upper bound on the net social benefits of higher education investments. Since the estimates of education's impact on economic activity derive from econometric residuals and not from "education" per se, the amount that higher education directly contributes to this activity is to some degree arbitrary. Leslie and Brinkman (1988) cite that education contributes approximately 15–20 percent of growth in the national economy, with higher education accounting for up to one-quarter of that growth. Another 20–40 percent of national income growth is ascribed to improvements in knowledge and its application.

Analytical and Practical Challenges to Implementation

Knowing how to measure net social benefits and affirming that they are substantial enough to merit public involvement are just the starting points for policy-makers. The answers to several questions are still in order. Are the social returns the same for all students and investments, or do they vary significantly by demographic characteristics and type of education? What form should public investments in higher education take? How large a public interest is required to achieve the desired social outcomes? Just how sensitive are students from different socioeconomic backgrounds to changes in college costs? Does student aid promote access? Choice? Retention? What impact do public education subsidies have on the income distribution of an area? Any public service essentially favors one group or another and the issue alone should be not whether particular groups benefit from a particular service, but also whether the tax system is progressive.

Student enrollments are responsive to price. Student price sensitivity declines as family wealth increases, college price increases, and selectivity improves—therefore, response is greatest among low-income students in public community colleges and least among the wealthiest students who enroll in private colleges. Hence, subsidies that reduce net prices should effectively increase enrollment levels for targeted students. While targeting student aid seems a logical approach, funding institutions with broad-based unrestricted appropriations will avoid the potential for targeting the wrong students—which may exacerbate the existing (and growing) inequalities in the United States.

Student financial aid is intended to promote access, school choice, and student retention. It is very probable that student and family income play a large role in shaping the initial choice set of colleges—the range of schools considered to be viable options. If disproportionately large numbers of low-income students have low-cost and less prestigious institutions as their first choices, then even if these students realize their goals, the goal of equal opportunity would not necessarily be reached. Further, Dale and Krueger (2002) find that while on average students who attended more selective colleges earned about the same as students of seemingly comparable ability who attended less selective schools, students from low-income families earned more if they attended selective colleges. Student aid monies have traditionally been used to equalize educational opportunity. Since public monies are increasingly being spent to reward academic achievement, the effect of merit aid should be considered carefully. Dynarski (2000) finds that Georgia's merit scholarship program has widened the gap in college attendance between blacks and whites and between those from low-income and high-income families.²⁵

Along with careful consideration of the impacts of student aid programs, policymakers would be wise to address the question of equitability under alternative financing schemes. How much of the taxes that support higher education are paid by the various income groups, and how much does each receive in indirect and direct tax subsidy through college enrollment? The progressive impact of need-based aid programs is obvious. However, the equitability of merit-aid programs is not as easily determined—largely due to the variation in how merit

programs are funded and the types of students the benefits are extended to. Rubenstein and Scafidi (2002) find that lower-income and nonwhite households tend to have higher purchases of lottery products in Georgia while receiving lower benefits, as compared to higher-income and white households. The benefits of the HOPE program, therefore, accrue disproportionately to higher-income and more educated households. Singell and Stone (2002) find that while merit-based aid increases enrollment probabilities for all students at a large public research university, financially able students respond disproportionately, even holding student ability constant. Alas, the shift to merit aid may exacerbate the trend toward greater income inequality in the United States, even among students of comparable ability.

Increases in spending, whether they are for institutional or student aid, must not add economic rents to those who would have gone to college anyway. The key point in analyzing the access question is that even if student enrollment responses to price changes are inelastic, we as economists usually see these as *ceteris paribus* reactions. However, higher-quality schools are typically more costly. If students have elastic responses with respect to school quality, they will attend a lower-quality school only if it is less costly. The implication is that if high-quality schools yield more externalities than lower-quality schools, then subsidies will induce a larger share of the student population to attend a higher-quality school, and would therefore produce a larger amount of externalities.

The results from studies on the equitability of the traditional method of public funding, institutional appropriations from state general fund budgets, are mixed. While Hansen and Weisbrod's (1969) study indicated a severe regressive redistribution in the case of California, many recent studies have refuted those results. Progressivity of the higher education finance system is primarily a function of tax progressivity, the public-private enrollment mix, and the "center of gravity" of the higher education system.²⁶ Finance systems are more progressive where state taxes are most progressive; where a large private sector attracts students from wealthier families, leaving proportionally more lower-income youth in the public sector; and when lower-income students are equally represented at the community colleges, four-year colleges, and graduate schools.

PUBLIC UNIVERSITY EXTENSION SERVICES

All universities engage in research and teaching, but the more than 100 public land-grant colleges and universities have a third critical mission—extension. The term derives from the fact that these institutions are expected to extend their resources to solve public needs through nonformal, noncredit programs. Extension programs help farmers grow crops, homeowners plan and maintain their homes, and children learn skills to become tomorrow's leaders. These programs are largely administered through thousands of county and regional extension offices, which bring land-grant expertise to almost every one of the more than 3,000 counties in the United States. Today, extension works in six major areas: 4-H youth development, agriculture, leadership development, natural resources, family and consumer sciences, and community and economic development. While the withdrawal of public support for higher education would certainly not return our higher education system to its aristocratic days of the mid-nineteenth century, it is unlikely that the private sector would step up and provide these extension functions in the absence of a mandate.

The perception that agricultural and cooperative extension funding has materially declined, however, is not borne out in the aggregate data. Between 1994 and 2003, the average share of institutional E&G expenditures allocated for public service remained constant at all of the public colleges and universities—hovering around 4 percent. However, at the PhD-granting public universities, where most of the extension activities are based, the share allocated to public service fell to 5.3 percent from a starting point of 6.1 percent in 1994 and a high of 6.6 percent in 2001. This happened during a time when overall state support for higher education fell substantially—the average (nominal) state appropriation fell by 4 percentage points in the 2003 and 2004 fiscal years (Illinois State's Grapevine System). The concern here is that public institutions that receive reduced appropriations may assign these cuts more heavily to extension programs, in order to preserve enrollments that generate tuition revenues.

The state experiment station system receives funding from state appropriations, federal formula funding, federal grants and contracts, cooperative agreements, private industry, commodity groups, product sales, and various nongovernmental organizations. Huffman and Evenson (2003) demonstrate that since 1980, real funding for experiment stations has increased by 17 percent.

However, the share coming from state appropriations fell by 5.5 percentage points to 50 percent of funding. The largest increases in funding are coming from industry, commodity groups, and foundations—making up 9 percent of sources in 1980 and 15 percent today. They also show that states place a high value on the services provided by extension. *Ceteris paribus*, more highly ranked extension programs receive larger shares of funds from state sources. They also construct a measure of “public agricultural capital spill-ins” and find that states in regions where the public agricultural research stock is larger receive more money from state appropriations.

Extension programs have been successful in large part due to their tradition of research-based outreach. Data on expenditures for research undertaken explicitly under the extension umbrella were not available at the time of this publication. Nonetheless, it is informative to understand how the sources of funding for research have changed universitywide in the past two decades. Between 1983 and 1998, the share of public university research and development expenditures derived from state and federal sources fell by 5¹/₂ percentage points to 62 percent, while the share derived from institutional sources increased by 3.2 percentage points (to 24.1 percent) and the share from private industry increased by 2.5 percentage points (to 7.3 percent).²⁷ While industry's share fell back down to 6 percent by 2002, institutional sources account for nearly a quarter of all research dollars. As public support for public colleges and universities has fallen, this increase in institutional funding is increasingly derived from private tuition and other sources.

There is a concern that an increased private presence in university research matters may result in a shift from basic to more applied research. The federal government has maintained a strong commitment to basic research, for it is supposed to look out for the long-term well-being of our society. Between 1972 and 1990, the share of federal obligations for research and development intended for basic research increased from 39 percent of federal funds to 52 percent of federal funds. Federal commitment to basic research has remained steady since. This type of data is not readily available for nonfederal funding sources. However, during the time when federal and state support for higher education waned, the share of research expenditures at public colleges and universities allocated to the traditional physical sciences fell from 22 percent in 1983 to 19 percent in 2002, while the share devoted to life sciences and engineering increased by 3 percentage points to 73 percent.

Though it is likely that a strict and direct accounting of research investments would indicate that applied research yields the largest returns, the benefits of basic research, like many social benefits, are not easily measurable or immediately recognizable.²⁸

There is a more serious concern that an increased private presence may generate conflicts of interest that compromise the research that is being done. McDowell (2001) believes that the cooperative extension service in many states and counties has been captured and held hostage by agricultural interests. Much has been written about the significant relationship between Berkeley and Novartis, and the concern is that scholarly objectivity requires detachment from society and private interests.

I am currently in the midst of conducting a survey of the land-grant colleges and universities to understand whether funding for extension programs is stronger in states that appropriate funds directly to them as opposed to indirectly through appropriations to their sponsoring universities. In addition, I have asked questions about whether budget difficulties have forced extension programs to cut staff and faculty, close offices, reduce services, and/or restructure their program fee structures—and whether these changes are permanent if funding was to be restored. An early review of the survey responses (institutions from 10 states have responded thus far) indicates that extension programs in states where funding comes from a direct appropriation in the state budget (that is, a line item) or a formula based on overall state appropriations to the university systems (such as in Vermont, Florida, and Alabama) have enjoyed far greater support than programs in states where funding is determined by flagship campus chancellors and other university sources (such as Hawaii, Maine, and North Carolina). However, for all survey responses received thus far, significant reductions to faculty, staff, and program offerings have occurred in extension offices since the early 1990s. In those institutions that received line-item support, cuts tended to be temporary or smaller in magnitude than in states where university centers have more control over the allocations.

COMPLEMENTARITIES BETWEEN HIGHER EDUCATION AND K–12 EDUCATION

A consensus has not been reached regarding the impact of resources on student outcomes in primary and secondary education. We do know, however that

student learning is greater when they have bright teachers (see, for example, Rockoff 2004; Schacter and Thum 2004; Hanushek, Kain, and Rivkin 1998; Ehrenberg and Brewer 1995). To the extent that positive externalities result from higher education investments, they are likely to be greatest for investments in teaching. A recent paper by Randall Reback (2004) demonstrates that selective (private) postsecondary institutions are far less likely to offer teacher certification programs, and those that do offer them are less likely to allow students to complete them within their four undergraduate years. He estimates models that suggest that the addition of teacher certification programs that may be completed within four undergraduate years could increase rates of entry into public school teaching by at least 50 percent among recent graduates of selective colleges.

To the extent that current elementary and secondary school teacher salaries are not large enough to attract the best and brightest potential teachers, higher education policies can be enacted to encourage college students to choose the teaching vocation. Programs such as the privately funded Bonner Scholars,²⁹ institutional, state, and federal loan forgiveness programs, or university policies to discount tuition for students who choose an education major are all potentially powerful instruments to shift the quality teacher supply curve to the right. In addition, implementing and funding these programs at the higher education level may be less costly than an across-the-board national teacher recruitment initiative at the elementary and secondary school district level.

The foregoing discussion is particularly important because damage to the student achievement and development pipeline near its source will have a cascading negative impact throughout the rest of the line. The gaps between high school dropout and high school graduate earnings are wide, and that between college graduates and high school graduates even wider. These gaps are increasing.³⁰ There is a projected severe shortage of skilled workers in America, and our workers will be thoroughly unprepared to adapt to the rapidly changing workforce requirements of the twenty-first century's knowledge-based economy if gaps between other developed nations and U.S. educational achievements are allowed to develop and widen.³¹ In 1999, the United States ranked nineteenth and eighteenth in eighth-grade math and science achievement, respectively, behind countries like Bulgaria, Malaysia, Slovenia, and South Korea.³² No longer the world leader in higher educational attainment, the United States trails England,

New Zealand, Australia, the Netherlands, and Norway in the share of its eligible population with bachelor's degrees.³³ Therefore, our institutions of higher education play an increasingly important role in the training of quality teachers, who are essential in not only getting their students to go to college, but for preparing them to do well once they arrive.

NONRESIDENT ENROLLMENTS

Between 1979 and 1998, the weighted average proportion of first-time, full-time freshmen students who are nonresidents increased from 16 percent to 18.5 percent at the public flagships.³⁴ When nonresidents are used to fill seats at institutions with excess capacity, the marginal net benefits accrued by receiving states are likely to be larger for each nonresident enrollee than for the marginal in-state student (that is, the last in-state student enrolled). This is largely due to the fact that nonresident tuition is substantially larger than corresponding in-state rates.³⁵ Nonresident students and their families also spend money on housing, travel, other consumer goods and bring federal financial aid with them—adding revenues to the state that would not exist in their absence.

In the event that states have reached enrollment capacities (indeed, many in the Northeast plus Washington and California already have), the benefits from enrolling nonresidents are less clear. If nonresidents displace otherwise qualified resident students, then unless they have a much higher propensity to remain in the state upon graduation, these short-term financial gains may correspond with long-term social losses. Empirical evidence by Groen (2004) indicates that this might be the case. He finds that attending college in a state has only a modest impact on the probability that a student will work in the state upon graduation. However, Rizzo and Ehrenberg (2004) find that nonresident enrollments are not sensitive to the tuition charged by institutions, nor are institutions raising nonresident tuition rates to meet funding shortfalls. They do find evidence that the increasing reliance on nonresident enrollments by the public flagships represents an explicit attempt to augment student quality when schools have already reached enrollment capacity.

COMMUNITY COLLEGES

Given the general consensus by education researchers that the returns to schooling are larger for investments at more elementary levels of schooling, it is natural to ask how the private and public returns to investments in two-year (community) colleges compare to those at their four-year counterparts. If student demand follows the highest returns, then the fact that the share of U.S. full-time equivalent enrollments in community colleges increased from 39 percent to 43 percent between 1980 and 2001 suggests that the returns to community colleges are increasing relative to four-year colleges.³⁶ If this is true, the higher returns are likely to be due to the lower costs of operating and attending community colleges and/or their comparative advantage in being able to adjust rapidly to the ever changing needs of the workforce. However, I have been unable to find any empirical work that directly asks the question of what the social returns are to investments in two-year colleges. The empirical evidence that does exist implicitly addresses this question by evaluating the transfer function of two-year colleges, by asking how two-year colleges meet the needs of local communities or more generally by evaluating the economic impact of two-year colleges in their local areas.

With respect to vocational education and job training, Krueger and Rouse (1998) find only small, positive impacts of community college workplace training programs in subsequent earnings at a manufacturing company. They find no impact for employees of a service company. More recently however, Gill and Leigh (2003) find that community college graduates of terminal training programs enjoy returns on their investments equivalent to noncompleters at traditional four-year colleges.

Massive layoffs by Kodak, IBM, and many other companies have emboldened those who believe our community colleges are vital retraining grounds for the thousands of workers who have lost (or will) lose their jobs. In fact, one of President Bush's major reelection campaign platforms is increasing support for community colleges—largely with an eye toward retraining displaced workers. Whether job losses are due to technical change in product and labor markets (for instance, Kodak's sluggishness in adapting to digital photography) or the outsourcing of unskilled or simple-skilled

labor jobs (such as computer call center jobs), it is clear that displaced workers need to enhance their productivity and expand their skill sets. Leigh and Gill (1997) have found evidence that suggests the president's proposals have some merit. For both degree-seeking and non-degree-seeking adult workers in transition, access to long-term education and training programs at community colleges generates returns that are positive and essentially the same size as they are for continuing high school graduates. Of particular interest is that among males in nondegree programs, returning adults enjoy an incremental earnings effect of 8 percent to 10 percent above that received by continuing students.

Two-year colleges are widely believed to be a "democratizing" force in higher education. That is, they are believed to expand educational access and promote equality of opportunity. Empirical evidence supports these claims. Cecilia Rouse (1995) finds that community colleges increase total years of schooling by attracting students who might not have otherwise attended college. However, since they also attract some students who might otherwise have attended a four-year college, they do not likely increase the probability of students' obtaining a bachelor's degree.³⁷ An important outcome of democratization is demonstrated by Gill and Leigh (2000). They were able to attribute approximately 10 percent of the closing between the male-female wage gap in the early 1990s to the relative increase in women's enrollment in two-year colleges. If their findings are externally valid, then there is reason to be optimistic that measures can be taken to encourage the closing of the white-nonwhite earnings gap as well. In 2004, they studied how community colleges affect the educational aspirations of students and found that for students from all family, racial, and ethnic backgrounds, each year of attendance at a community college substantially increases the educational aspirations of students, as measured by changes in response to the National Longitudinal Survey of Youth (1979) question asking about the highest grade of schooling they would like to complete.

Finally, since it costs a state much less to educate a community college student than a four-year college student, evaluating the efficiency of the traditional transfer function of two-year colleges is of paramount importance, particularly given the microscope under which states' higher education expenditures are increasingly viewed. Rouse (1998) asserts that community colleges provide a potentially economically efficient way to increase access to higher education, as well as increase

overall educational attainment by a state's residents by expanding access to a larger degree than it suppresses ultimate educational attainment. Per the transfer function, Hilmer (1997) demonstrates that students ultimately choose to attend higher-quality four-year colleges if they first attend a community college than if they come straight from high school. Of particular importance is his finding that these effects are largest for students from poor families, low achievers in high school, and from students with low measured ability. In other words, community colleges may play a vital role in overcoming inadequacies in students' college preparation that may not have resulted from any behavior on their part. Further, Leigh and Gill (2003) show that for individuals who initially expressed a desire to obtain a bachelor's degree, attending a community college before transferring to a four-year college increases average educational attainment by one-half to one full year.

There is a wealth of research still waiting to be done regarding community colleges and our larger social concerns. How well do community colleges meet the needs of local communities, and how do they provide trained workers for the local area? Are two-year colleges taking over some of the traditional functions of state extension systems by devising courses and programs in conjunction with local businesses? Are two-year colleges better able to provide training in the areas that are crucial for workers to succeed over time, and what are these areas? And finally, do states with more developed community college systems have (*ceteris paribus*) better employment, higher wages, more advanced firms, etc.? While the foregoing microeconomic research indicates that there are indeed positive spillovers emanating from community college investments, a more complete treatment of the above questions will help direct public policy in the right direction.

HIGHER EDUCATION AND THE WORKFORCE

There are two productivity-related arguments for the public support of higher education. The first is that a more educated workforce leads to higher incomes and faster economic growth (and ultimately a larger tax base).³⁸ The second is that investments in scientific research, and perhaps in the knowledge sector in general, exhibit increasing returns. That the outcomes of successful research include higher employment growth and/or the creation of new firms in an area makes this second argument significant. Together, these arguments suggest a role for government policy to help ensure that

investment in complementary goods takes place. For example, an area might need to change its industry mix to secure the gains from a more highly educated workforce. Similarly, a more highly educated workforce may be stifled if the right industries and jobs are not created in that area.

A biotech firm is highly unlikely to locate in my hometown of Danville, Kentucky, as there are very few PhD biologists and researchers in this area. At the same time, newly minted biology PhDs and experienced researchers are unlikely to relocate to Danville (ignoring the fact that it is an extremely desirable place to live) because there are no firms here for them to advance their crafts at. Though the biotech firm may be very profitable if workers were here and PhD biologists would prefer researching in Danville to a larger city, the firm is unlikely to open and PhDs are unlikely to locate here unless there is an instrument to coordinate both of these investments, as well as to ensure investments are made in any other sector that workers and biotech firms may rely on. These could include things as simple as encouraging entrepreneurs to open new restaurants on Main Street (who themselves need to be convinced that the new business and workers will be coming) to more complicated investments in (or commitments to invest in) necessary infrastructure or the changing of zoning ordinances, assignment of property rights and creation of new laws. You can easily see the vital role that transparent government processes and efficient collection and dissemination of news and information play in this process.

Is increasing productivity really as important as we claim it is? Paying close attention to the media, candidates, and pundits (MCP) during the 2004 election cycle would lead one to believe that it is not so. Despite productivity gains between 1.5 percent and 2.5 percent in the business sector and between 5 percent and 10 percent in various manufacturing sectors (a fair portion of which has been due to decreases in hours worked with no corresponding fall in output), real wages in all sectors actually fell during the second quarter of 2004.³⁹ Further, job growth has been slow to respond to these productivity increases and has never really recovered from the slump in 2001. Economic theory suggests that real wages and employment should rise with worker productivity. So what is the problem? The MCP would have you believe that outsourcing and our inability to compete with low-wage international firms is the culprit. However, data recently released by the Government

Accountability Office and the Bureau of Labor Statistics would lead us to a different conclusion. Of the 1.5 million jobs lost in 2003 to mass layoffs, fewer than 15,000 were lost due to relocation of these jobs overseas. While it is risky to make sweeping generalizations based on one firm's experiences, the release of 15,000 jobs at Kodak this past year indicates that technical changes and advances in the knowledge sector are responsible for the lion's share of the problem—they were simply unprepared for the explosion in popularity of digital technologies. In other words, at the same time that labor demand should be expanding due to increases in productivity, it is likely contracting for those same jobs due to changing technologies and movements into different business sectors.

Where does higher education fit in? The supply curve for skilled workers is likely to be steeply sloped in the short run. Therefore, even when firms are expanding into emerging industries and applying new technologies, wages for existing skilled workers are likely to increase substantially with little corresponding increase in short-run employment. The expansion of income inequality in the United States suggests this may in fact be the case.⁴⁰ Under these rapidly changing market conditions, employment will only be increased when the supply of highly educated workers increases. On the whole, the empirical evidence (cited earlier in this paper) points to there being strong positive spillovers from higher education to the workforce and suggests that there may be tools for policymakers to employ in order to jump-start or maintain economic growth in their areas.

Several recent papers examine the relationship between the production and retention of human capital in an area. The evidence indicates that if spillovers are likely to be captured at all, they would be due to investments made at the graduate and professional levels as opposed to investments at the undergraduate level. Sumell, Stephan, and Adams (2004) study the geographic placement of newly minted PhDs in industry by estimating the probability that science and engineering PhDs will remain local or stay in the state after graduation. While they do find that state and local areas capture knowledge from newly minted PhDs headed to industry, the rate at which they do so is small. Among the important correlates of retention are marital status, age, level of debt, previous work experience, local technological infrastructure, and visa status. A somewhat sobering finding

is that retention is greatest in the areas where universities are not new but have a long history of producing scientists and engineers—again highlighting the need for coordinated investments if gains to education investments are to be realized. Zucker, Darby, and Brewer's (1998) finding that geographic differences in the number of key researchers located there is a major determinant of where and when new biotech firms locate illustrates this point.

However, research using older data implies that there may be some direct benefits to increasing investments in higher education institutions directly. Beeson and Montgomery (1993), using data between 1975 and 1980, find that both overall employment growth rates and the share of workers that are scientists and engineers in the 218 largest standard metropolitan statistical areas were positively correlated with the increase in research and development funding at local colleges and universities in those areas. Further, the quality of the science and engineering programs (as measured by how many are nationally ranked) is positively correlated with these outcomes as well. Finally, Hedrick, Henson, and Mack (1990) find that employment levels in local retail sectors, service sectors, and finance, insurance, and real estate sectors are larger when college enrollments and expenditures are larger. Unfortunately, these results were for 1978 and 1985. It would be worthwhile to replicate these studies using more recent data.

There is little question that America's persistent growth in per capita income is due in large part to continued advances in science and technology and associated improvements in worker productivity. That the existing evidence does not overwhelmingly suggest that local and state public support for higher education is the driving force for accumulating human capital in an area does not mean it will not be important in the future. Were one to glance at the education headlines in the mid-1980s, there would be a striking disconnect between America's economy as we know it in 2004 and what it was predicted to be at the time. Enormous shortages of scientists and engineers were projected largely because of what the American student pipeline looked like. Fewer and fewer American students were going into PhD study in the sciences at the same time as the demands of the knowledge economy required more highly trained scientists and engineers, not less. However, the shortage of skilled scientists and engineers has never materialized, largely due to the influx of top international students into the United States to substitute for the shortage of American scientists. Three

recent trends portend a more serious problem in the coming years. First, top American talent is increasingly choosing the professional school ranks and eschewing careers in science and engineering (Zumeta and Raveling 2003). Second, the quality of international graduate programs is improving rapidly and international students are now choosing to study in Australia and Europe at far greater rates than in recent years. Finally, the impact of 9/11 on the ease of obtaining a student visa in the United States has surely restricted the number of talented foreign graduate students gaining entry into American universities.⁴¹ In fact, the number of foreign students studying in the United States declined in the 2003 academic year by 2.4 percent—the first such decline since 1972.⁴²

SUPPORT FOR UNDERGRADUATE EDUCATION VERSUS BIG SCIENCE AND TECHNOLOGY TRANSFER

Little is known about how the distribution of funding *within any* particular institution of higher education affects either individual private returns or any public spillovers that may emanate from the educational activities of our colleges and universities. To the extent that undergraduate instruction and faculty research activities exhibit complementarities, the returns to either can be augmented by the level and quality of investments in the other.⁴³

At all public colleges and universities between 1984 and 2003 the share of educational and general (E&G) expenditures allocated to research increased by 20 percent.⁴⁴ The largest percentage increases have occurred at the master's and baccalaureate level institutions, each nearly doubling their commitments to research relative to undergraduate instruction over this 20-year period.⁴⁵ Similar trends can be observed in the enrollment composition at these institutions—an increasing share of students are enrolled at the graduate and professional levels than at the traditional undergraduate levels.⁴⁶ Whether the causes of these changes are aggressive prestige competition or rent seeking in the form of attracting government dollars, there is a concern that the push toward the big science model of higher education has come at the expense of, not as a supplement to, undergraduate education. In addition to the direct crowding out of undergraduate priorities, this “mission creep” should be of concern because research activities and postbaccalaureate-level education are much more expensive than undergraduate instruction, and may be

partially responsible for the increasing costs and tuition levels at even the most affordable public institutions.

Anecdotal evidence on the negative impacts of such endeavors is persuasive. Less than a decade ago, freshman calculus classes at the University of Kentucky were limited to 25–30 students per class. In the fall of 2004, 370 freshmen crammed into a single section—a majority of those coming from high schools throughout the commonwealth with total enrollments resembling that magnitude. University president Lee Todd, when asked about this “problem” replied, “the University of Kentucky needs to continue to expand in order to join the ranks of the elite research universities.”⁴⁷ Survey research suggests that aspiring to join these ranks is an expensive proposition.

In 2002, the Cornell Higher Education Research Institute (CHERI) surveyed vice presidents for research, deans of schools of science and engineering, and various science and engineering department chairs about the start-up costs that research institutions incur for new faculty at both the junior and senior levels and the laboratory space allocation rules that the institutions follow.⁴⁸ Among the findings were that colleges spent, on average, \$1.5 million for start-up costs to attract new senior level faculty, with a maximum reported amount spent of \$7 million. Across all public institutions, the average start-up costs needed to hire a new assistant professor in their most expensive department was \$265,112, while hiring a new senior-level researcher would cost over \$550,000. When asked where their colleges find the funds for start-up costs, the deans indicated that the largest sources of funds were the general budgets of the college and university, with 45 percent of start-up cost funds coming from these sources. The survey found that public institutions are almost twice as likely as private institutions to generate start-up costs from keeping faculty positions vacant. Hence, start-up costs appear to adversely influence the teaching program of public universities more than they do the teaching program of private universities.

Empirical evidence for the public and private PhD-granting institutions suggests that the negative impacts are less striking. Ehrenberg and Rizzo (2004) find that student–faculty ratios increase the fastest at universities whose research per faculty increases the fastest. They also find that institutions increase tuition as the composition of their enrollments weigh more heavily toward

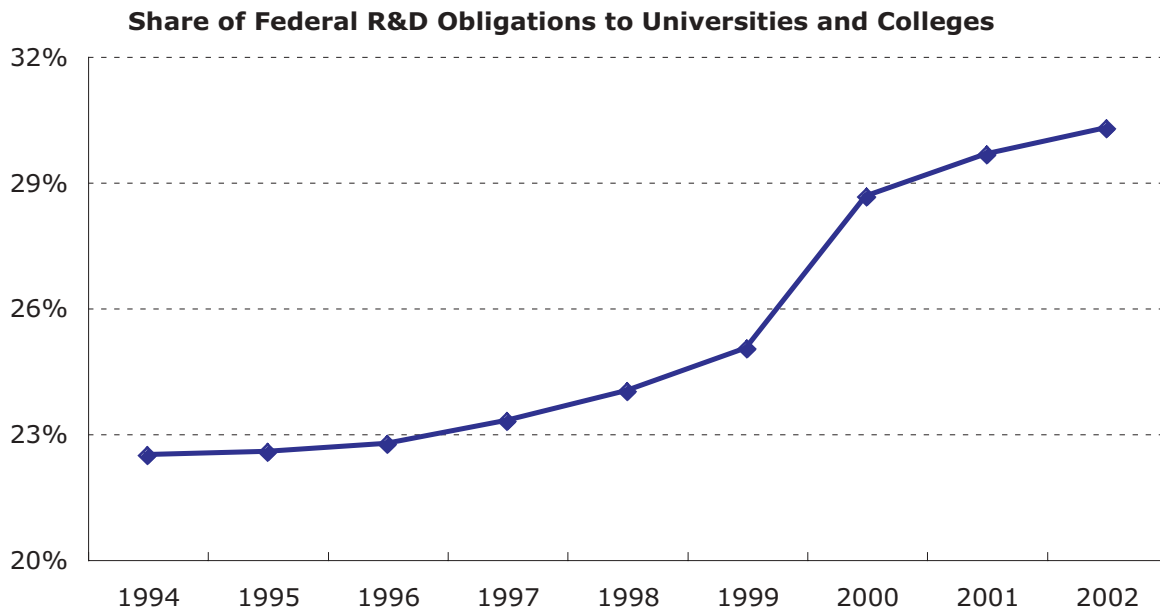
graduate students. Though significant, they demonstrate that the magnitude of the estimated effects of the increasing costs of science on easily measurable outcomes were quite small.

The public’s stake in the research activities of our colleges and universities has been increasing just as their stake in undergraduate education has declined. Figure 1 shows that between 1994 and 2002, of all of the federal monies committed to research and development, the share going to higher education increased dramatically and monotonically by over 8 percentage points. To the extent that investments in research and development exhibit increasing returns to scale, it is very clear why research and development efforts in the United States enjoy broad public support.⁴⁹ It is less apparent why this support is increasingly being directed toward our colleges and universities. I suspect that a major reason for this is the potential economies that can be achieved by having teaching and research activities performed in a single location—economies that can be captured by both institutions and the public at large.⁵⁰

A common misconception is that though the costs of research are substantial, colleges and universities receive windfall after windfall of revenues from increasing commercialization of their faculty members’ research. The Association of University Technology Managers (AUTM) reported in their fiscal year 2002 survey of their members that American colleges and universities received \$959 million in net licensing income and other forms of royalties relating to patents that year. While this figure seems large, it was concentrated in a few large “winners”; 90 percent of the universities in their sample received less than \$2 million and almost half received less than \$1 million. This is suggestive that the proliferation of “research” at nonresearch universities is not cost-effective.

In analyzing the 2000 AUTM survey results, Ehrenberg and Rizzo (2004) calculate that though the mean net licensing income in the sample was \$6,554,200, the median was only \$343,952. Fifty-one of the 138 institutions actually lost income that year on their commercialization activities and the median net licensing income for the 87 that made money was \$1,309,828. When one remembers that the licensing income received by universities is split between them and the faculty members whose patents have generated the income, it seems clear that commercialization of research has yet to provide most universities with large amounts of net income to support the universities’ scientific research activities.

Figure 1



Source: Digest of Education Statistics 2003, Table 372.

Critics of technology transfer at universities and colleges, however, may be quieted when considering two facts. First, there is little evidence to suggest that professors and students are more frequently engaging in research activities that have commercial potential. The share of federal research funding at universities and colleges intended for applied research fell from a high of 64 percent in 1976 to 52 percent in 2003. An official at the Stanford Office of Technology Licensing echoes this evidence. He said that “Universities are not shifting to become SRI (International) or Battelle (dedicated research institutes), because there are places like SRI and Battelle to do that kind of work. Work done at a university by a graduate student using university resources has to be original basic research.”⁵¹ Second, it is the rare case that university inventions find their way into the commercial marketplace. The Stanford official continued, “It’s the nature of this business that a very few discoveries generate any kind of meaningful income... venture capitalists hope 1 in 10 of their investments produce big income. At universities, it’s more like 1 in 100.” Given these circumstances, it seems unlikely that universities are in the research business solely to make money. If this were not the case, we would expect to observe the number of ventures universities taking a chance on decrease dramatically.

That universities continue to invest heavily in research (and that government continues to heavily subsidize these activities) suggests that the benefits of these activities are accruing more broadly to society. Jaffe et al. (1993) compare the geographic location of patent citations with where the cited patents were produced as evidence of the extent to which knowledge spillovers are geographically localized. They find that citations to domestic patents are more likely to be domestic and more likely to come from the same state and SMSA as the cited patents, compared with a “control frequency” reflecting the preexisting concentration of related-research activity. The public is also likely to benefit from the proliferation of industry-funded interdisciplinary research centers and other new business start-ups that result from university research activities.

Since 1980, 4,320 new companies have been formed based on a license from an academic institution, including 450 established in 2002. Of these start-ups, 2,741 were still operating as of the end of 2002. Of the new companies, 83.1 percent were located in the state of the academic institution where the technology was created (AUTM 2003). Though licensing revenues are small, universities have been able to maintain an equity interest in over two-thirds of these start-up companies. Taxpayers might expect a large return on university investments in

research as well given the magnitude of their stake. In the 2002 academic year, total spending on research and development at U.S. academic institutions was \$36.3 billion (with \$24.8 billion at the publics and \$11.5 billion at the privates). Of this total, \$24.3 billion came from government sources (\$21.8 billion federal, \$2.5 billion from states and localities).⁵²

Recent macroeconomic evidence suggests that universities may in fact be capturing a surprisingly small share of the immediate external benefits from their research and development activities. In his book *The Mystery of Economic Growth*, Elhanan Helpman shows that research and development capital stocks in 21 industrial countries have a sizeable impact both on the total factor productivities of each of these countries, but also a sizeable impact on the total factor productivity of developing nations. It is, however, an open question whether the degree of exchange of ideas and transfer of technologies across countries would be greater or diminished if more of the research and development was undertaken outside of academia. American taxpayers should also be interested in a recent paper by William Nordhaus (2004). He examines the social returns from technological advances in the nonfarm business economy over the 1948–2001 period and finds that most of the gains from technical change are passed on to consumers rather than captured by producers in the form of “Schumpeterian profits” (2.2 percent to producers, 97.8 percent of value created to consumers).⁵³ That entrepreneurs seem to be able to capture such a miniscule fraction of the gains to their hard work, but that technical innovation and new business generation continue at a fever pace in the United States, is a testament to the incentive effects of innovation and may also have us reduce our concerns about university efforts to expropriate the benefits from their research activities.

CONCLUSION

In this paper, I examine the theoretical justifications for public support for higher education. Broadly stated, the public may have an interest in subsidizing higher education if the presence of substantial *net* positive spillovers, imperfect credit markets, or asymmetric information result in private investments in schooling that are below the socially optimal levels. Even in the presence of such market imperfections, public monies should (theoretically) only be directed toward higher education when the marginal expenditure of taxpayer money on higher education produces a net social return

that is at least as high as the marginal expenditure on any other budget item.

Though difficult to measure, the growing body of research using rate of return techniques, economic impact studies, and contribution studies suggests that the public, and hence social, returns to investments in higher education are positive and sizable. I also discuss several factors that I feel are particularly important to consider when policymakers are deciding how to fund higher education. These include the role of public university extension services, the relationship between primary, secondary, and tertiary levels of schooling, the impact of nonresident enrollments, the importance of community colleges, the relationship between higher education, and the workforce and finally the role that universities play in research and development.

Improving the productivity of our higher education system is essential for the United States if it wants to reign in its nagging, persistent increases in income inequality and to also calm the (misguided) hysteria over the real impacts of outsourcing on our labor market. While the number of jobs lost to outsourcing in the United States is sizable at 300,000 per year, this number represents only 2 percent of the 15,000,000 lost per year overall.⁵⁴ Some other fundamental aspect of the economy must be responsible for this difference in 14.7 million jobs. Increasing productivity is not the problem, but rather the answer. Between 1960 and 2003 real adjusted output per worker in the nonfarm business sector increased by 119 percent. At the same time employment expanded by 115 percent with total compensation increasing by over a factor of 20. In the durable goods manufacturing sector, a productivity increase of 99 percent between 1987 and 2003 was matched with a 65 percent increase in total compensation. However, employment has fallen in this sector by 16.6 percent. On the whole however, while the United States increased its reliance on nominal imports to 14 percent of GDP from 4 percent of GDP between 1960–2003, unemployment has remained low (currently 5.5 percent) and nonfarm, private-sector employment has expanded by a net 60 million jobs.⁵⁵ I assert that the majority of this job creation and destruction has been a result of a rapid expansion and implementation of technical improvements and the corresponding employment of a significantly more highly trained labor force.

The relevant policy issue is captured by the question of whether it is society or the individual that should pay

more. If societies should pay more, then state support for institutions should increase so that tuition levels need not rise. Ultimately, lawmakers and policymakers must decide (1) how much to spend on higher education; (2) where to spend it (two- or four-year, public or private); and (3) in what form to spend it (institutional or student aid). While the information I presented in this paper is sure to be helpful in seeking answers to these questions, a number of difficult questions remain unanswered. States should want to know who in the student quality–family background plane is not currently being served. Knowing this information will help guide policymakers in deciding between trying to attract and retain the best and brightest students, or trying to expand access to economically disadvantaged but highly qualified students. This needs to be augmented with information about why six-year graduation rates are dreadfully low (less than half of entering freshmen in the United States end up graduating in six years) and why these measures are lowest for students from low-income and certain minority backgrounds—particularly if societal goals include creating equality of opportunity for all citizens.⁵⁶

Policy Recommendations and Considerations

Cost Control

I strongly believe that it would be irresponsible to make recommendations without first considering the current cost crisis in higher education. Conventional wisdom posits that spending more on higher education will enable more low-income students to obtain a college education. Opponents of public involvement in higher education argue that institutions divert resources to programs that benefit high-income students or no students at all. They believe that spending increases merely raise the “rents” so aggressively sought by faculty and administrators. Staffing statistics lend support to these objections. Salaries and staff sizes have gone up much more than have the number of students graduating college. Further, colleges and universities are competing for students by offering more attractive campus lifestyle options including higher scale dining and recreational facilities. Since most students that attend college are from the upper half of the income distribution, when states increase spending on institutional and student aid and when federal aid to colleges and universities increases, the “good life” of the relatively wealthy families is being supported in part by tax revenues from less affluent families.

For a typical private industry, company performance and ultimately price control is regulated by the threat of

free entry and exit. This is not the case in higher education. In perfectly fluid markets, firms would respond to increasing input costs by becoming more productive. Bob Martin (forthcoming) demonstrates that just the opposite has happened in higher education. In his book he concludes,

The prices paid for inputs by higher education did not rise much faster, if at all, than other price indices such as the GDP implicit price deflator. Hence, the input prices do not explain the rise in net price charged to students that is the basis for so much public criticism of higher education. Since costs are the sum of all input prices times the quantity of those inputs used to produce a given output level, the rapid growth in cost per student must be explained by a decline in productivity (students per unit of input). That’s exactly what the staffing ratio data suggests—smaller numbers of students per faculty, staff, and administrators.

Ehrenberg (2004) shows that faculty salary increases for all full-time faculty members at American colleges and universities have outpaced inflation by less than 1 percent per year over the past 30 years. There has been much written about why measured productivity in higher education has lagged and it needs to be even better understood. Have the cost increases been a result of an increase in the (unmeasurable?) quality of higher education? Have they been a result of spending on the aesthetic aspects of higher education (such as better food, performing arts, and health facilities)?⁵⁷ An influx of money into the system as it stands may only serve to exacerbate the negative outcomes associated with aggressive quality competition and rent-seeking behavior.

Spending Smoothing

Nothing damages prospects for growth and continued research and development more than uncertainty. As far as public colleges and universities are concerned, there may be systematic underinvestments in campus infrastructure and long-term projects because of the high volatility of state appropriations. In order for institutions to “smooth spending,” states should provide colleges and universities with multiyear plans for state support. More important, states should not penalize institutions that are successful at raising private monies during lean budget times with future appropriations cuts. Rizzo (2004) has found evidence that states aggressively reduce future funding to institutions that raise large amounts of private gift revenues.

Alternative Methods of Public Support

States can do a better job at targeting aid dollars toward students and universities. If taxpayers are uneasy about broad-based appropriations to schools and merit-aid programs to students, then dollars can be directed toward loan forgiveness and other economic incentives for graduates of both public and private universities to fill the ranks of occupations in the areas where pay alone is not enough of an incentive to pursue it (for example, elementary and secondary school teaching, social work, public-sector law, etc.).⁵⁸ To help control costs some states are implementing performance-based budgeting models (for instance, Washington) and targeting investments to specific programs that states find important. One suggestion that is gaining momentum in statehouses across the nation is for states to promote competitive bidding by institutions for funding particular schools and programs.

A measure that may promote cost control as well as social equity would be for states to push institutions of higher education, public and private alike, to move to an average cost, rather than marginal cost, pricing scheme. It is likely that higher education operates in the region of production where there are increasing returns to scale—and hence average costs exceed marginal costs through a large range in production levels. In an effort to enroll more (and sometimes higher-quality) students, institutions have discounted tuition aggressively to the point where marginal revenues equal marginal costs. This policy has led to a significant weakening of institutions' financial positions. Coupling an average cost-pricing scheme with perfect price discrimination would increase net revenues and improve the progressivity of the higher education funding system by forcing all those able to afford it, to pay the full cost of attending college, while those unable to pay would receive grants from the state to cover these expenses. In addition, such a financing strategy would provide a stronger incentive to reign in costs than the current system where over 80 percent of the funds for public higher education come from third-party sources.⁵⁹

Discount Rates and Political Support

Efforts need to be made to make politicians and taxpayers alike more accountable to our future generations. Herein lies the rub in today's political climate—the returns to alternative investments of public monies are immediately recognized and more concentrated. The expenditures and costs of alternative investments are better understood but less publicized, very easily

targeted, and more identifiable. For example, most taxpayers could not tell you the cost of the most recent prison that was built in their state, although it would be easy for them to describe what these tax dollars were spent on, who would be benefiting, and that the outcomes would be immediately and easily recognizable. Prisons can be built in a matter of months; the benefits can be highlighted in the newspaper as we can see exactly which bad people are being taken off the streets, so people in higher crime areas receive a perceived strong benefit. However, ask any taxpayer about the cost of higher education and they will at the very least say something about high tuitions and expanding class sizes. Investments in higher education may take years before benefits are realized and people without their own children in the system may not perceive that any benefits would spill over to them. Therefore, though the net social benefits to a marginal higher education investment may be much larger than one in corrections, factors leading to suboptimally high discount rates may prevent the proper investments from ever taking place. Granted, states do have a system of governing and coordinating boards in place to look after the long-term interests of our public colleges and universities. However, for those that are politically appointed, allegiances are likely to align with those of the governor and not necessarily in the long-term interests of the state. For those that are elected, it is unlikely that voters have enough information beyond party affiliation with which to make choices over. Further, these positions are often unpaid, which may significantly reduce the pool of qualified people running for the position.

Transparency and Accountability

The public's expectations of institutions need to be made clear—which can largely be achieved by policymakers making clear what is on a state's agenda. For instance, if the goal of a state is to enhance economic development, research universities should be held accountable for the level and quality of research they generate, the new business they generate and the share of funds used for research externally sourced. It would make little sense to apply this standard to institutions with different missions. Master's-level universities can be evaluated by how well they prepare and place students in local skill-based industries. Finally, community colleges should be evaluated both on how well they expand access to underserved areas of the state and how successful they are at responding to the training and other needs of local businesses. Institutions on their part have a responsibility to make it clear to taxpayers how well

their money is being spent. Rather than relying on dramatic news stories of faculty and administrators behaving badly to form their impressions, the general public should be able to learn about all of the good things their local college or university is doing.

Coordination

Even if investments in higher education produce positive spillovers, simply increasing funding for higher education will not insure that these gains will be realized. Policymakers need to understand that the economic health of a state is a result of a multiplicity of factors and it will take a great deal of coordination for their jurisdiction to be able to enjoy employment increases, wage increases, and the other public benefits associated with having a highly educated workforce. This coordination should not only be between the different education sectors (for example, the benefits of expanding access to higher education will be severely compromised without a coordinated effort at the primary and secondary school level to improve student preparation), but also within the higher education sector and across different

industries and social institutions. For instance, if we believe more highly educated people would produce more considerate and better-qualified politicians, simply increasing the number of educated citizens will not ensure that our political system would improve. To ensure such an outcome, significant efforts need to be made to reform the political system today so that highly educated citizens feel like they can truly have an impact, or be able to reform the system themselves. Otherwise, the incentives to enter into public service will be greatly diminished and the potential gains to the higher education investment would never be realized.

ACKNOWLEDGMENTS

I am grateful to the Andrew W. Mellon Foundation and the Atlantic Philanthropies (USA) for their support of CHERI. Special thanks to Professor Ronald G. Ehrenberg, director of CHERI. The views expressed herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland. All errors are my own.

ENDNOTES

¹See *Digest of Education Statistics* 2002, table 9.

²There are two ways the public can be involved in higher education. First, higher education can be publicly *provided* and *controlled*. The second, which is not necessarily mutually exclusive of the first, is that higher education can be publicly *funded*. In this paper, our reference to *public interest* references the latter. Elementary and secondary education is an arena where the relevance of public control and provision is a more pressing concern.

³For example, between 1977 and 2001, the share of state discretionary funds allocated to higher education fell by 3 percentage points to just 6 percent of total state general fund budgets. Higher education expenditures as a share of overall education expenditures fell over 6 percentage points during the period to 16.4 percent of education budgets (Rizzo 2004).

⁴In the literature, what we call “public returns” happen to also be called “social returns.” Therefore, the total social returns in the literature are considered to be the sum of private and social returns.

⁵Suppose that a hypothetical society levied a marginal tax rate of 100 percent on earnings above \$50,000. Suppose further that bachelor’s degree holders expect to receive postschooling earnings of \$50,000, while master’s degree holders expect \$80,000. In this society, very few, if any, students would choose to obtain a masters degree—100 percent of their earnings gain is taxed away. Although society would clearly benefit from the additional \$30,000 in expected tax revenues, individuals would be unlikely to obtain the master’s degree without being able to realize at least some of the \$30,000 earnings gain.

⁶Thus, even if the entire social return is comprised of the private return, if private agents systematically underinvest due to their inability to recognize the private benefits, some government intervention is justified. For example the “options” features of educational investments are often unrealized at the time investments are being made. The same argument holds for the supply side as well.

⁷*Economics Principles*, 1927.

⁸Barham, Foltz, and Kim (2002) demonstrate that land-grant universities account for most U.S. ag-biotech patents and provide evidence that these ag-biotech patents are more cited than the average university patent.

⁹To illustrate this point, an undergraduate student believed that the economic returns to PhD study for him are negative. He left a high-paying Wall Street job that he landed out of college, spent five years in graduate school, and then landed a job for half the salary he earned pre-PhD receipt (ignoring even the opportunity costs incurred during graduate school).

¹⁰However, Black, Devereaux, and Salvanes (2003) use a unique Norwegian data set and find that most intergenerational correlations between children and parents education are due to family characteristics and inherited ability—not to education spillovers. They do find that mother's education is positively associated with son's education.

¹¹See Bloom and Sevilla (forthcoming) for a complete discussion of these.

¹²This last condition is often wildly misinterpreted. As with most public goods, spending more money on it will benefit someone. However, the relevant question is not whether spending more will make people happy, but rather if spending more on this budget item will make people happier than spending more on any other item. In other words, for public investments to be distributed optimally, the net social return on the *last* dollar invested in all goods should be equal.

¹³Not all externalities represent market failures. If externalities generated by highly educated workers make less skilled workers within a firm more productive, then the externality is internalized and there is no need for an intervention. If spillovers occur between firms then there is an impetus. Citizenship externalities may not be due to education directly, but rather derive from the increased income resulting from education. Demonstration of the positive externalities is not enough to merit public support of higher education—for it to be justified, the net externalities need to be positive. Many are guilty of ignoring potential negative externalities in education investments—you may use your enhanced education to more effectively pressure the government to benefit you at my expense. While ignorance may result in crime and a burden on social

programs, your education may produce a more competent and powerful criminal. If schooling is used in the competitive pursuit of status it can produce a negative externality as well. If I pursue education only to have more money and degrees than my neighbors, and if they have similar tastes, my consumption of education comes at their expense and vice versa.

¹⁴Leakage is measured by the proportion of the at-risk population that is not credit constrained.

¹⁵They also find that racial composition and segregation are uncorrelated with urban growth across all cities. This result is encouraging because it indicates that cities with high concentrations of low-income populations and underdeveloped areas still have the opportunity to achieve economic growth and prosperity.

¹⁶AnnaLee Saxenian wrote a book in 1994 comparing the high-technology sectors in the Silicon Valley and Route 128 in New England. She argues that Silicon Valley grew much more quickly than Route 128 because of (formal and informal) information sharing between firms on the West Coast as opposed to the proprietary attitudes among firms in the East. Such an analysis suggests that positive externalities produced by investments in higher education will be larger the more integrated our colleges and universities become.

¹⁷A difficulty in this analysis is properly controlling for selection biases. Workers with high (unobserved) ability likely sort themselves into cities where education levels are higher. It might also be the case that unobserved regional characteristics matter—differing geography, industrial structure, weather and amenities, and high average worker productivity—may also pay higher wages, which also attracts skilled workers implying reverse causality in the data.

¹⁸Two caveats are again in order. He finds that what plants gain in output per worker is offset by increased labor costs. He also demonstrates that within a city, spillovers between industries that are economically “close” are larger than spillovers between industries that are economically “distant”—emphasizing the need for coordinated investments to take place to ensure growth.

¹⁹The difficulty with these types of studies and the reason for their dearth is that schooling and civic outcomes are likely simultaneously determined by individual, family, and community characteristics. Education is thought

to affect these civic outcomes through two broad channels. First, it reduces the effective costs by making it easier to process information, wade through our bureaucratic morass, etc. And second, it may directly shape preferences for civic engagement and indoctrinate students with fundamental democratic and pluralistic values. Though, it may actually decrease engagement by increasing opportunity costs of time and making me more aware that my one vote counts for little. These studies also suffer from an inability to fully control for the selection problem inherent in these analyses—more civically minded people may attend college in higher percentages than less civically minded people. Therefore, it is difficult to disentangle an increase in civic behavior resulting from college attendance or from an inherent unobserved quality.

²⁰These expenditures include both economic costs as well as economic rents. See Martin (forthcoming) for a discussion.

²¹An additional difficulty with ROR studies stems from the moral philosophy inherent in resource-allocation questions. Should all people be counted in the cost–benefit calculations? Do we undertake investments if there are clear-cut winners and losers? How should the losers be treated?

²²A recent collection of papers edited by Lewis and Hearn (2003) examines the economic impact of the University of Minnesota. In it, they cite that the transportation multiplier is around two. Paper topics include the role of technology transfer from the university, magnet and multiplier effects of the university, the library and its service to Minnesota, the monetary returns to instruction, and the nonmonetary benefits of undergraduate education.

²³NACUBO 2003.

²⁴However, EIS typically ignore the displacement effect of college graduates on earnings and the higher real estate costs, amenities costs, etc., that have a negative effect on the native populations.

²⁵She also finds that Georgia's program has likely increased the college attendance rate of all 18- to 19-year-olds by 7.0–7.9 percentage points, but ignores the similar effects of programs from other states. Further, states need to think about the quality of the marginal out-of-state student versus the quality of the marginal resident student that originally attended out of state.

²⁶The center of gravity refers to the fact that university graduate students are more expensive to educate than college undergraduates, who are more expensive to educate than community college undergraduates.

²⁷See the National Science Foundation's WebCASPAR at <http://webcaspar.nsf.gov>.

²⁸White and Araji (1990) find that the marginal product of a one dollar investment by extension into research yields \$53.80 for applied research, \$33.60 for basic research, and \$8.49 for maintenance research

²⁹See <http://www.bonner.org/campus/bonnerscholars.htm>.

³⁰For full-time male workers age 25 and higher, the high school graduate dropout earnings advantage rose from 1.28 in 1990 to 1.37 in 2000. The advantage gained by college graduates was more substantial, rising from 1.60 in 1990 to 1.80 in 2000. See the Current Population Survey, *Digest of Education Statistics 2002*, table 381.

³¹Ellwood (2001).

³²See *Digest of Education Statistics 2002*, tables 398 and 400.

³³Sara Lipka, *Chronicle of Higher Education*, September 14, 2004, and *Digest of Education Statistics 2002*, table 410.

³⁴Rizzo and Ehrenberg (2004).

³⁵In the absence of tuition-reciprocity agreements.

³⁶IPEDS.

³⁷This latter effect may not be as bad as it appears if, in the absence of community colleges, we have an inefficient sorting and matching of students of varying abilities and colleges of varying quality (and also of varying, higher, cost).

³⁸This is particularly important if we want to increase domestic savings levels, if not rates. This would serve to allay the fears of people who claim that substantial capital account surpluses and current account deficits are detrimental to the United States economy and society at large.

³⁹See <http://www.bls.gov/news.release/prod2.nr0.htm>.

⁴⁰The gini index for the U.S. income distribution was 0.450 in 2001, up from 0.426 in 1990 and 0.403 in 1979 (see <http://www.census.gov/hhes/income/histinc/rdi5.html>). In 2003, families at the 80th percentile in the income distribution made 8.4 times more than families at the 20th (U.N. Development Programme, *Human Development Report 2004*).

⁴¹John Gravois, "Admission of Foreign Students to American Graduate Schools Continues Its Post-9/11 Decline," *Chronicle of Higher Education*, September 17, 2004.

⁴²Burton Bollag, "Foreign Enrollments at American Universities Drop for the First Time in 32 Years," *Chronicle of Higher Education*, November 10, 2004.

⁴³In this regard, an obvious place for additional research would be to compare the private returns (and perhaps public if possible) to otherwise similar individuals that attend colleges with two different levels of emphases on research in their particular field(s) of study. Monks (2000) analyzes the earnings experiences of college graduates in the National Longitudinal Survey of Youth to show that graduates from graduate-degree-granting, research, and private universities earn more than their counterparts from liberal arts colleges and public institutions. He was not able to control fully for the potential selection problems inherent in career and college-choice decisions. For example, graduates of liberal arts colleges may be more inclined to take (lower-paying) jobs in the public sector than their research-university counterparts.

⁴⁴See the National Science Foundation, <http://webcaspar.nsf.gov>. From 5 percent of overall E&G expenditures in 1984 to 6 percent in 2003, peaking at nearly 7 percent before the recession of 2001.

⁴⁵See the National Science Foundation, <http://webcaspar.nsf.gov>.

⁴⁶At the PhD-granting institutions, postbaccalaureate enrollment shares increased by 20 percent—to 21 percent of overall enrollments by 2003. It increased by 25 percent to 10 percent of overall enrollments at the master's institutions.

⁴⁷Linda B. Blackford, "UK's Freshmen Learn a Hard Math Lesson," *Lexington Herald Leader*, September 26, 2004.

⁴⁸Available at www.ilr.cornell.edu/cheri and click on "Surveys."

⁴⁹Public support for research and development is thought to encourage a "critical mass" of research and development to take place, so that increases in investments will be self-sustaining. For example, suppose we all agree that pollution reduction in urban areas is a desirable goal. Scientists and engineers may be reluctant to research methods of improving pollution reduction technologies if economists and political scientists are not trying to understand the macroeconomic, tax, and political implications of implementing these technologies. Similarly, the social scientists may not try studying the impacts of pollution-reduction technologies if they do not expect these technologies to ever be developed. Intervention of some kind may be required to convince each group to pursue these socially beneficial research agendas since the individual benefits to any one researcher depend on the activities of other researchers taking place.

⁵⁰In fact, at even the most teaching-oriented liberal arts colleges, there is an expectation that faculty remain active in their respective professions.

⁵¹Carolyn Shaw, *San Francisco Chronicle*, August 29, 2004.

⁵²See the National Science Foundation, WebCASPAR at <http://webcaspar.nsf.gov>.

⁵³The profits that exceed the risk-adjusted return to innovative investments.

⁵⁴Speech by Federal Reserve Board vice chairman Roger Ferguson, Jr., <http://www.federalreserve.gov/board/docs/speeches/2004/20041007/default.htm>.

⁵⁵See the Bureau of Labor Statistics, Productivity and Costs database.

⁵⁶It is unclear how inefficient this behavior really is. Studies find that the wages of individuals who have attended some college but with no degree are substantially higher than those of high school graduates with no

college experience. Second, the degree to which low retention rates reflect suboptimal sorting between students and institutions resulting from the current financial aid systems and interinstitutional competition is unclear.

⁵⁷It is important to recognize, however, that spending on amenities has been largely driven by consumer demand for these amenities.

⁵⁸We have yet to come across any research that analyzes the success of these types of programs.

⁵⁹*Digest of Education Statistics 2003*, table 330.

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The Private and Social Values of Education

Robert Topel

Economists (and others) have generally had little success in estimating the social effects of different investments, and, unfortunately, education is no exception.

—Gary S. Becker, Human Capital

The private monetary return to education is one of the most widely studied empirical magnitudes in economics. The consensus estimate is that the private financial return to acquiring an education is quite substantial—in the range of 8–15 percent per year of schooling. That is, an additional year of schooling typically raises an individual’s earning power between 8 percent and 15 percent. Recent data indicate that four years of college education raise earnings by about 65 percent, a return of around 13 percent per year, compounded.

These returns are at least as large as typical returns on other forms of risky investment. No surprise there, as people have many ways to invest, and we expect returns to equalized across competing alternatives. Yet the magnitude of the private returns to investments in schooling presents an economic puzzle: If schooling provides such substantial returns to those who acquire it, *why is public funding of education virtually universal?* That is, if the financial rewards are so large, why do governments feel the need to subsidize it?

To an economist, a positive case for government subsidies to education, or public provision of education (or anything else), requires the *social* benefits of schooling to be larger than the private ones. In the presence of such an “externality,” individual actors—who weigh private benefits and costs in deciding whether another year of schooling is worthwhile—will choose “too little” education compared to the social optimum. They ignore the social benefits received by *others* in making their decisions. Then government can improve things by subsidizing schooling or by other policies (such as minimum schooling requirements) that encourage individual investments in education. The near ubiquity of public education suggests that these external benefits of education may be important. Yet as Becker’s comment from

30 years ago indicates, hard evidence for a difference between private and social benefits of education is hard to come by.

These issues are also important for understanding the role of education and other forms of human capital in the process of economic development. Do countries or regions that invest heavily in human capital—say, by raising the average educational attainment of their workforces—enjoy unusually high rates of economic growth? The answer to this question appears to be yes, as I will show here. From this, it may appear that the path to local and national economic development is through public policies that encourage investments in education. This view would receive compelling support from evidence that the social returns to education—the measurable impact of raising average schooling of workers on productivity and earnings—exceeds the private return, and a number of recent empirical studies have argued this is the case. This paper provides contrary evidence, however, that indicates the social returns to schooling *as reflected in productivity and earnings* are not much larger than private ones. The conclusion is that a case for proactive public policies to encourage education does not get much support from data on growth of incomes and productivity.

PRIVATE AND SOCIAL RETURNS: A TAXONOMY

The efficiency of market outcomes typically turns on whether private benefits and costs are equal to their social values. The private returns to schooling can take many forms. The most obvious and most studied benefit is higher earnings, which economists typically interpret as a measure of the greater productivity of more educated individuals. But there are a number of plausible nonmonetary returns as well. Education may also increase productivity in nonmarket activities, such as home production; it may make parents into more efficient producers of children’s human capital; and it may lead to more informed and effective consumption decisions. Other research shows that more educated individuals live longer—which itself has substantial economic value—and they report better health at any

particular age. Finally, education is itself often a consumption good, which, in turn, enables the consumption and enjoyment of human capital goods such as information, literature, and ideas. All of these benefits of education are enjoyed directly by the educated person, so they are elements of “private” returns that people would be willing to pay for.

Education Externalities

Recent economic research has emphasized the possibility of a divergence between private and social returns to education, which, in a nutshell, means that person A may benefit from person B’s education. For example, an additional year of schooling for B may make A more productive. There are no consequences for efficiency when this type of “complementarity” occurs among employees of a firm, because the firm will take it into account in choosing how many people like B to hire and how much to pay them. Then the productivity effect is “internalized” by the firm, and outcomes are efficient. But Lucas (1988) and others have argued that A’s gain from the greater education of B may be caused by social or other interactions that occur outside of firms: for example, in cities where ideas are “in the air.” Then B’s education confers a benefit on A—higher productivity and earnings—for which B is not compensated. Left to his own devices, B would choose too little schooling compared to the efficient outcome because the private value of a year of schooling (the financial gain to B) is smaller than its social value (the gains to A and B combined). Government intervention in the form of subsidies or minimal education requirements of citizens could make things better.

In this case, an additional year of schooling raises the level of economic activity more than its private return. For example, if the private return to schooling is 10 percent, and if average schooling in the workforce increases by one year, then private returns suggest that the economywide level of output will be 10 percent greater, all other things equal. But in the presence of this educational externality, the level of productivity will be even greater—say, 12 percent higher. The difference between the social return to a year of schooling (12 percent) and its private return (10 percent) is a measure of the external effect.

A related externality might affect economic *growth*. Because growth is largely determined by technological advances—new ways of doing things—and because more educated people may be better at producing and

implementing new ideas, an increase in the level of education in an economy may increase the rate of economic growth. Individuals don’t take this effect into account in making their educational choices, which can lead to too little education compared to the social optimum.

This discussion has focused on the productivity-enhancing effects of education, yet there are many other channels through which individuals’ schooling choices may have external effects on others. Social insurance programs such as Medicare and Social Security collect taxes in order to pay for health care and retirement benefits. If more educated people are less likely to become ill, then additional schooling confers an external benefit on others because educated people are likely to require tax-funded medical care, so taxes are lower—a positive externality. But if they also live longer, they will collect more tax-funded retirement benefits—a negative externality. Empirical evidence also suggests that education reduces the likelihood that individuals will engage in criminal activities—a positive externality for those who are less likely to be victims of crime. Finally, to the extent that educated individuals are better informed, there are externalities through the political process as educated voters make “better” decisions.

When education creates positive externalities of the types just described, public funding or provision of schooling, or even compulsory schooling laws, can, in principle, move society closer to efficient outcomes. Left to themselves, individuals would choose too little schooling, and public participation in the process moves things in the “right” direction.

Can the Private Value of Education Exceed Its Social Value?

Economists are known for their ability to predict that almost anything can happen, and this area is no exception. Following Spence (1974), models of educational “signaling” conjecture that the private value of education could *exceed* its social value because employers use an individual’s observed education to infer unobserved, innate characteristics, such as ability. Schooling can raise earnings (there is a private return to schooling investment) without raising productivity (there is no social return). Many of my MBA students at the University of Chicago firmly believe this is why they are in school: They are already much more productive than the next guy, they just need our degree to prove it to employers, who will pay them more for having an MBA. Evidence to support this theoretical possibility is scant, to say the

least, and it has lost favor among economists as a useful tool for analyzing educational choices or for policy analysis. My evidence also indicates that this effect is unlikely to be broadly important.

MEASURING PRIVATE RETURNS: A PRIMER

To make progress in calibrating the social returns to education, we need a benchmark estimate of the private returns. I will focus on evidence regarding the private *financial* returns to schooling, ignoring such issues as the value of education as a consumption good, its impact on health, and so on.

Estimates of the returns to schooling are typically garnered from data that record individuals' wages or earnings, years of schooling, and some measure of labor market experience. Assume that (1) the only cost of schooling is forgone labor market earnings while enrolled, and (2) the percentage increase in earnings caused by an additional year of schooling is constant over a person's lifetime. (These assumptions don't do too much violence to the facts.) Then the rate of return to an additional year of schooling is equal to the *percentage* increase in earnings caused by an additional year. So, if high school graduates earn 10 percent more than people with 11 years of education, on average, then our estimate of the rate of return is 10 percent.

The workhorse statistical model represented by this description can be written,

$$(1) \ln W_i = X_i\beta + S_i\rho + \varepsilon_i$$

where W_i is the wage of person i , S_i is the person years of completed schooling, X_i represents other observed factors (experience and the like), and ε_i represents unobserved determinants of wages. The parameter of interest is ρ , the private return to schooling, which is the percentage increase in the wage due to one more year of schooling. Equation (1) is probably the most-estimated econometric model in all of applied economics. Versions have been estimated for virtually any country and time period where data are available (graduate students have to earn PhDs, you know), controlling for various biases. Yet for all the effort applied to this question, the range of estimates is surprisingly small. A typical return to schooling is in the range of 5–15 percent, depending on country and time period, with somewhat higher returns in developing countries (Card 1999).

As I have noted, these returns are comparable to returns on other forms of risky investment.

The recent economic history of wages in the United States provides a useful and important example for understanding the determinants of the private returns to schooling investments. Figure 1 graphs the percentage difference in wages between college-educated and high school-educated men in the United States since 1963. A telling feature of the data is the “break” that occurred around 1980: After 1980, the returns to schooling in the United States trended steadily upward and roughly doubled by the late 1990s. Calculating average annual rates of return from these data, the return to a year of college education rose from 7 percent in 1979 to over 14 percent in 2000. Other evidence (not shown here) establishes that these changes occurred at virtually all levels of measurable education and skill. For example, the increase in relative wages was even more pronounced among those with postgraduate education, whose wages rose sharply relative to graduates of four-year colleges. A large body of empirical research indicates that these changes in the relative prices of skilled (educated) workers are largely demand driven, reflecting technological changes that have favored skilled over less-skilled labor. Though I won't go into details here, this increase in the relative demand for educated labor is part of a broader trend toward increased wage inequality in the United States that began even earlier, around 1973.

When increased demand raises the return to skills, basic economics tells us that investment in skills will rise, just as more houses will be built when the demand for them rises. Here the predicted event is that more young people will attend college because the economic returns to a college education have risen. Figure 2 shows the proportion young people (ages 21–25) with at least one year of completed schooling, also beginning in 1963. After rising rapidly in the 1960s, this form of investment in human capital declined from the early 1970s to 1980—the period where the returns to college shown in figure 1 also fell. Beginning in 1980, however, the fraction obtaining college training steadily expanded, rising 10 percentage points by the late 1990s.

The response of educational investment illustrated in figure 2 is important because it suggests that the “problem” of rising wage inequality contains the seeds of its own solution. Rising inequality is evidence of the increased relative scarcity of skilled labor. But it is exactly

Figure 1: The College-High School Wage Premium

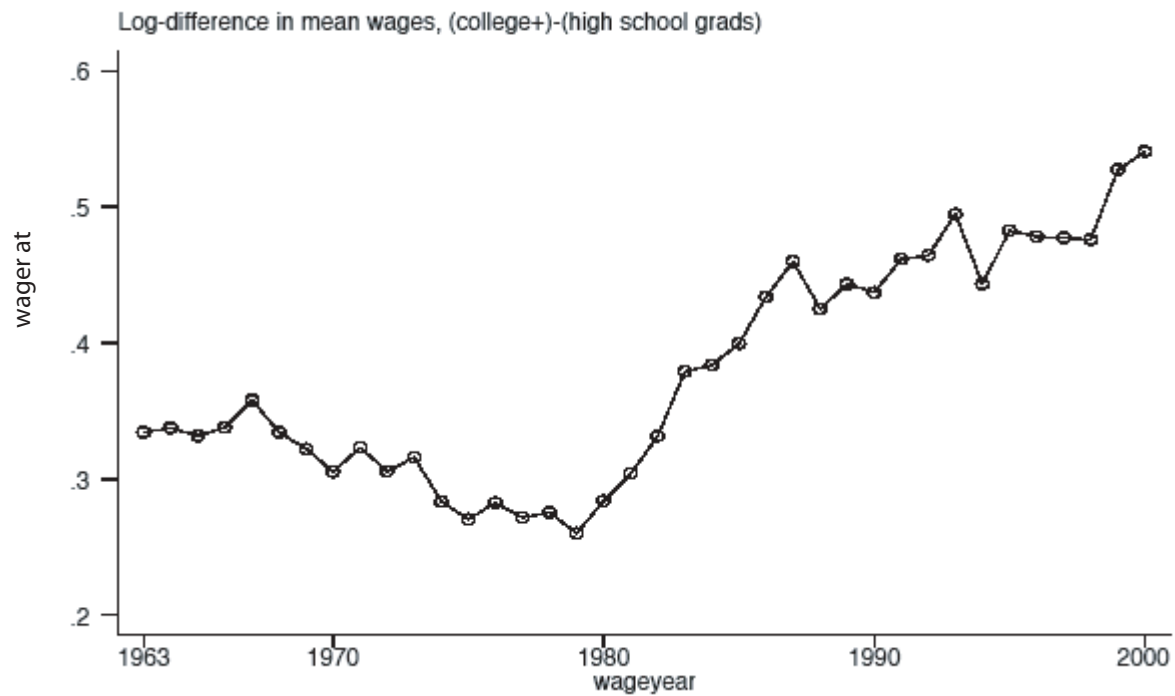
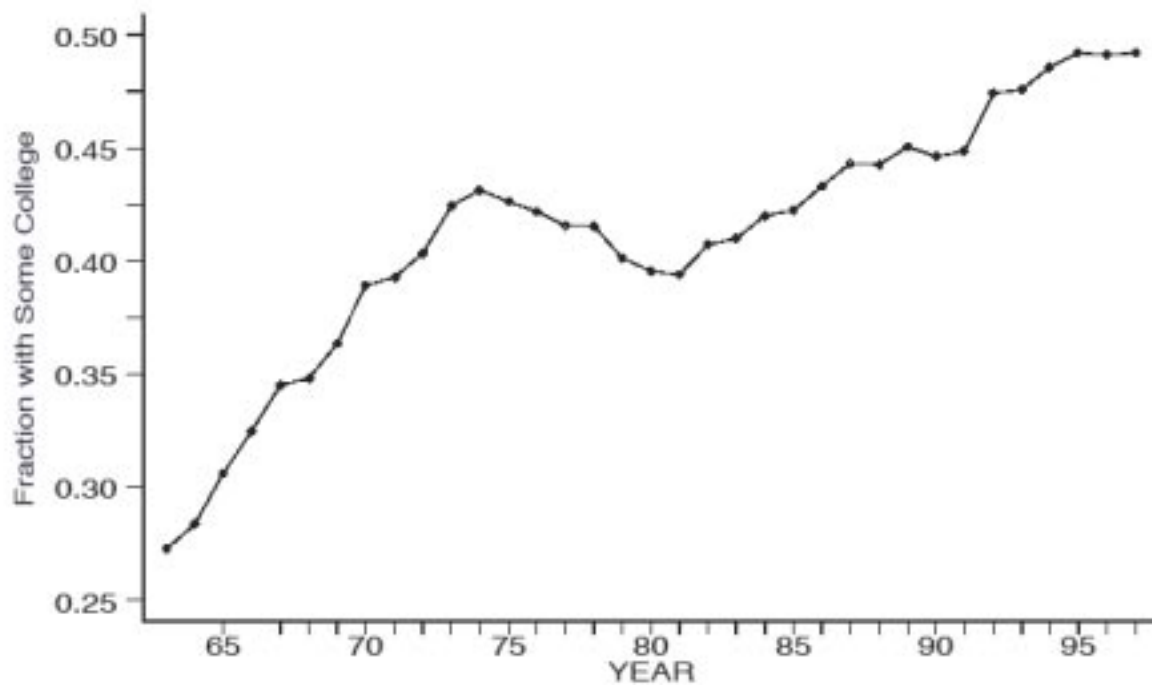


Figure 2: The Response of Educational Investment to Rising Private Returns to Schooling



Fraction of 21–25 Year-olds with Some College 1963–1997

this increase in the relative price of skill that provides the incentive for young people to invest in skills. In other words, the solution to the problem of rising inequality is to increase the relative supply of skilled workers, which, in the long run, would reduce the relative price (wage) of skilled labor. This requires investment—more people becoming skilled. Paradoxically, government efforts to combat rising inequality through redistributive tax policies or restrictions on wages will *reduce* the incentive to invest, which can only exacerbate the underlying forces that created inequality in the first place. The underlying problem is the scarcity of skilled labor; rising wage and income inequality is merely its symptom.

EDUCATIONAL EXTERNALITIES

If there are external benefits of private investments in education—as outlined previously—then the social returns to education will exceed the private returns. Efforts to measure these benefits have focused on the effects of education on productivity, income, and economic growth, so my discussion will ignore other non-monetary returns. We then ask, if the private return to an additional year of schooling is, say, 10 percent, does the social return exceed 10 percent? To answer this question, we need a way to measure the social return, and, sadly, measuring social returns is not as straightforward as measuring private returns.

One approach, pursued in Topel (1999) and Lange and Topel (2004), among others, is to measure the returns to schooling in a national income growth accounting framework. Let y_{jt} denote output per worker in country j at date t , and let h_{jt} be the corresponding average amount of human capital (skills) per worker. With constant returns to scale, Lange and Topel (1999) write output per worker as

$$(2) \ln y_{jt} = \kappa_j + \ln h_{jt} + \ln T_{jt}$$

where T_{jt} is total factor productivity in country j . According to equation (1), output per worker increases when workers become more skilled (more h) or when the state of technology in j makes workers of a given skill more productive (more T). Now let

$$(3) \ln h_{jt} = X_{jt}\beta + S_{jt}\gamma^P + u_{jt}$$

and

$$(4) \ln T_{jt} = S_{jt}\gamma^E + a_{jt}$$

In equation (3) S_{jt} is the average years of schooling per worker in country j , and X_{jt} is the other observable components of skill, such as experience. The parameter γ^P represents the private returns to schooling. If an additional year of schooling raises *individual* productivity by 10 percent ($\gamma^P = 0.10$), then an increase in the *average* years of schooling across all workers should increase the average productivity of workers by 10 percent as well. But if additional education creates positive externalities, the social return will exceed 10 percent, which shows up as an increase in total factor productivity. This effect is shown in equation (4), where the external benefit of an additional year of average schooling is represented by γ^E . The empirical question is whether $\gamma^E > 0$.

Combining equations (2)–(4) yields a tractable model of the effects of education on economic growth:

$$(5) \ln y_{jt} = \kappa_j + X_{jt}\beta + S_{jt}(\gamma^P + \gamma^E) + u_{jt} + a_{jt}$$

In equation (5), $\gamma^P + \gamma^E$ is the social return to an additional year of schooling: the sum of the private and external effects of schooling on productivity. So equation (5) asks whether the impact of schooling on aggregate productivity is larger (or smaller) than its impact on individual productivity.

Table 1, taken from Topel (1999) shows estimates of $\gamma^P + \gamma^E$ derived from a sample of 111 countries at five-year intervals between 1960 and 1990.¹ In models that contain country and year effects, in column (3), the estimated social return to schooling is 0.10 per year of schooling. This is in the same range as the typical estimate of private returns, so there is no compelling evidence for positive educational externalities. On the other hand, table 1 provides little comfort to those who would argue that social returns are smaller than private ones, as implied by signaling models of educational choice.

Estimates of equation (5) are not an explicit model of economic growth, which can be achieved by taking first differences within a country:

$$(6) \Delta \ln y_{jt} = \Delta X_{jt}\beta + \Delta S_{jt}(\gamma^P + \gamma^E) + \Delta u_{jt} + \Delta a_{jt}$$

Table 2 shows estimates for various specifications of equations (6)—again taken from Topel (1999)—where the growth interval is allowed to vary from five to 20 years. At a 20-year growth interval, the estimated impact of a one-year growth in average schooling per worker on average productivity is 0.246, which is vastly larger than

TABLE 1: THE EFFECTS OF EDUCATION ON LABOR PRODUCTIVITY
FIXED COUNTRY EFFECTS, 1960–1990 (N=719)

	(1)	(2)	(3)	(4)
Avg. Years of Schooling	0.23 (22.67)		0.10 (6.21)	
Avg. Years of Primary Schooling		0.20 (10.28)		0.06 (2.05)
Avg. Years of Secondary Schooling		0.28 (7.62)		0.14 (5.76)
Country Effects	Yes	Yes	Yes	Yes
Year Effects	No	No	Yes	Yes
R^2	.46	.46	.58	.59

TABLE 2: THE EFFECTS OF EDUCATION ON PRODUCTIVITY AND GROWTH
FIRST-DIFFERENCE ESTIMATOR AT VARIOUS GROWTH INTERVALS

(dependent variable: Δy_{jt})

	5-year growth (N=608)	10-year growth (N=290)	15-year growth (N=186)	20-year growth (N=101)	5-year growth fixed effects (N=604)	10-year growth fixed effects (N=290)
Δ Education:	0.115	0.115	0.155	0.246	0.022	0.086
ΔX_{jt}	(5.07)	(5.07)	(5.23)	(5.73)	(1.32)	(2.85)
Years of schooling	0.003	0.003	0.003	0.004	0.004	0.009
	(4.85)	(4.85)	(4.59)	(5.93)	(1.29)	(2.49)
Ln output/worker:	-0.004	-0.004	-0.005	-0.009	-0.043	-0.047
	(1.56)	(1.56)	(1.77)	(2.26)	(6.02)	(6.03)
$\ln y_{jt} \Delta X_{jt} \times \ln y_{jt}$	-0.060	-0.060	-0.041	-0.025	-0.020	-0.049
	(2.70)	(2.70)	(1.30)	(0.57)	(1.25)	(2.00)
R^2	.332	.332	.391	.399	.287	.493

Notes: t-statistics in parentheses. Based on Summers-Heston Mark 5.6 and Barro-Lee (1993) data. All models include year effects. Effects of ΔX_{jt} are evaluated at the mean level of $\ln y_{jt}$.

any estimate of private returns. This estimate implies implausibly large externalities, perhaps because other forms of investment are correlated with growth in average years of schooling.

Evidence from Local Data: States and Cities

A number of recent studies have sought evidence of human capital externalities from the spatial distribution of wages in the United States. The presumption in these studies (Rauch 1993; Acemoglu and Angrist 1999; Moretti 2003, 2004) is that the production externalities of education increase local wages. A prototype model of the wage of person i working and living in locale l is

$$(7) \Delta \ln W_{li} = X_{li} B + S_{li} \gamma^p + \bar{S}_l \gamma^E + \varepsilon_{li}$$

where \bar{S}_l is the average years of completed schooling for workers in l . Here the empirical question is whether greater *average* education in an area raises individual wages, after controlling for individual years of schooling, S_i . Evidence that $\gamma^E > 0$ is taken as evidence for externalities—the productivity of individuals is greater when those who work around them are more educated.

Lange and Topel (2004) argue that the assumptions needed to plausibly identify γ^E are unlikely to be satisfied, so that pretty much anything can happen. And it does—estimates of γ^E from various studies are all over the map, ranging from zero (Acemoglu and Angrist) to about 0.40 (Moretti 2004). The former estimate means there are noexternal benefits of education, while the

latter means that an additional year of average schooling raises the wage of the average worker about 50 percent. This is simply outside the range of plausibility.

Education and the Growth in U.S. States: 1940–2000

One of the most prominent facts about American economic growth in the second half of the twentieth century is “convergence.” While real incomes in all areas of the United States grew dramatically, poorer states grew faster than rich ones, so that inequality of incomes *across* states and areas declined. This pattern of growth suggests three important questions. First, has growth in the education of the workforce contributed to growth in real incomes? The answer to this, almost incontestably, is yes. Second, can we explain the spatial convergence of real incomes as (at least in part) an outcome of convergence in levels of schooling? Again, the answer appears to be yes. Finally, related to externalities, has growth of education produced spillover effects that have raised productivity by more than the private returns to schooling? Here the

answer appears to be maybe, but the evidence is not very compelling.

Figure 3 provides the most compelling evidence of convergence. It graphs the *change* in log real wages of men between 1940 and 2000 against the level of wages in 1940, based on census data.² The pattern is pretty obvious: Wages grew fastest in low-wage Southern states. The range of values indicates that growth among the poorest states in 1940 (Georgia, South Carolina, and Mississippi) was about a twice that of the richest states (California, Nevada, Michigan, and New Jersey). Suggestive evidence that education played a role is shown in figure 4, which is an identical graph for growth in average years of schooling of the workforce. The pattern is the same—states with low levels of schooling added about twice as many additional years of schooling over the 60-year interval as did those with the most schooling in 1940. Inspection of the graph reveals that the identities of the fast- and slow-growing states are roughly the same as in figure 3: Educational levels grew rapidly in the South, and these states were catching up with high-education states.

Figure 3: Levels and Growth of State Wages 1940–2000

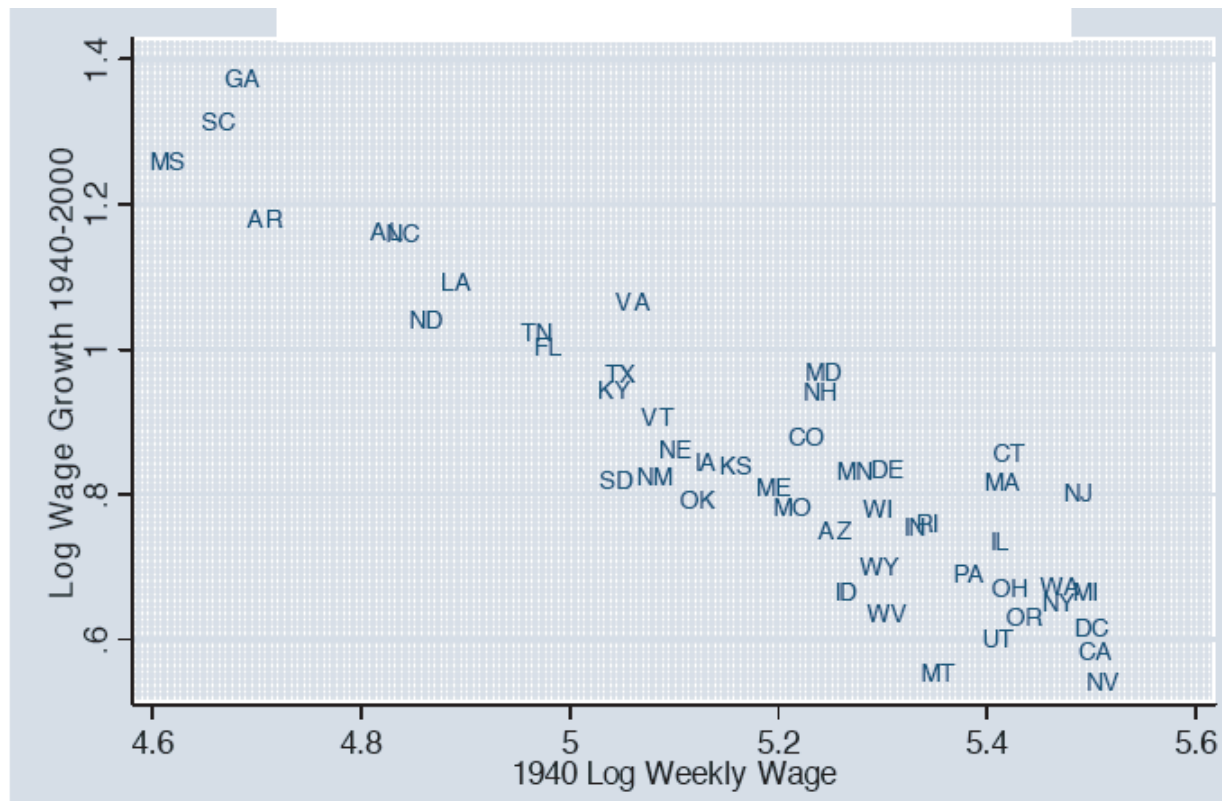


Figure 4: Levels and Growth of State Average Years of Schooling 1940–2000

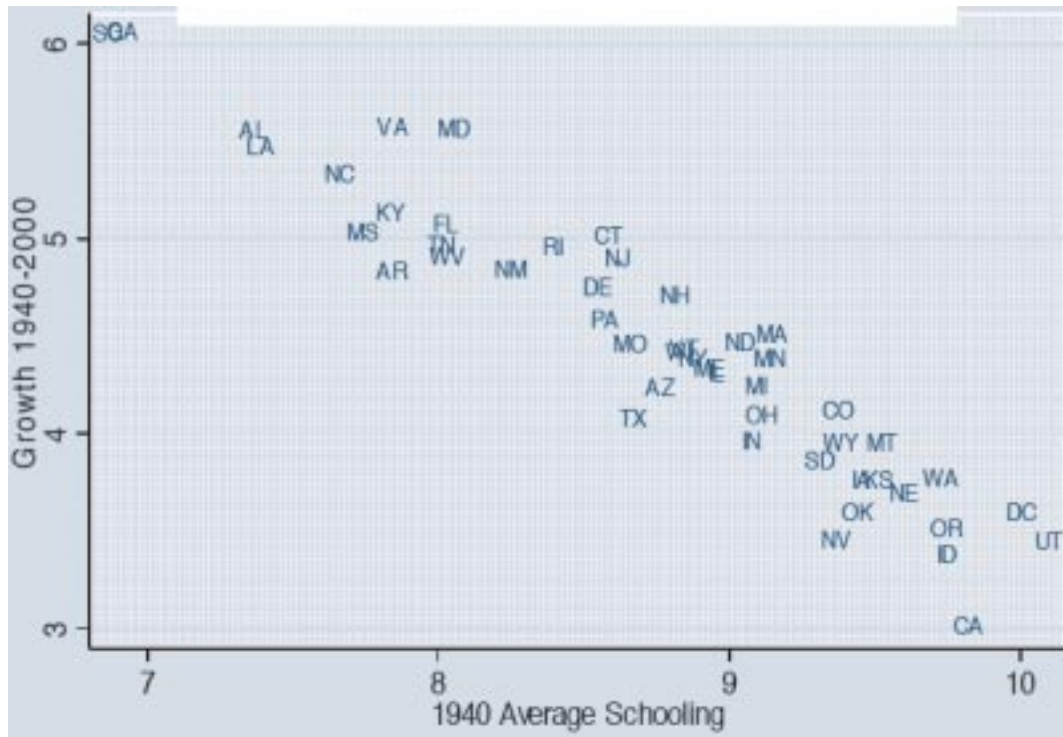
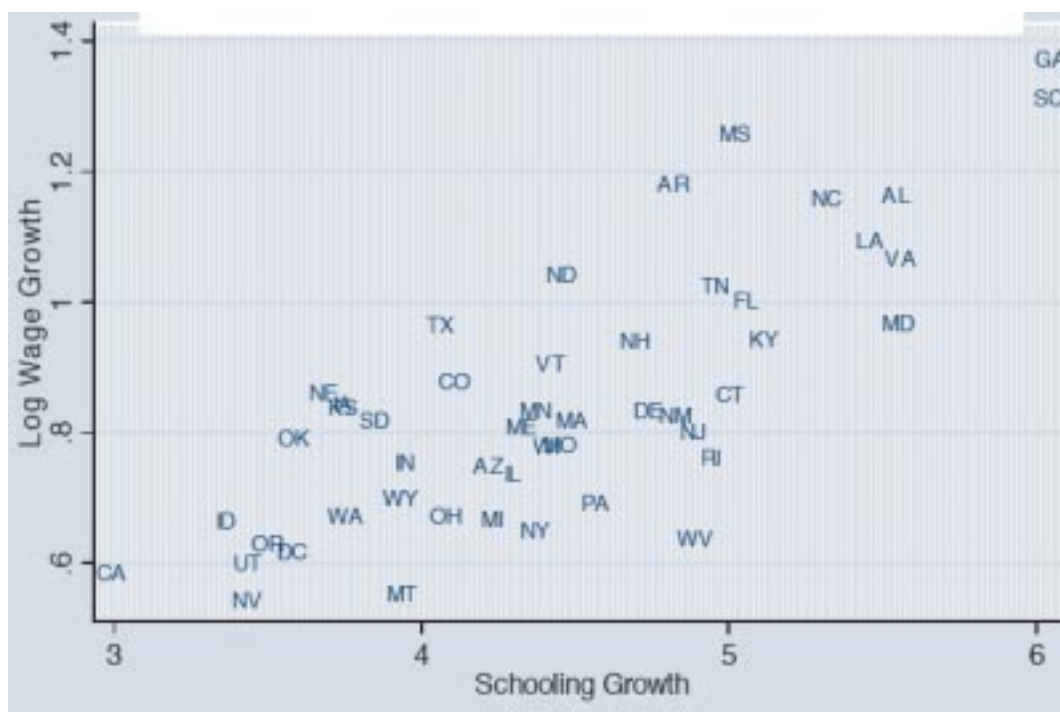


Figure 5: Growth in Education and Growth in Wages 1940–2000



The two patterns of convergence are related to one another in figure 5, which graphs wage growth against growth in average years of schooling. The data are fairly convincing that growth in schooling and growth in wages are closely related. A simple regression of growth in log wages on growth in schooling has a coefficient of .22, indicating that each year of additional schooling in a state is associated with productivity growth of over 20 percent. Thus, the data suggest that education “drives” growth, and that the social return to education substantially exceeds the private return. Yet growth in education may be correlated with other unmeasured factors that also contribute to productivity and wage growth. Obvious candidates are local changes in the demand for skills (though this seems unlikely over such a long period), improvements in the quality of education that are correlated with growth in educational achievement (likely), and changes in the unobserved talents of workers.

To explore these issues, Lange and Topel (2004) attempt to isolate local growth in total factor productivity and to control for local environmental factors that might affect the unobserved skills of workers, such as changes in schooling quality. They estimate a two-stage model of the following form:

$$(8) \ln w_{ilt} = X_{ilt} \beta_t + T_{lt} \delta_{bc} + u_{it}$$

$$(9) \Delta T_{lt} = \Delta \bar{s}_{lt} \gamma^E + \Delta \bar{\delta}_{lt} \beta^\delta + \eta_{lt}$$

In equation (8), T_{lt} represents the level of total factor productivity in state l in year t , which we estimate by including state-by-year effects in a model of individual wages. The parameters δ_{bc} are birth-state-by-cohort effects that are meant to represent environmental factors, such as school quality, that have a common impact across young people in state b . Importantly, census data identify the state in which respondents were born, so these effects are identified by people who now live somewhere else. Intuitively, the effect asks whether individuals from “high-quality” environments earn higher wages, on average, regardless of where they now live and work. Equation (9) then relates the growth of total factor productivity between census years to growth in education and growth in the *average* quality of workers, where $\bar{\delta}_{lt}$ is the average value of δ_{bc} among workers residing in state l at date t . If unobserved quality matters, and if quality is determined by state-specific environmental factors, then we expect $\beta^\delta > 0$. Further, if unobserved environmental factors and average schooling

attainment tend to grow together, as we might expect, then the inclusion of $\Delta \bar{\delta}_{lt}$ in equation (9) will reduce the estimated impact of schooling growth on total factor productivity.

This is, in fact, what happens. Figure 6 shows the relationship between long-run (60-year) changes in unobserved skills ($\bar{\delta}_{lt}$) and average schooling. States with greater schooling growth also experienced an increase in the relative quality of persons who were born in those states. This means that growth in education and growth in quality go hand in hand, so a simple regression of changes in productivity on changes in education may find externalities where none exist.

How big might this bias be? Table 3 shows estimates of equation (9) at various growth intervals for specifications that both exclude and include $\Delta \bar{\delta}_{lt}$ in the growth model. For each growth interval the first column shows the simple least squares regression relationship between educational growth and growth of total factor productivity. All of these estimates of γ^E are numerically large, with the biggest effects for the longest growth intervals. For example, the 60-year estimate is 0.081, suggesting that an additional year of education raises total factor productivity by 8.1 percent. Adding changes in unobserved labor force quality $\Delta \bar{\delta}_{lt}$ reduces the impact of education in each case. For the longest (60-year) interval, the point estimate falls from 0.081 to 0.023. None of the column (2) estimates are significantly different from zero by conventional standards—there is no persuasive evidence that education raises total factor productivity once growth in the unobserved quality of workers is accounted for. This evidence does not demonstrate that externalities are unimportant. But this evidence surely raises doubts about the importance of externalities, estimates of which are almost certainly overstated by least squares and other methods that have been applied in empirical studies. The evidence is that states with growing productivity and educational attainment also attract or produce “better” workers, and even a simple measure of labor force quality eliminates up to three-fourths of the alleged relation between education and total factor productivity. I conclude that the data on local wages and productivity do not provide strong reasons to believe in the importance of productive externalities from schooling.

Figure 6: Growth in Unobserved Skills and Growth in Schooling 1940–2000

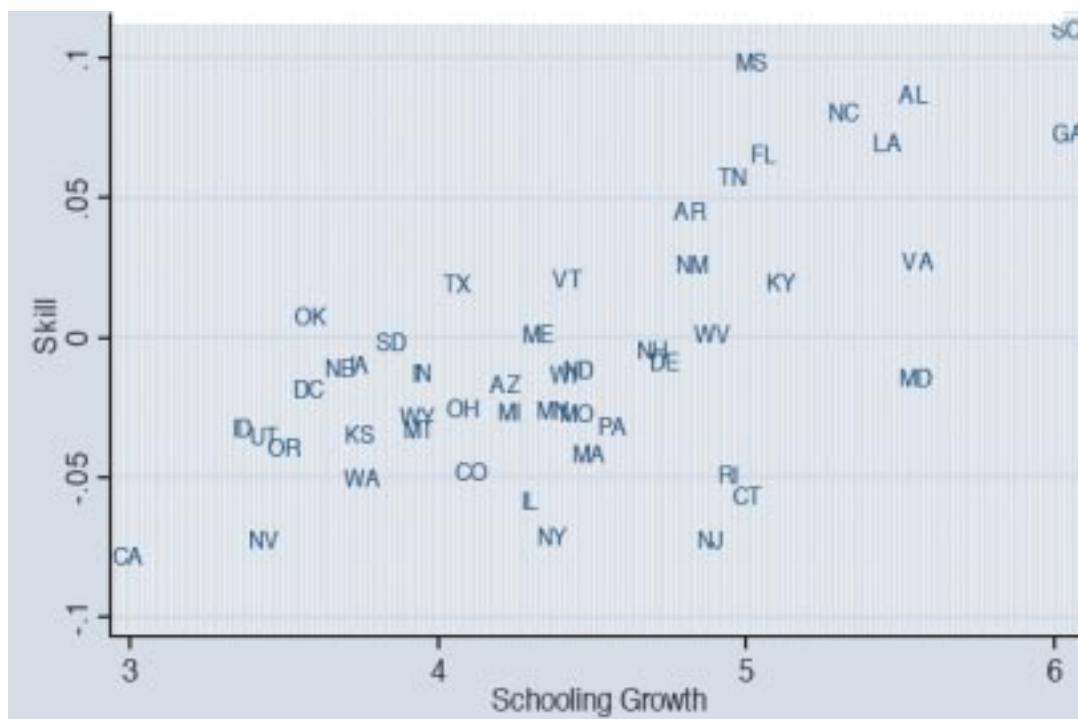


TABLE 3: EDUCATION AND PRODUCTIVITY GROWTH: U.S. STATES 1940–2000

$$\Delta T_{it} = B_{0t} + \Delta Educ_{it} B_1 + \Delta \bar{\delta}_{it} B_2 + e_{it}$$

	10 year growth		20 year growth ^b		30 year growth ^c		60 year growth	
$\Delta Educ$	0.46	0.26	0.68	0.40	0.67	0.36	0.81	0.22
	(2.70)	(1.44)	(3.57)	(1.90)	(3.94)	(1.80)	(3.86)	(0.91)
$\Delta \bar{\delta}_t$		1.23		1.08		1.01		1.35
		(2.86)		(2.76)		(3.06)		(3.64)
R_2	.894	.897	.952	.954	.978	.980	.248	.415

Notes:

a. T-statistics in parentheses.

b. 20-year growth intervals are 1940–60, 1960–90, 1980–2000.

c. 30-year growth intervals are 1940–70, 1970–2000.

THE SOCIAL RETURN TO SCHOOLING: WHERE DO WE STAND?

Most economists agree that human capital is central to economic growth and improvements in well-being. Yet the case for active public policies that encourage investment in human capital, particularly investments in education, rests on the seemingly plausible premise that social returns to human capital are larger than private ones. This paper has developed a framework for evaluating the difference between private and social returns to education, as measured by gains in wages and productivity. I find the evidence for excess social returns is mixed, at best. There is little compelling evidence for positive external benefits of schooling investments; instead, the data suggest that *individuals* are the main beneficiaries of their own schooling choices.

On a more positive note, there is no empirical support for the notion that social returns are *smaller* than private ones. This is not only evidence against the signaling view of schooling, but important evidence that growth in education has been an important contributor to the geographic convergence in incomes and productivities that occurred in the United States after 1940.

ACKNOWLEDGMENTS

This paper summarizes my keynote address to the Federal Reserve Bank of Cleveland Conference on Education and Education and Economic Development, November 19, 2004. My discussion draws heavily from joint work with Fabian Lange. I am grateful to conference participants for useful comments and discussion.

ENDNOTES

¹Output and productivity data are from the Summers-Heston Mark 5.6 (1995) files, while information on educational attainment of the labor force was collected by Barro and Lee (1993).

²I use male wages because of vast changes in female labor force participation over this period.

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The Economic Value of Improving Local Schools

Eric A. Hanushek

Local civic leaders intuitively understand that education is good and that the quality of schools may in one way or another relate to local development. The arguments, however, tend to be general. They are linked only imprecisely to the impacts of schooling on the economy and to ways of improving the schools. This paper discusses what is known about the economic value of better schools and then puts those values into the perspective of school reform actions—particularly actions to improve the quality of teachers.

One important aspect of the discussion is how educational reform fits into notions of local economic development. What we know about the economics of school quality fits more into discussions of national outcomes, which may differ from local outcomes. An attempt is made to put this into the context of a more local economy.

The findings about the importance of school quality are particularly relevant in the context of U.S. accountability policies that emphasize performance on standardized tests in core areas. Some people have suggested that the achievement emphasized by current state accountability systems is not very important and that other aspects of student performance—creativity, the ability to work in teams, or personality traits—should be the focus of attention. While these other aspects are undoubtedly valuable, the analysis here strongly affirms an emphasis on basic cognitive skills by demonstrating its substantial economic returns.

Most consideration of the economic aspects of education has naturally concentrated on school attainment, or the quantity of education. It is easy to calculate the economic return on such an investment—both the costs and benefits are fairly clear. Additionally, until recently, relatively limited data have been available on the quality of schools. Finally, there are great uncertainties about how to change quality and what it costs. Nonetheless, the policy issues today are ones of quality.

Two decades ago, the federal government released a report, *A Nation at Risk* (National Commission on Excellence in Education 1983), which identified some

serious problems with school quality. While it precipitated an unbroken period of concern about U.S. schools, it did not lead to any substantial improvements in school quality (Peterson 2003).

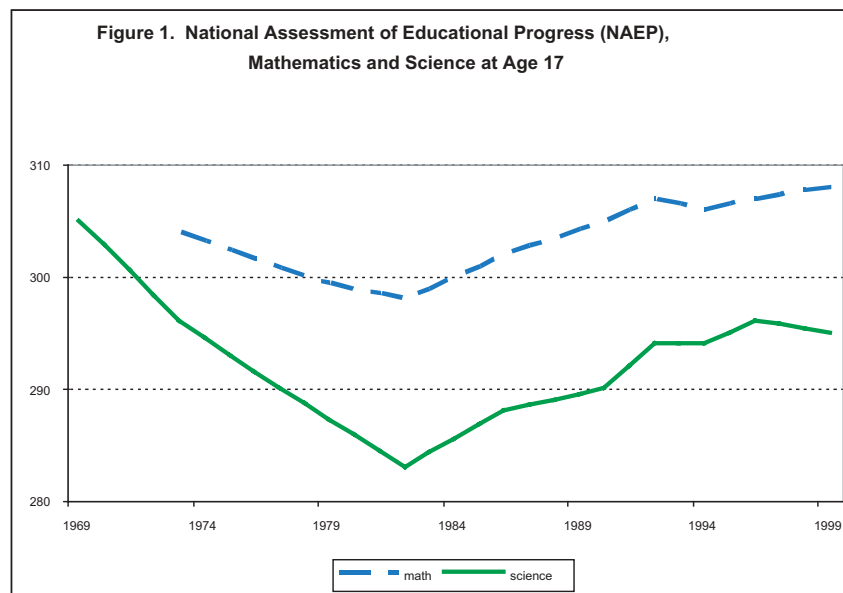
The benefits of reform are generally easier to estimate than the costs, although some information on costs is provided at the end. The central messages are: first, the economic impact of reforms that enhance student achievement will be very large. Second, reform must be thought of in terms of both the *magnitude* of changes and the *speed* with which any changes occur. Third, based on current knowledge, the most productive reforms are almost certainly ones that improve the quality of the teacher force. Fourth, such policies are likely to be ones that improve the hiring, retention, and pay of high quality teachers, that is, selective policies aimed at the desired outcome.

This discussion begins with a consideration of student achievement from varying perspectives. This discussion permits benchmarking the kinds of reforms and economic impacts that are relevant for policy deliberations.

U.S. STUDENT ACHIEVEMENT

The National Assessment of Educational Progress (NAEP) provides direct information on how student achievement has changed over time. It also points to substantial different performance by subgroups.

Figure 1 shows how performance of U.S. students has tracked over the past three decades in the critical areas of mathematics and science. At the end of high school, current students perform slightly better in math than those 30 years ago, but they perform noticeably worse in science. Not shown is the fact that reading scores over the same period are slightly up, and writing scores (only available for a portion of the period) are down. The summary statement is that student performance in the United States has been essentially flat for a long period of time.¹



A second perspective on achievement is the disparity in scores across racial and ethnic subgroups. Figures 2 and 3 provide pictures of how the math and science performance of African American and Hispanic students compares to the performance of white students. The black–white gap has been very large, although there was some closing during the 1980s. The Hispanic–white gap also closed in the 1980s and went on to show further closing in the 1990s.

The racial and ethnic gaps remain very large. The figures have put the gaps in terms of standard deviations of individual test scores. Blacks fall almost one standard deviation behind whites, while Hispanics fall two-thirds of a standard deviation behind.

It is important to understand what such magnitudes mean, because the subsequent discussion of the economics of quality put scores into standard deviation units. A person who performs one standard deviation below the mean of the distribution will be at the 16th percentile. A person who performs one-half standard deviation below the mean will be at the 31st percentile of the distribution. (Similarly, an improvement of one-half standard deviation will take somebody at the middle of the distribution to the 69th percentile).

A final perspective on current student achievement is found in the distribution of performance across districts.

During 2003, NAEP testing provided a finer geographic breakdown for mathematics performance in grade eight. While students in Ohio and the entire midwestern region performed slightly above the national average, performance in Cleveland was almost one standard deviation behind the nation. This partly reflects the heavily minority population in Cleveland, with 72 percent of the NAEP students being black. The white population in Cleveland, however, also scored some two-thirds of a standard deviation below white eighth-graders in the nation as a whole.

The next section translates these scores into economic terms.

BENEFITS OF ENHANCED SCHOOL QUALITY

Economists have devoted considerable attention to understanding how human capital affects a variety of economic outcomes. The underlying notion is that individuals make investment decisions in themselves through schooling and other routes. The accumulated skills that are relevant for the labor market from these investments over time represent an important component of the human capital of an individual. The investments made to improve skills then return future economic benefits in much the same way that a firm's investment in a set of machines (physical capital) returns future production and income. In the case of

Figure 2. White-Black Differences in NAEP Scores, 17-year-olds

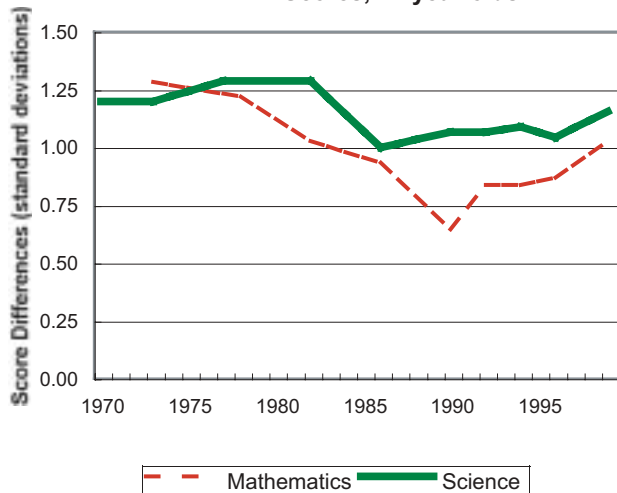
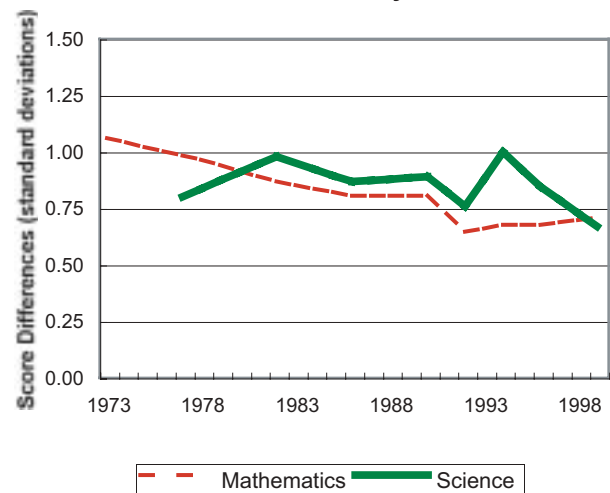


Figure 3. White-Hispanic Differences in NAEP Scores, 17-year-olds



public education, parents and public officials act as trustees for their children in setting many aspects of the investment paths.

In looking at human capital and its implications for future outcomes, economists are frequently agnostic about where these skills come from or how they are produced. Although we will return to that below, it is commonly presumed that formal schooling is one of several important contributors to the skills of an individual and to human capital. It is not the only factor. Parents, individual abilities, and friends undoubtedly contribute. Schools nonetheless have a special place because they are most directly affected by public policies. For this reason, we frequently emphasize the role of schools.

The human capital perspective immediately makes it evident that the real issues are ones of long-run outcomes. Future incomes of individuals are related to their past investments. It is not their income while in school or their income in their first job. Instead, it is their income over the course of their working life.

The distribution of income in the economy similarly involves both the mixture of people in the economy and the pattern of their incomes over their lifetime. Specifically, most measures of how income and well-being vary in the population do not take into account the fact that some of low-income people have low incomes only because they are just beginning a career. Their lifetime income is likely to be much larger as they age, gain experience, and move up in their firms and careers. What is important is that any noticeable effects

of the current quality of schooling on the distribution of skills and income will only be realized years in the future, when those currently in school become a significant part of the labor force. In other words, most workers in the economy were educated years and even decades in the past—and they are the ones who have the most impact on current levels of productivity and growth, if for no reason other than that they represent the larger share of active workers.

Individual Incomes

One of the challenges in understanding the impact of quality differences in human capital has been simply knowing how to measure quality. Much of the discussion of quality—in part related to new efforts to provide better accountability—has identified cognitive skills as the important dimension. And, while there is ongoing debate about the testing and measurement of these skills, most parents and policy makers alike accept the notion that cognitive skills are a key dimension of schooling outcomes. The question is whether this proxy for school quality—students’ performance on standardized tests—is correlated with individuals’ performance in the labor market and the economy’s ability to grow. Until recently, little comprehensive data were available to show any relationship between differences in cognitive skills and any related economic outcomes. Such data are now becoming available.

Much of the work by economists on differences in worker skills has actually been directed at the issue of determining the average labor market returns to additional schooling and the possible influence of differences

in ability. The argument has been that higher-ability students are more likely to continue in schooling. Therefore, part of the higher earnings observed for those with additional schooling really reflects pay for added ability and not for the additional schooling. Economists have pursued a variety of analytical approaches for dealing with this, including adjusting for measured cognitive test scores, but this work generally ignores issues of variation in school quality.²

There is mounting evidence that quality measured by test scores is directly related to individual earnings, productivity, and economic growth. A variety of researchers have documented that the earnings advantages to higher achievement on standardized tests are quite substantial. While these analyses emphasize different aspects of individual earnings, they typically find that measured achievement has a clear impact on earnings after allowing for differences in the quantity of schooling, the experiences of workers, and other factors that might also influence earnings. In other words, higher quality as measured by tests similar to those currently being used in accountability systems around the country is closely related to individual productivity and earnings.

Three recent studies provide direct and quite consistent estimates of the impact of test performance on earnings (Mulligan 1999; Murnane et al. 2000; Lazear 2003). These studies employ different nationally representative data sets that follow students after they leave schooling and enter the labor force. When scores are standardized, they suggest that a one standard deviation increase in mathematics performance at the end of high school translates into 12 percent higher annual earnings.³ The impact of one-half standard deviation in test performance is illustrated in figure 4, which builds on the level of median annual earnings for workers in 2001. By way of summary, median earnings, while differing some by age, were about \$30,000, implying that a one-half standard deviation increase in performance would boost these by \$1,800 for each year of work life. Mean incomes were about \$40,000, suggesting that a one-half standard deviation translates into \$2,400 per year of average earnings. The full value to individual earnings and productivity is simply the annual premium for skills integrated over the working life. If we accumulate this mean earnings gain over a lifetime and calculate the value at high school graduation, we find that a one-half standard deviation improvement adds an expected \$40,000 in earnings for each student.⁴

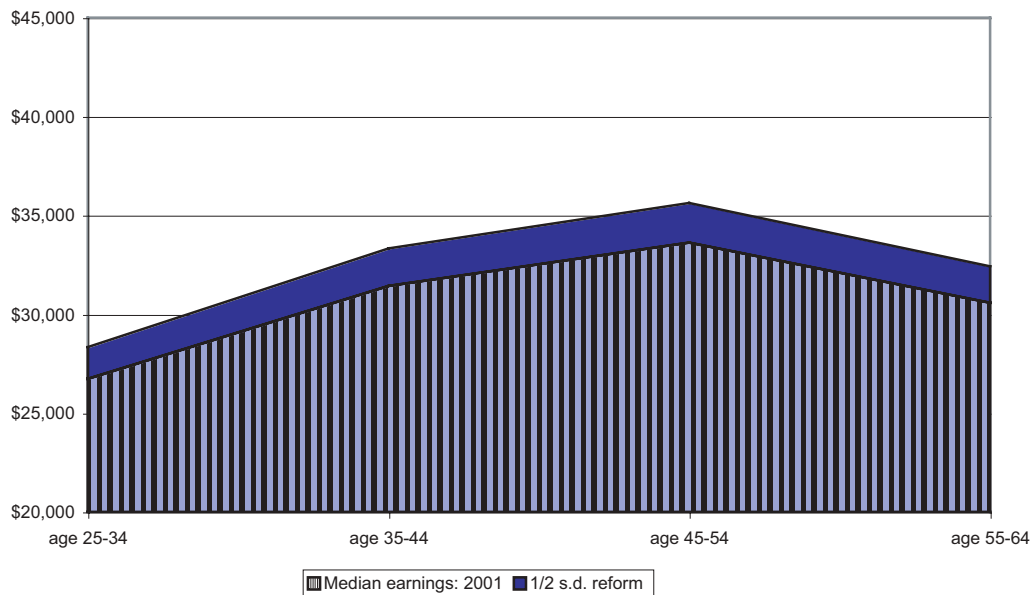
There are reasons to believe that these estimates provide a lower bound on the impact of higher achievement. First, these estimates are obtained fairly early in the work career (mid-20s to early 30s), and other analysis suggests that the impact of test performance becomes larger with experience.⁵ Second, the labor market experiences that are observed begin the mid-1980s and extend into the mid-1990s, but other evidence suggests that the value of skills and of schooling has grown throughout and past that period. Third, future general improvements in productivity are likely to lead to larger returns to skill.⁶

Another part of the return to school quality comes through continuation in school. There is substantial U.S. evidence that students who do better in school, either through grades or scores on standardized achievement tests, tend to go farther in school. Murnane et al. (2000) separate the direct returns to measured skill from the indirect returns of more schooling and suggest that perhaps one-third to one-half of the full return to higher achievement comes from further schooling. (Figure 1 is just the direct effects of skills, not including the indirect effects coming through added schooling). Note also that the effect of quality improvements on school attainment incorporates concerns about dropout rates. Specifically, higher student achievement keeps students in school longer, which will lead, among other things, to higher graduation rates at all levels of schooling.

The impact of test performance on individual earnings provides a simple summary of the primary economic rewards to an individual. This estimate combines the impacts on hourly wages and on employment/hours worked. It does not include any differences in fringe benefits or nonmonetary aspects of jobs, nor does it make any allowance for aggregate changes in the labor market that might occur over time.

Economic Growth

The relationship between measured labor force quality and economic growth is perhaps even more important than the impact of human capital and school quality on individual productivity and incomes. Economic growth determines how much improvement will occur in the overall standard of living of society. Moreover, the education of each individual has the possibility of making others better off (in addition to the individual benefits just discussed). Specifically, a more educated society may lead to higher rates of invention; may make everybody more productive through the ability of firms to introduce new

Figure 4. Median U.S. Individual Earnings with Moderately Strong Reform

and better production methods; and may lead to more rapid introduction of new technologies. These externalities provide extra reason for being concerned about the quality of schooling.

The current economic position of the United States is largely the result of its strong and steady growth over the twentieth century. Economists have developed a variety of models and ideas to explain differences in growth rates across countries—invariably featuring the importance of human capital (see Barro and Sala-I-Martin 1995).

The empirical work supporting growth analyses has emphasized school attainment differences across countries. Again, this is natural because, while compiling comparable data on many things for different countries is difficult, assessing the quantity of schooling is more straightforward. The typical study finds that quantity of schooling is highly related to economic growth rates. But, quantity of schooling is a very crude measure of the knowledge and cognitive skills of people—particularly in an international context.

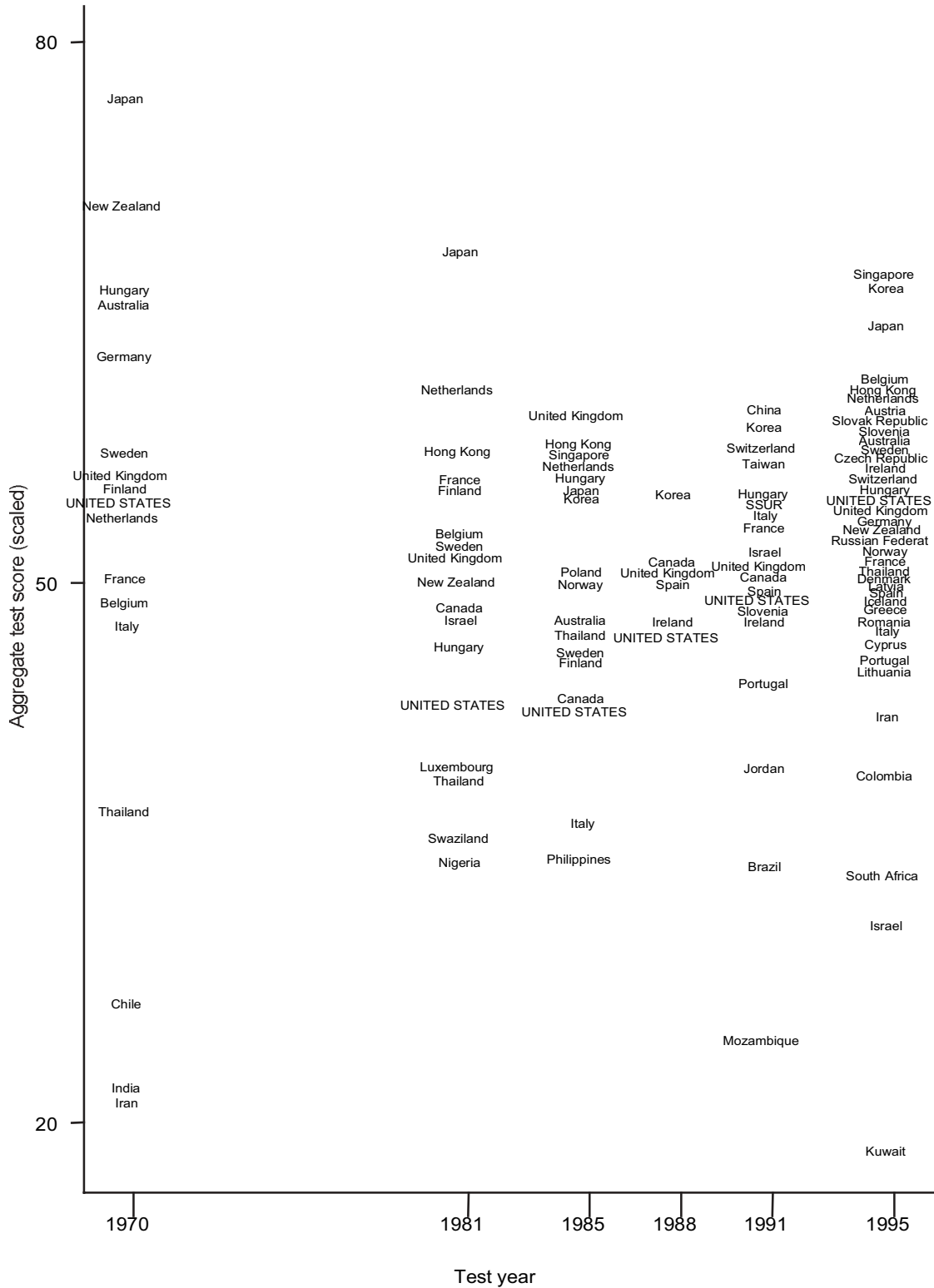
Hanushek and Kimko (2000) go beyond simple quantity of schooling and delve into quality of schooling. We incorporate the information about international differences in mathematics and science knowledge that has been developed through testing over the past four decades, and we find a remarkable impact of differences in school quality on economic growth.

The international comparisons of quality come from piecing together results of a series of tests administered over the past four decades. In 1963 and 1964, the International Association for the Evaluation of Educational Achievement (IEA) administered the first of a series of mathematics tests to a voluntary group of countries. These initial tests suffered from a number of problems, but they did prove the feasibility of such testing and set in motion a process to expand and improve on the undertaking.⁷

Subsequent testing, sponsored by the IEA and others, has included both math and science and has expanded on the group of countries that have been tested. In each, the general model has been to develop a common assessment instrument for different age groups of students and to work at obtaining a representative group of students taking the tests. An easy summary of the participating countries and their test performance is found in figure 5. This figure tracks performance aggregated across the age groups and subject area of the various tests and is scaled to a common test mean of 50.⁸ The United States and the United Kingdom are the only countries to participate in all of the testing.

There is some movement across time of country performance on the tests, but for the one country that can be checked—the United States—the pattern is consistent with other data. NAEP performance over this period, shown previously in figure 1, also exhibits a sizable

Figure 5. Normalized test scores on mathematics and science examinations, 1970–1995



dip in the seventies, a period of growth in the eighties, and a leveling off in the nineties.

This figure also highlights a central issue here. The United States has not been competitive on an international level. It has scored below the median of countries taking the various tests. Moreover, this figure—which combines scores across different age groups—disguises the fact that U.S. performance is much stronger at young ages but falls off dramatically at the end of high school (Hanushek 2003).

Kimko and my analysis of economic growth is very straightforward. We combine all of the available earlier test scores into a single composite measure of quality and consider statistical models that explain differences in growth rates across nations during the period 1960 to 1990. The basic statistical models, which include the initial level of income, the quantity of schooling, and population growth rates, explain a substantial portion of the variation in economic growth across countries.

Most important, the quality of the labor force as measured by math and science scores is extremely important. A one standard deviation difference on test performance is related to 1 percent difference in annual growth rates of gross domestic product (GDP) per capita.⁹ A series of separate tests addresses the issue of whether the effect of quality is causal, a question frequently asked about international growth comparisons. Each test is consistent with a causal interpretation.¹⁰

This quality effect, while possibly sounding small, is actually very large and significant. Because the added growth compounds, it leads to powerful effects on U.S. national income and on societal well-being.

To underscore the importance of quality, it is possible to simulate the effects of alternative reforms of U.S. schools. As a benchmark, consider a policy introduced in 2005 that leads to an improvement of scores of graduates of one-half standard deviation by the end of a decade. This change, labeled a “moderately strong reform,” would be substantial. An improvement of that magnitude would put U.S. student performance closer to that of students in a variety of better-performing European countries, but they still would not be at the top of the world rankings. (It does, however, have a similar lofty goal to that of the governor’s summit in 1989 that set a goal of being first in the world in math and science by 2000—a goal that we did not dent during the 1990s.)

Such a path of improvement would not have an immediately discernible effect on the economy, because new graduates are always a small portion of the labor force, but the impact would mount over time. If past relationships between quality and growth hold, GDP in the United States would end up 4 percent higher by 2025 and 10 percent higher by 2035.

This kind of change may or may not be feasible, but the impact on GDP illustrates the real importance of effective school reform. To give some idea of the range of possible outcomes, figure 6 traces out improvements in the national economy from slower and lesser changes in student outcomes.

Figure 6 uses the goal of a one-half standard deviation improvement in performance but aims to achieve this over different time periods ranging from 10 to 30 years. A 30-year reform plan would still yield a gain to the economy in 2035 of 3 percent.

The summary of this analysis is that improvements in schooling outcomes are likely to have very powerful impacts on individuals (the previously identified effect on earnings) and on the economy as a whole. The impact on the aggregate economy will raise the whole economy over and above the individual differences estimated above.

Local Impacts

The prior estimates all place reform in a national context. The gains are not necessarily the same as those that would accrue to the local and regional economy from school quality improvements.

To be concrete, we noted that Cleveland students fell almost one standard deviation below the nation in math performance. If we could increase performance in Cleveland by the moderately strong reform amounts discussed above (that is, by one-half standard deviation), what would we expect to see?

We would expect to see the students leaving the Cleveland public schools to do better over their lifetimes. Today, we expect them to be hurt by the Cleveland schools, and this reform would bring them closer to the average for the nation.

Part of the gains would undoubtedly come through moving to other areas, implying that the overall impact on the Cleveland and Ohio areas might well be below

that of the nation as a whole. Ohio would have contributed to the nation, but it might not directly capture the higher earnings and productivity, because a portion of earnings growth for individuals comes from seeking out areas where they are the most productive.

Nonetheless, recent work on income and productivity differences across cities argues that educated cities have grown more quickly than comparable cities for more than a century (Glaeser and Saiz 2003). This analysis further suggests that the reason for greater growth is that skilled cities become more productive.

No data currently permit analysis of how quality enters into this, but there is every reason to believe that improved quality will confer gains on metropolitan areas and states. As with early work on cross-country growth differences, this analysis (and the others upon which it builds) focuses entirely on years of schooling as a measure of human capital differences across areas. Yet the arguments behind these empirical findings are ones that emphasize how local economies with more skilled workers can adjust to changing circumstances (see Welch 1970; Schultz 1975). These seem to be attributes that, as the individual earnings models and international growth models confirm, are fostered by more skills as directly measured by achievement.

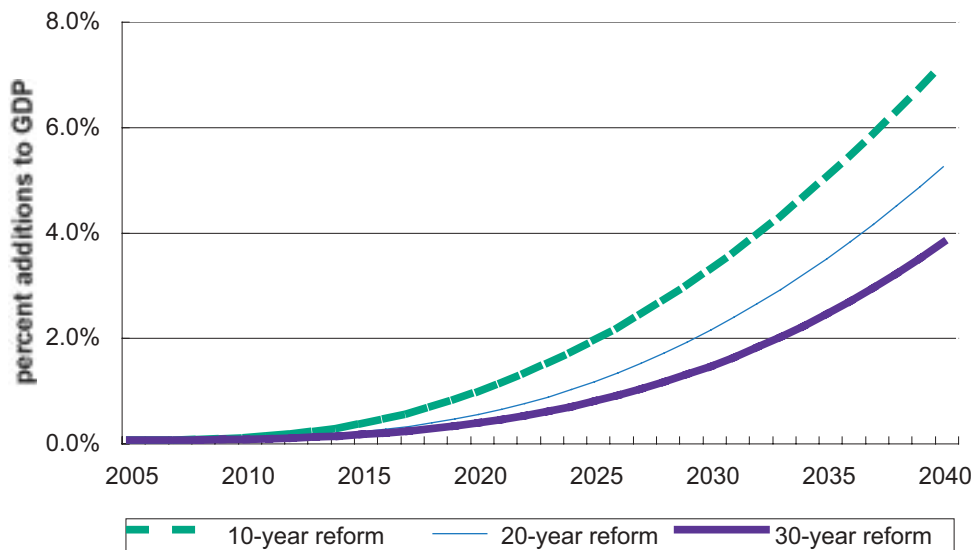
FEASIBLE TEACHER QUALITY POLICIES

The prior analysis has simply projected the benefits of achieving various goals for student achievement. A first question is whether or not achieving such gains could be feasible with realistic reform strategies.

Past reform efforts clearly do not support feasibility. During the two decades since the publication of *A Nation at Risk*, a variety of approaches have been pursued (Peterson 2003). These have involved expanding resources in many directions, including increasing real per pupil spending more than 50 percent. Yet performance has remained unchanged since 1970 when we started obtaining evidence from NAEP (figure 1).

The aggregate picture is consistent with a variety of other studies indicating that resources alone have not yielded any systematic returns in terms of student performance (Hanushek 2003). The character of reform efforts can largely be described as “same operations with greater intensity.” Thus, pupil–teacher ratios and class size have fallen dramatically, teacher experience has increased, and teacher graduate degrees have grown steadily—but these have not translated into higher student achievement. On top of these resources, a wide variety of programs have been introduced with limited aggregate success. The experience of the past several decades

Figure 6. Improved GDP with Moderately Strong Knowledge Improvement



vividly illustrates the importance of true reform, that is, reform that actually improves student achievement.

One explanation for past failure is simply that we have not directed sufficient attention to teacher quality. By many accounts, the quality of teachers is the key element to improving student performance. But the research evidence suggests that many of the policies that have been pursued have not been very productive. Specifically, while the policies may have led to changes in measured aspects of teachers, they have not improved the quality of teachers when identified by student performance.¹¹

Rivkin, Hanushek, and Kain (2005) describe estimates of differences in teacher quality on an output basis. Specifically, the concern is identifying good and bad teachers on the basis of their performance in obtaining gains in student achievement. An important element of that work is distinguishing the effects of teachers from the selection of schools by teachers and students and the matching of teachers and students in the classroom. In particular, highly motivated parents search out schools that they think are good, and they attempt to place their children in classrooms where they think the teacher is particularly able. Teachers follow a similar selection process (Hanushek, Kain, and Rivkin 2004). Thus, from an analytical viewpoint, it is difficult to sort out the quality of the teacher from the quality of the students that she has in her classroom. The analysis of teacher performance goes to great lengths to avoid contamination from any such selection and matching of kids and teachers.¹² In the end, it estimates that the differences in annual achievement growth between an average and a good teacher are at least 0.11 standard deviation of student achievement.¹³

Before going on, it is useful to put this estimate of the variation in quality into perspective. If a student had a good teacher as opposed to an average teacher for five years in a row, the increased learning would be sufficient to close entirely the average gap between a typical low-income student and a student not on free or reduced lunch. The earlier discussion also points to the possibility of closing existing ethnic gaps or of bringing our urban centers, such as Cleveland, up to the levels found in the nation.

A reasonable estimate (which is used throughout the following calculations) is actually that differences in quality are twice the lower bound (0.22 standard deviation.).

This larger estimate reflects likely differences in teacher quality among schools (plus a series of other factors that bias the previously discussed estimate downwards).

These estimates of the importance of teacher quality permit some calculations of what would be required to yield the reforms discussed earlier. To begin with, consider what kinds of teacher policies might yield a 0.5 or a 1.0 standard deviation improvement in student performance. Obviously an infinite number of alternative hiring plans could be used to arrive at any given end point. A particularly simple plan is employed here to illustrate what is required.

Consider a steady improvement plan where the average new hire is maintained at a constant amount better than the average teacher in any given year. For example, the average teacher in the current distribution is found at the 50th percentile. Consider a policy where the average of the new teachers hired is set at the 56th percentile and where future hires continue to be at this percentile each year of the reform period. By maintaining this standard for replacement of all teachers exiting teaching (6.6 percent annually in 1994–95) but retaining all other teachers, this policy would yield a 0.5 standard deviation improvement in student performance after a 20-year period. If, instead, we thought of applying these new standards to all teacher turnover (exits plus the 7.2 percent who change schools), a 0.5 standard deviation improvement in student performance could be achieved in 10 years.

Figure 7 displays the annual hiring improvement that is necessary to achieve a moderately strong (0.5 standard deviation) improvement under a 10-, 20-, and 30-year reform plan and based on applying it to either just those exiting or the higher turnover rates that include transfers. As is obvious, the stringency of the new hiring is greater when there is a shorter reform period and when fewer new (higher-quality) teachers are brought in each year. Achieving such a boost in achievement in 10 years by upgrading just those who exit each year implies hiring at the 61st percentile, but this declines to the 52nd percentile for a 30-year plan where the higher turnover population is subject to these new hiring standards.

These calculations demonstrate the challenge of achieving substantial improvements in achievement. It requires significantly upgrading the quality of the current teacher force.

Several aspects of these scenarios deserve note. First, the improvements that are required apply to the teacher distribution that exists each year. In other words, this standard requires continual improvement in terms of the current teachers. The continual improvement comes from the fact that the distribution of teachers improves each year because of the higher-quality teachers hired in prior years. At the same time, it does not imply that all new teachers reach these levels, only that the average teacher does. There will still be a distribution of teachers in terms of quality.

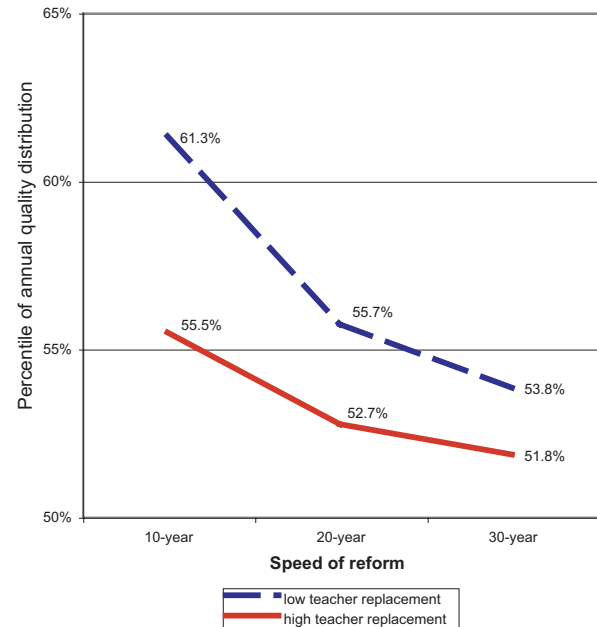
In fact, it is easy to summarize what the distribution of teachers must look like in terms of the current distribution of teachers. In order to achieve a 0.5 standard deviation improvement in student achievement, the average teacher (after full implementation of reform) must be at the 58th percentile of the current distribution. (In order to achieve a 1.0 standard deviation improvement, the average teacher must be at the 65th percentile of the current distribution). The annual adjustments given previously simply translate these quality calculations into the path required for reaching them under different reform periods.

The calculations also freeze many aspects of teaching. They assume no change in teacher turnover. Of course, teacher turnover will be affected by a variety of other policies such as salary policy, tenure, etc.

The calculations also assume that turnover is unrelated to quality—as it largely is with today’s passive teacher management approach. An active selection and teacher retention policy could, however, lead to improvements in overall teacher quality would offer relief from the stringency of hiring standards that are required. For example, a policy that retained the best teachers two years longer and dropped the least effective teachers two years sooner would by itself lead to substantial improvements in the average quality of the teacher force.

The required improvements in the teaching force could also be achieved in other ways, at least conceptually. For example, a new professional development program that boosts the quality of current teachers would accomplish the same purpose. However, any such program must be in addition to the current amount of professional development, including obtaining master’s degrees and completing in-service training, because the existing professional development activities are already reflected in the current quality distributions.

Figure 7. Teacher Quality Hiring Percentiles for Moderately Strong Improvement in Student Achievement



COST CONSIDERATIONS

Analyzing reform policies directly in terms of their costs is not feasible because we know very little about the supply function for teacher quality. While there has been some work on the cost of hiring teachers with different characteristics (such as experience or advanced degrees), these characteristics do not readily translate into teacher quality (Hanushek and Rivkin 2004).

Much of the current discussion of teacher quality is centered on statements about the overall level of salaries. It seems clear that teacher salaries have slipped relative to alternative earnings of college workers, particularly for women (Hanushek and Rivkin 1997, 2004).¹⁴ For a variety of reasons, however, this does not give much policy guidance for the current discussions. In simplest terms, we do not know how teacher quality responds to different levels of salaries (Hanushek and Rivkin 2004). Moreover, policies that simply raise salaries across the board (even if advanced as a way to increase the attractiveness of the profession) would almost certainly slow any reform adjustments, because they would lower teacher turnover and make it more difficult to improve quality through new hiring.

The aggregate growth numbers suggest that the annual growth dividend from an effective reform plan would cover most conceivable program costs over a relatively short period of time. For example, a 10-year reform plan that yielded a one-half standard deviation improvement in student performance would produce an annual reform dividend that more than covered the *entire* expenditure on K–12 education before 2030.¹⁵ Of course, as shown previously, a reform program of this magnitude and speed would require dramatic changes in hiring of new teachers. But a 20-year reform program with a moderately strong improvement would produce a sufficient dividend to cover all K–12 expenditures by 2035.

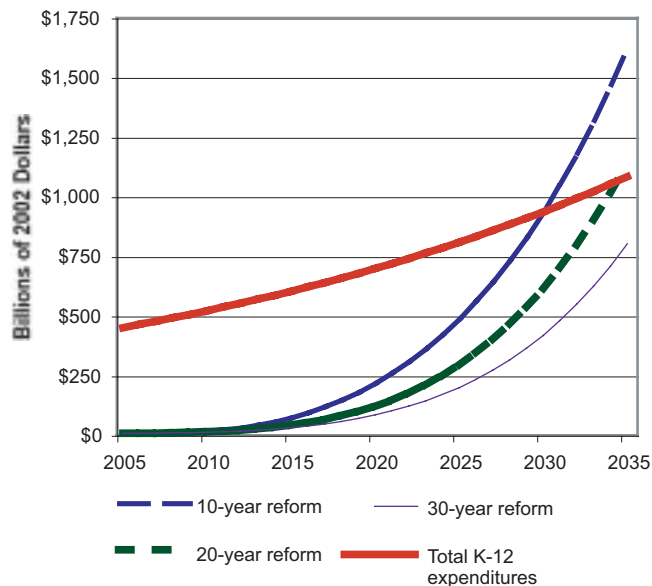
Figure 8 traces out the growth dividend relative to the total education budget for the United States. Educational expenditure for K–12 is calculated to grow at a real 3 percent annually, and the growth dividend of a moderately strong (0.5 standard deviation) reform plan (of varying speed) is plotted against this. This figure shows vividly how true reform (that is, reform that actually yields improvement in student performance) has a cumulative effect on the economy.

The conclusion of the cost considerations is simple. The benefits from quality improvements are very large. Thus, they can support incentive programs that are quite large and expansive *if the programs work*. U.S. schools have in fact expanded in a variety of ways over the past four decades—real expenditures per pupil in 2000 were more than three times those in 1960. It is just that these past programs have not led to significant improvements in student performance. Put another way, the benefits do not justify all types of expenditure. They do justify many conceivable programs if they can be shown to be effective.

CONCLUSIONS

The prior analysis demonstrates that better student outcomes generate considerable benefits. While these benefits have not been previously quantified, the presumption that they exist has surely propelled much of the interest in our schools that has existed at least since the publication of *A Nation at Risk*.

Figure 8. Annual Growth Dividend from Moderately Strong Reform



These findings are particularly relevant to current attention to school outcomes. The federal No Child Left Behind law requires states to institute accountability systems that ensure all students are proficient in core subjects. These accountability systems emphasize measured cognitive skills of just the kind that are shown to have high payoffs in the labor market and for society.¹⁶

Further, there is substantial reason to believe that improvement in local schools will yield direct benefits to local economies. Local economies with a more educated labor force leads, by existing analysis, to higher local growth. Although not explicitly analyzed in existing work, it is plausible to believe that school quality improvements will lead to local economic gains.

A part of the picture, however, that has not received as much attention is what is required to achieve the student outcome gains. This analysis uses available information about the current distribution of teacher quality to sketch out the kinds of changes that would be required for reform programs of differing magnitude and speed. This analysis highlights the fact that reform will require a significant upgrading of the teaching force. It also discusses feasible timing and speed of reform.

The benefit picture indicates that improvements in student performance have truly substantial impacts on individual productivity and earnings and on the growth and performance of the aggregate economy. The economic gains could in fact cover some substantial changes in expenditure on schools.

Past history, however, provides a key caution. The U.S. has devoted substantial attention to its schools. In just the two decades since *A Nation at Risk*, the nation has increased real spending on schools by over 50 percent. But it has gotten little in terms of student outcomes.

We have accumulated considerable experience on things that do not work, but much less on policies that will succeed.

The available evidence does indicate that improvement in the quality of the teacher force is central to any overall improvements. And improving the quality of teachers will almost certainly require a new set of incentives, including selective hiring, retention, and pay.

ENDNOTES

¹A variety of other factors have changed over this long period. Although it is difficult to assess the importance of these changes, little evidence suggests that these changes have had a large impact on the achievement trends (Hanushek 2003).

²The approaches have included looking for circumstances where the amount of schooling is affected by things other than the student's valuation of continuing and considering the income differences among twins (see Card 1999). The various adjustments for ability differences typically make small differences on the estimates of the value of schooling, and Heckman and Vytlacil (2001) argue that it is not possible to separate the effects of ability and schooling.

³Murnane et al. (2000) provide evidence from the High School and Beyond and the National Longitudinal Survey of the High School Class of 1972. Their estimates suggest some variation with males obtaining a 15 percent increase and females a 10 percent increase per standard deviation of test performance. Lazear (2003), relying on a somewhat younger sample from NELS88, provides a single estimate of 12 percent. These estimates are also very close to those in Mulligan (1999), who finds 11 percent for the normalized AFQT score in the NLSY data. By way of comparison, estimates of the value of an additional year of school attainment are typically 7–10 percent.

⁴These present-value calculations assume that the future is discounted at a real 5 percent rate over a working career of 35 years.

⁵Altonji and Pierret (2001) find that the impact of achievement grows with experience because the employer has a chance to observe the performance of workers.

⁶These estimates, as highlighted in figure 4, typically compare workers of different ages at one point in time to obtain an estimate of how earnings will change for any individual. If, however, productivity improvements occur in the economy, these will tend to raise the earnings of individuals over time. Thus, the impact of improvements in student skills are likely to rise over the work life instead of being constant, as portrayed here.

⁷The problems included issues of developing an equivalent test across countries with different school structure, curricula, and language; issues of selectivity of the tested populations; and issues of selectivity of the nations that participated. The first tests did not document or even address these issues in any depth.

⁸The details of the tests and aggregation can be found in Hanushek and Kimko (2000).

⁹The details of this work can be found in Hanushek and Kimko (2000) and Hanushek (2003). Importantly, adding other factors potentially related to growth, including aspects of international trade, private and public investment, and political instability, leaves the effects of labor force quality unchanged.

¹⁰Questions about causality arise in studies of the quantity of schooling because countries that grow and become richer may decide to spend some of their added income on more schooling. The tests in Hanushek and Kimko (2000) involve (1) investigation of international spending differences and test performance; (2) consideration of performance of immigrants in the U.S. using the test score measures; and (3) exclusion of the high-scoring East Asian countries.

¹¹For a review of the existing literature, see Hanushek and Rivkin (2004). This paper describes various attempts to estimate the impact of teacher quality on student achievement.

¹²To do this, it concentrates entirely on differences among teachers within a given school in order to avoid the potential impact of parental choices of schools. Moreover, it employs a strategy that compares grade level performance across different cohorts of students, so that the matching of students to specific teachers in a grade can be circumvented. As such, it is very much a lower-bound estimate on differences in teacher quality.

¹³For this calculation, a teacher at the mean of the quality distribution is compared to a teacher 1.0 standard deviation higher in the quality distribution (84th percentile), labeled a “good teacher.”

¹⁴There is a current debate about how salaries of teachers compare to those in different professions (Podgursky 2003).

¹⁵These calculations assume K–12 expenditures growth of 3 percent (real), implying that the current \$350 billion expenditure would grow the \$777 billion in 2025.

¹⁶Although not the focus of this discussion, there is also evidence that such accountability plans are effective in promoting higher achievement (Hanushek and Raymond 2005).

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Improving Public Education Through Strengthened Local Control

Roger T. Severino and Robert P. Strauss

“Asked whether he was meeting public expectations that he would help close the district’s racial achievement gap, [the superintendent] said school board members had not told him it was a priority.”

—Schaarsmith 2004

Every state legislature implements its constitutional obligation to provide a free, public education through what voters typically view as purely *local* boards of education or municipal councils that are similarly responsible for education.¹ From constitutional and legal perspectives, however, these local school boards are agents of their parent state legislatures and are state, not local, officers.² This agency relationship contrasts with other forms of local governance. For example, city council members are inherently local officers since they direct municipal corporations that serve, in the view of state law and the courts, purely local interests. Because education is typically a constitutional obligation on a state legislature,³ school board directors elected or appointed under state law are inherently *state* public officers. Although school board members are thus considered representatives of the state legislature, they are still accountable to the local electorate since it is fundamental in the United States that the imposition of local school taxes be effected directly or indirectly by an elected, local representative body authorized to levy such taxes and approve expenditures for hiring teachers, textbook purchases, etc.

What these agents of state government accomplish in educating our children has profound implications for our nation’s economic future. It is axiomatic throughout the world that the improvement in human capital through more effective education is the central mechanism to improve standards of living in an increasingly international and competitive economy. That there is widespread national concern that learning outcomes in our public schools are below expectations of parents, students, and state and national political and business leaders is an understatement. While both candidates for the presidency in 2004 promised to direct further federal attention and resources to K–12 education, we know that, historically, the federal ability to improve the

productivity of public education has been limited by the constitutional delegation to the states of authority over matters relating to “the general welfare.”⁴

Beginning in the 1950s, the federal role in public education expanded⁵ through programs of targeted grants for special needs students and federal aid to serve populations of poor K–12 school children. Such federal aid, however, is only a small proportion of total spending for K–12 public education—still less than 8 percent.

The most recent federal legislation, the No Child Left Behind Act (NCLB), obligates the states to heavily monitor student achievement, with the objective that all students perform to high standards by 2010. Schools that fail to achieve this objective risk their districts being required to offer alternative, choice-based schools for students in underperforming schools.⁶ States that do not comply with various aspects of the NCLB may lose various forms of flexibility accorded to a state by the U.S. secretary of education as well as 25 percent of federal funds granted to a state for administration. The presumption is that withdrawal of funds will force the states to pay close attention to what their agents achieve or fail to achieve in terms of improved student learning outcomes.

Whether the threatened withdrawal of state flexibility in the use of federal funds will realistically lead to improved school performance over the next few years remains an important and relatively underdiscussed public policy issue. Even if federal monies were withdrawn from the states, the impact in the aggregate would be relatively minor since, as already noted, such federal monies comprise no more than 8 percent of total spending for K–12 public education.

How local school boards and their school managers respond to the incentives and penalties contained in the federal law will ultimately determine how the latest federal initiative affects state educational policy. While there are many appearances of increased federal and state centralization of authority, some wonder if the lack of federal financial control and the historical tension between state education policymakers and local schools may ultimately frustrate large-scale changes and desired

improvements in student performance. Michael Kirst recently observed,

While the scope of state activity is wide, however, the effectiveness of state influence on local practice often has been questioned. Some think it is quite potent, while others see a “loose coupling” between state policy and local schools that leads to symbolic compliance at the local level. Still others believe that worries about federal dominance of education are greatly exaggerated precisely because NCLB is unlikely to be implemented as intended. (2004, 37)

This past July, the Government Accountability Office issued an interim evaluation of the NCLB and noted that only 28 states had their plans fully approved by the U.S. Department of Education and fully in place, while the remainder were still working out details and negotiating with the department (GAO 2004).

Our purpose is to examine comparatively the responsibilities of local school boards who are the predicate actors in the evolving drama surrounding the NCLB legislation. Our presumption is that because relatively little federal money is involved, it is very unlikely that improved learning, especially for the disadvantaged, will occur because most urban school districts simply do not face effective incentives to improve student learning, and have historically found grave difficulties in implementing changes. The question this paper addresses involves whether or not there are other, more expedient ways to effect improved learning outcomes through changes in the organization of local school governance that would move school governance mechanisms closer to those found governing widely held, publicly traded corporations.

To begin to address this question, the paper builds on an earlier comparative legal analysis of state ethics laws that apply to local boards of education (Kolb and Strauss 1999). The comparative analysis here is refocused by comparing the structure of duties and authority accorded to local school boards to the duties and authorities accorded to directors of publicly traded, for-profit corporations.

The comparative analysis reaches the fundamental conclusion that local boards of education have a great deal of discretion in allocating resources and supervising their management, but a very weak set of duties or responsibilities, especially in relation to student learning

outcomes. The paper then identifies limited but meaningful changes to existing mechanisms contained in state school laws that will plausibly improve student learning without additional expense.⁷

The suggested changes are consistent with state constitutional principles of state and local control over public education, and are consistent with existing collective bargaining agreements and the role of heavily unionized teacher corps in the major unionized states. The changes are also consistent with a continued public education monopoly over fulfillment of state constitutional requirements that legislatures provide free educational services that are “thorough and efficient” to school-age children. That is, expected improved outcomes are not wholly dependent on an initial or widespread introduction of charter schools or school vouchers, as suggested by many economists; rather, they are a series of changes that most would characterize as strengthening purposeful local control of public education can significantly improve educational outcomes by more closely defining the duties of local school boards and thereby creating liabilities for failures to perform such duties. The presumption, then, is that local school boards will begin to behave more consistently and act in the interests of their stakeholders, as their private-sector counterparts do, when allocating school resources and monitoring outcomes.

Another way to characterize the central finding of this paper is to simply assert that the failure of public schools to perform has been and will be the result of failing to obligate those in charge of local schools to perform. Publicly traded corporations maximize profits for their shareholders because the failure to do so creates liability and financial risk for the board and officers of the corporation. There is currently no counterpart in the public education realm.

The paper then addresses the design problem of creating a new system of duties and authority that may reasonably lead to widely desired outcomes for public education. The new mechanism begins with a more meaningful oath of office, and the creation of correlative incentives that will lead local boards of education to conduct their affairs solely in the interest of improving student learning. Moreover, such changes are largely within the reach of any local school board and with little delay. School boards may choose to implement the suggested changes now rather than wait for their parent state legislatures to act. Local school boards can adopt

certain school ordinances that will, through strengthened and refocused obligations on the allocation of school resources, improve student learning outcomes.

The suggested changes involve the establishment of mechanisms that create ethical, fiduciary, and educational performance standards as integral parts of the local control of education that currently do not exist. By implication, they create new liabilities for school board members and senior education leaders. A corollary to the adoption of these changes is the proper compensation and indemnification of school board members and senior education leaders in the same manner found in the governance of for-profit organizations.

This is not a paper about how to mandate or further regulate public education; rather, it is a paper about how to more effectively organize the local incentive structure to ensure that the distribution of learning outcomes shifts positively for everybody. As the reader will discover, this comparative analysis leads to some striking differences, such that common sense requires adjustment in the way interests are organized at the local level for school board directors. The thesis of the paper is that with a revised incentive structure, it is entirely reasonable to expect improved learning outcomes. However, systemic change through tweaks in state school codes/laws is required to enable local school boards to improve educational outcomes.

The paper is organized as follows. Section 2 discusses how publicly traded corporations are typically organized and typically governed under federal and state law. Section 3 describes how public education typically is effected through state law, and discusses the latitude accorded to local boards of education. Section 4 compares and discusses the two schemes—monitoring devices and activities that are observable in the case of school boards, and publicly traded private corporations—and describes remedy mechanisms that each system of governance faces from stakeholders who are dissatisfied with outcomes. Section 5 contains suggested solutions to findings of a determined lack of coherent incentives facing local school board members. Focusing and rationalizing the incentive structure facing local school boards constitutes the strengthening of local control that is the promise of this paper. Section 6 concludes.

SECTION 2: THE DUTIES AND AUTHORITIES OF BOARDS AND OFFICERS OF WIDELY HELD, PUBLICLY TRADED CORPORATIONS⁸

General

Corporations are instrumentalities of state law that were created in the nineteenth century to enable the assemblage of sufficient capital to create large, geographically dispersed infrastructures such as railroads, integrated steel facilities, and telegraph systems. In return for making a stock purchase, investors received partial ownership of the corporation and the prospect of dividends and capital gains on their investments, as well as limited liability for the activities of the company (as contrasted to investments through sole proprietorships or partnerships). Additionally, investors enjoyed new ease in purchasing and selling partial interests in the corporation via the stock market.

Since the purpose of the corporate mechanism was to intermediate between many investors and a single organization, mechanisms were designed to ensure that shareholders' interests were effected by the organization. The basic system that has evolved provides for the supervision of the organization by *directors* who are elected by the investors. State law typically requires annual shareholder meetings. The elected directors typically serve part time,⁹ are paid, meet quarterly, and are responsible for hiring the full-time, day-to-day managers of the corporation. Voting rights of investors are typically proportional to the financial *stakes* or money that investors have at risk in the corporation.¹⁰ State law, federal securities law, and state and federal court decisions govern the relationships between investors, their elected directors, the corporation composed of corporate managers and line employees and who are employed by the corporation, and customers of the corporation. The creation of a corporation occurs within a state and under state incorporation law, and includes a corporate charter that provides for corporate governance.

When shareholders believe the corporate charter is violated through decisions by the board of directors, there is recourse in state courts. Federal supervision of the conduct of corporations followed concerns over undue concentration (antitrust law), protection of shareholder interests from manipulation of stock prices by large shareholders in national stock markets, and the use of misleading or false information to prospective investors. Federal and state law also affects corporate

decision in other areas, for example, in the areas of contracts and commercial relations, product liability and consumer protection, personnel and labor relations, taxation, and the environment. Thus, management decisions running afoul of these standards can give rise to shareholder disputes about boards inadequately monitoring management decision making as well.

Since incorporation is an act specific to the state in which incorporation occurs, there is some variation in state laws governing corporations, case law, and, accordingly, in corporate governance patterns¹¹. As a practical matter, however, most major U.S. and international corporations have chosen to incorporate in Delaware (for a variety of reasons), thus its laws and case law are generally viewed as most informative when describing corporate governance procedures.

Textbook microeconomics presumes that the primary motivating factor in business is profits. The courts have repeatedly affirmed this presumption when shareholders have questioned the conduct of management that strays from this maximand. In 1919, Henry Ford sought to lower the price of Ford automobiles to benefit society, and cut his dividend to finance this. The Ford Motor Company was by then a publicly traded corporation and subject to state securities law. Dodge, a shareholder, disputed the pecuniary wisdom of this act, and the court agreed and ordered Ford to pay the full dividend.¹²

In exercising its combined authority, the corporate board is expected to pursue the profits of the corporation through the exercise of care and loyalty to the corporation. Moreover, a *legal duty* of care and of loyalty backs these expectations. Failure to fulfill these duties subjects the individual director and the board in its entirety to personal liability, which liability insurance may not protect against. When a board decision vis á vis a corporate officer or single board member is made that shareholders take issue with, litigation will center around whether or not the decision reflected honoring the duty of care and/or duty of loyalty. If the issue between shareholders and the board or corporate officer entails board refusal to take corrective action against a corporate officer or board member, then litigation will take the form of a derivative law suit. Thus, the derivative lawsuit is the vehicle by which individual shareholders can bring disputes over the propriety of board inaction on behalf of the corporation as a whole.

The Duty of Care and the Business Judgment Rule

The duty of care positively obligates a director to perform his duties with the diligence a reasonable person in similar circumstances would so perform. These circumstances are expected to vary according to the context in which the decision, action, or nonaction was taken. Whether or not a decision falls within the duty-of-care standard requires an initial analysis of the “business judgment rule.” This rule, in turn, proves a safe haven from liability and litigious second-guessing by interested third parties over every board decision. The basic idea of the business judgment rule is that a decision based on reasonable information and with *some* rationality does not create liability for a director even if the decision turns out badly for the corporation and its shareholders. Under the American Law Institute’s definition,

A director or officer who makes a business judgment in good faith fulfills the duty of care if the director or officer:

- (1) is *not interested* in the subject of the business judgment;
- (2) is *informed* with respect to the subject of the business judgment to the extent the director or officer reasonably believes to be appropriate under the circumstances; and
- (3) *rationaly believes* that the business judgment is in the best interests of the corporation.” (American Law Institute, Principles of Corporate Governance, §4.01[c])

These conditions, in turn, imply (1) a duty to monitor, (2) a duty of inquiry, (3) a duty to make prudent or reasonable decisions on matters that the board is obliged or chooses to act upon, and (4) a duty to employ a reasonable process to make decisions.

Case law indicates that the courts look for a failure to exercise due care as evidenced by boards failing to prudently examine alternatives, and by failing to seek an informed basis for action before making a decision. At the risk of stating the obvious, a decision that cannot be rationally explained is a decision that fails the rationality standard under the business judgment rule. Decisions that are reckless or improvident can fall outside the business judgment rule. The determination of whether a business judgment is informed depends on whether or

not the directors have informed themselves of all material information reasonably available to them. Eisenberg (2000) suggests that the standard for determining whether a board decision is an informed one is one of gross negligence.

The Duty of Loyalty

The pledge that a director will fulfill the duty of loyalty, that is, act solely in the interests of the shareholders in supervising the conduct of the corporation, is violated when the director engages in self-dealing transactions that juxtapose the interests of the director against the interests of the corporation. This fiduciary responsibility is strongest for full-time employees in a position to exercise corporate authority, that is, the officers of the corporation. Self-dealing for a director occurs when a director's personal financial interests conflict with the interests of the corporation. Self-dealing problems can be avoided by disclosure of such conflict prior to the approval of a transaction, and/or by having a majority of disinterested directors or disinterested shareholders pre-approve the transaction after the initial disclosure of a conflict.

The duties of care and loyalty are not entirely separate, and there is case law from Delaware that obligates directors to provide true information to shareholders for consideration prior to important decisions. Thus, the duties of care and loyalty imply a duty to disclose, and failure to disclose fully can create liabilities for the directors.

Standards of Conduct vs. Standards of Review

While the duty of care appears to impose stringent requirements on directors and officers of a corporation, the standards of review are less stringent than the standards of conduct on which they are based (Eisenberg 2000, 545). Eisenberg characterizes the business judgment rule as consisting of four conditions:

- (1) The director must have made a decision. So, for example, a director's failure to make due inquiry, or any other simple failure to take action (as opposed to a deliberative decision not to act) does not qualify for protection under the business judgment rule.
- (2) The director must have informed himself with respect to the business judgment to the extent he reasonably believes appropriate under the circumstances—that is, he must have employed a reasonable decision making process.

- (3) The decision must have been made in good faith—a condition that is not satisfied if, among other things, the director knows that the decision violates the law.

- (4) The director may not have a financial interest in the subject matter of the decision. For example, the business judgment rule is inapplicable to a director's decision to approve the corporation's purchase of his own property.

If the previously mentioned four conditions of the business judgment rule are satisfied, then the quality of the decision that may be reviewed involves the limited standard about whether or not the director acted in good faith, or under the American Law Institute formulation, whether the decision was rational or rationally based. If, on the other hand, the four conditions of the business judgment rule are *not* satisfied, then the standard for review is broader, and entails both rationality *and* fairness.

The market for directors and officers' liability insurance provides a buffer between them and investors, customers, government, and other litigants, since such insurance, when triggered, will pay for the costs of litigation as well as settlements or judgments metered out by the courts. The market for such insurance also provides an additional oversight mechanism beyond investor oversight, since premium costs can be consequential. Further, when insurance carriers view classes of possible decisions and lines of business too risky to insure, corporate directors and officers may find themselves facing enormous personal liabilities which may deter risky decision making.

SECTION 3: PUBLIC SCHOOL BOARDS AND THE CONDUCT OF PUBLIC EDUCATION

General

State laws related to public education provide for the establishment of school boards through the election or appointment of school directors and the assignment of certain duties. Beyond providing for the establishment of the school boards and school districts they govern, state school codes provide for significant state financial support for the provision of school services and supervise the basic educational process via mandatory attendance laws for the students, definitions of minimum curricula, competency standards for employment, tenure, removal of teachers and administrators, and graduation

requirements. Because of significant state financial support to local school districts, budgeting, accounting, and financial reporting standards and independent local audit procedures are specified in state school codes, and state audits of annually generated school financial statements are routine. Because the subjects of public education are largely *minors*, considerable attention in state school codes is devoted to protecting the safety and health of students while they are under the control and supervision of the public schools. Because the employees of school districts are *public* employees, employer–employee relations are governed by separate state laws dealing with public employees on such matters as employment and termination procedures, employee health and retirement benefits, and the right to strike.

Historically, local tax support of public education was limited to only those with children in the public schools; however, in the early twentieth century general tax support of public education became and remains the dominant pattern. Since local tax support of public education is on average no more than 49 percent of total local school spending, school boards are typically dependent on state legislatures to provide annual appropriations, and in some states, both annual operating budgets and periodic bonded indebtedness are subject to referenda.

The issues of authorities and responsibilities of local school boards are complicated by the fact that they are in effect governed by multiple jurisdictions. That is, state legislatures appoint state boards of education (or they are elected), which are authorized to regulate public education and local school boards and their school districts; governors appoint secretaries of education (or they are elected), each of whom can issue policy directives that also affect local school boards and their school districts. In this complex policy environment, however, several things do stand out. State law governs state-level agencies and local school board organization and conduct to the extent that a state chooses to specify policy in these areas. If the state law language, however, is vague or contradictory, state and federal courts will tend to avoid meddling over particular decisions or policies unless state or federal laws or constitutional provisions are being directly appealed to. Federal law and decisions on matters of civil rights and federal funding for poor and special children create jurisdictional “hooks” that plaintiffs turn to. Nonetheless, absent clear violations of state law or policy rules, local school boards are free to interpret their authority with substantial latitude. To the

extent that state law is vague or there is no guidance, the courts have generally allowed local boards to legislate and make rules as they see fit. Areas such as the particulars of school discipline, extracurricular activities, the curricula per se, textbooks, the maximum number of school contact days, and the maximum length of the school day remain within the discretion of local boards of education (Russo 2004).

Duties facing local school board directors under state school codes usually entail the basics of the mechanical production of graduates; state law guides such matters as mandatory attendance, minimum contact days per year (typically 180), minimum classroom contact hours per year (typically 900), transportation, minimum curricula by grade level, health and safety, the hiring, retention, and dismissal of teachers, and correlative matters surrounding collective bargaining rights. Only recently have issues of testing or assessment become matters of state policy, and in most states this is largely due to the aforementioned federal legislation of 2001.

Becoming a School Board Member

The overwhelming majority of local school board positions are filled through regular elections after a period of a few years but may be staggered. Since school districts typically have their own local taxing authority, school board elections are consistent with principles of local control. However, the qualifications for being a school board candidate are by and large identical to the qualifications for any other state elected office. That is, candidates must be residents of the jurisdiction where they seek office, must have domiciled in the district for a statutory period before the election, must be of age, and must be willing to take an oath of office upon election. Such nominal requirements suggest that the duty of vetting school board candidates lies entirely with the electorate. Interestingly, very few states have *candidate* conflict of interest or financial interest disclosure requirements.

A few states have additional requirements. Alabama, for example, mandates that members of the city school board “shall be chosen solely because of their character and fitness.”¹³ Yet it is unclear as to what party is responsible for qualifying candidates under these restrictions or how the assessments are to be made. Possibly the strongest and most effective candidate requirements are found in Oklahoma, which flatly bars any candidate convicted of a felony or misdemeanor embezzlement. Furthermore, no candidate in Oklahoma may be currently employed or have any blood relatives currently

employed in the school district or board. Also, school director candidates in Oklahoma must pledge in writing to “complete at least twelve (12) hours of instruction on education issues, including school finance, Oklahoma education laws, and ethics, duties and responsibilities of district board of education members” shortly after election.¹⁴ Such detailed and stringent candidate qualifications are certainly more the exception than the rule.

Oaths of Office

School board oaths of offices are generally applied through state constitutional provisions covering requirements for all state elected officials. Many oaths of office are creatures of state code, while a small minority is provided for school district officials in particular. A common thread among oaths of office is their generality. The typical oath consists of a vow to¹⁵

- (1) Support the constitution of the United States
- (2) Support the constitution and laws of the officer’s state
- (3) Discharge one’s duties
 - a. faithfully or with fidelity
 - b. to the best of one’s ability
 - c. honestly (some states)
 - d. impartially (some states)

Oaths of office are commonly perceived as perfunctory and purely ministerial—more like a ceremony of initiation than the undertaking of serious duties. The generality of most oaths understandably gives rise to this impression. Still, oaths do serious work, and are especially binding the more specific they are. Courts and legislatures are certainly willing and able to hold state officers to their vows through the initiation and ratification of articles of impeachment.¹⁶

The obligation to support the constitutions of the United States and one’s home state extends to recognizing the jurisdiction of the courts and the laws of the land. It is difficult to interpret more restrictions much beyond that without running into constitutional trouble.¹⁷

To discharge one’s duty “faithfully” or with “fidelity” can arguably bind school board members to always act in the best interest of the school district in all their actions and inactions. That is, they are bound to proactively work to fulfill the school district’s mission. However, courts are loath to interpret affirmative duties

when they are not made statutorily explicit. It is more likely that faithfulness and fidelity merely requires a school board member to refrain from egregious abuses of power that harm the district, such as through embezzlement or other comparable acts.

The requirement to act “to the best of one’s ability” seems to impose a duty of diligence on school board members, yet such clauses suffer from the fatal defect of subjectivity. First, knowing human nature, rarely do people put in their truly *best* efforts over a sustained period of time, particularly in volunteer or low-pay positions, as are typically found in school boards.¹⁸ Moreover, it would be nearly impossible to make such a determination in particular cases, as only the person in question truly knows whether they have acted anywhere near their ability and capacity. A persistent drop in performance may be explained away by an equivalent drop in personal ability. In other words, “I’m doing the best I can” will always be a ready and effective defense as such subjective assessments are difficult to disprove.

An oath of honesty, found in a small number of states, at first glance appears to be subsumed by the oath to fidelity—after all, faithfulness and dishonesty seem incompatible. However, some states have decided to include both clauses in their oaths, thus suggesting a significant distinction. Indeed, a basic canon of statutory construction holds that, as far as possible, legislatures draft statutes without redundancies so to avoid rendering similar sounding clauses meaningless. It would not stretch the imagination to think of undesirable acts that are prevented by one clause and not the other. For example, absent a duty of honesty, a board member may lie to the other board members to influence a board decision if the lie is sincerely done “for the good of the school district.”

An oath of impartiality (also found in a small number of states) seems to target those acts that are inherently biased. But what bias is covered? It is quite possible that official actions motivated by nepotism would fall under such a clause alone, but the fact that most of these states felt required to prohibit nepotism explicitly in the school code suggests otherwise. Financial conflicts of interest may be covered, as that may be one of the few biases stronger than family interests, but we speculate the oaths may have been adopted to prevent invidious discriminatory actions such as discrimination by race or religion and possibly partisanship as well.

Finally, to complicate matters, some oaths explicitly require that officers agree to not have conflicts of interest while serving in office. Such additional requirements are relatively rare and when they do apply, and often apply only to a subset of state officers.

To summarize, most school board oaths are identical to the oaths taken by all state officers and thus very general. A minority of oaths are more restrictive regarding honesty and deal directly or obliquely with conflicts of interest. Of this minority, some consist of more restrictive state oaths that also apply to school boards; some are school-board-specific oaths that are more restrictive than their respective state oaths, while some other school board oaths are actually less restrictive than the general statewide oaths. These findings are compiled in table 1.

The oaths of office listed in table 1 set forth the overarching parameters (or duties) governing how public officials must discharge their specific duties of office. Those specific duties are generally fleshed out in the state ethics codes, election codes, and educational codes in particular. As an illustration, Rhode Island mandates the following duties for school board members:

Rhode Island General Laws § 16-2-9.1

Code of basic management principles and ethical school standards

(a)...The school committee accepts the obligation to operate the public schools in accordance with the fundamental principles and standards of school management, which principles include but are not limited to the following:

- (1) Formulate written policy for the administration of schools to be reviewed regularly and revised as necessary.
- (2) Exercise legislative, policymaking, planning and appraising functions and delegate administrative functions in the operation of schools.
- (3) Recognize their critical responsibility for selecting the superintendent, defining his or her responsibilities, and evaluating his or her performance regularly without directly engaging in administrative processes.
- (4) Accept and encourage a variety of opinions from and communication with all parts of the community.

(5) Make public relevant institutional information in order to promote communication and understanding between the school system and the community.

(6) Act on legislative and policymaking matters only after examining pertinent facts and considering the superintendent's recommendations.

(7) Conduct meetings with planned and published agendas.

(8) Encourage and promote professional growth of school staff so that quality of instruction and support services may continually be improved.

(9) Establish and maintain procedural steps for resolving complaints and criticisms of school affairs.

(10) Act only through public meetings since individual board members have no authority to bind the board.

(11) Recognize that the first and greatest concern must be the educational welfare of the students attending the public schools.

(12) Work with other committee members to establish effective board policies and to delegate authority for the administration of the schools to the superintendent.

(13) Avoid being placed in a position of conflict of interest, and refrain from using the committee position for personal gain.

(14) Attend all regularly scheduled committee meetings as possible, and become informed concerning the issues to be considered at those meetings.

Other states specify the duty to purchase school books, manage district budgeting, hire and fire teachers and support staff, ensure the health and safety of students, prevent racially/sexually discriminatory treatment of students, report attendance records to state authorities as well as many other duties. But interestingly, we have found that no state requires school board members to guarantee that the students under their care leave the education system *actually* and *demonstrably* educated. Rhode Island comes close by requiring that school board members "recognize that the first and greatest¹⁹ concern must be the educational welfare of the students attending the public schools." Yet, through a closer reading, we see that the duty is largely illusory. A duty to "recognize" entails no concrete action once that recognition takes place. One is free to recognize

TABLE 1: STATE OATHS OF OFFICE APPLICABLE TO SCHOOL BOARD MEMBERS

Requirement of Oath of Office	Support Federal Constitution	Support State Constitution	Perform to Best of Ability	Perform Faithfully or with Fidelity	Perform Impartially	Perform Honestly	Avoid Conflicts of Interest
Alabama 1/	Yes	Yes	Yes	Yes	Silent	Yes	Silent
Alaska 2/+ +	Yes	Yes	Yes	Yes	Yes	Yes	Silent
Arizona 1/	Yes	Yes	Yes	Yes	Yes	Silent	Silent
Arkansas 2/+ +	Yes	Yes	Silent	Yes	Silent	Silent	Yes; in contracts
California 1/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Colorado 1/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Connecticut 1/	Silent	Silent	Yes	Yes	Silent	Silent	Silent
DC 1/	Yes	Silent	Silent	Yes	Silent	Silent	Silent
Delaware 2/*	Yes	Yes	Yes	Yes	Yes	Silent	*Silent (general oath forbids all conflicts)
Florida 1/	Yes	Yes	Silent	Silent	Silent	Silent	Silent
Georgia 1/	Yes	Yes	Silent	Silent	Silent	Silent	Silent
Hawaii 1/	Yes	Yes	Yes	Yes	Silent	Silent	Silent
Idaho 1/	Yes	Yes	Yes	Yes	Silent	Silent	Silent
Illinois	Yes	Yes	Yes	Yes	Silent	Silent	Silent
Indiana 2/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Iowa 2/	Yes	Yes	Yes	Yes	Yes	Silent	Silent
Kansas 1/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Kentucky 2/+ + must affirm eligibility for office	Yes	Yes	Silent	Yes	Silent	Silent	Yes; in contracts + hiring
Louisiana 1/	Yes	Yes	Yes	Yes	Yes	Silent	Silent
Maine 1/	Likely No	Yes	Yes	Yes	Silent	Silent	Silent
Maryland 1/	Yes	Yes	Yes & diligently	Yes	Yes & without prejudice	Only for State Treasurer	Only for judges & high officers
Massachusetts 1/	Silent	Yes	Silent	Silent	Silent	Silent	Silent
Michigan 1/	Yes	Yes	Yes	Yes	Silent	Silent	Silent
Minnesota 1/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Mississippi 1/ must affirm eligibility for office	Yes	Yes	Silent	Yes	Silent	Silent	Further research needed
Montana 1/ Constitution allows only one form of oath	Yes	Yes	Silent	Yes	Silent	Silent	Silent

TABLE 1: STATE OATHS OF OFFICE APPLICABLE TO SCHOOL BOARD MEMBERS (CONT.)

Requirement of Oath of Office	Support Federal Constitution	Support State Constitution	Perform to Best of Ability	Perform Faithfully or with Fidelity	Perform Impartially	Perform Honestly	Avoid Conflicts of Interest
Nebraska 1/ for class V districts only	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Nevada 1/	Yes	Yes	“Well”	Yes	Silent	Silent	Silent
New Hampshire 1/	Yes	Yes	Yes	Yes	Yes	Silent	Silent
New Jersey 2/+ +	Silent	Silent	Yes	Yes	Yes & justly	Silent	Silent
New Mexico 1/	Yes	Yes	Yes	Yes	Yes	Silent	Yes; in contracts + official positions
New York 1/	Yes	Yes	Yes	Silent	Silent	Silent	Silent
North Carolina 1/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
North Dakota	Yes	Yes	Yes	Yes	Silent	Silent	Silent
Ohio 2/	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Oklahoma 2/*	Yes	Yes	Yes	Yes	Silent	Silent	Silent (general oath forbids financial conflicts)
Oregon 2/+ + Oaths adopted by each school district	Yes	Yes must, also support policies of the school district	Yes	Yes	Yes	Silent	Silent
Pennsylvania	Yes	Yes	Silent	Yes	Silent	Silent	Silent
Rhode Island 1/	Yes	Yes	Yes	Yes	Yes	Silent	Silent
South Carolina Must affirm eligibility for office	Yes	Yes	Yes	Silent	Silent	Silent	Silent
Tennessee	Silent	Silent	Silent	Yes	Silent	Silent	Silent
Total Yes	36	37	23	35	10	2	3
Total Silent	4	2	16	5	29	37	37
Percent Yes	36/41= 87.80%	37/41= 90.20%	23/41= 56.10%	36/41= 87.80%	10/41= 24.40%	2/41= 4.90%	3/41= 7.30%

* Denotes that the school board oath is less restrictive than the state’s general public officer oaths.

+ + Denotes that the school board oath is more restrictive than the state’s general public officer oaths.

1/ Denotes that the school board oath is governed by or relies exclusively on a state’s general oath.

2/ Denotes that the oath applies specifically to school boards.

Source: Appendix 1 State and Federal Oaths of Office

and then ignore. This choice of loose words is likely not by chance as Rhode Island chose to use much stronger (in terms of binding) terms such as “attend,” “avoid,” “work,” “act,” “encourage and promote,” “establish,” “formulate,” “make,” “exercise,” and “conduct” to specify practically every other duty in the code²⁰

Sovereign Immunity and the Duty of Care and the Standard of Care

Historically, government entities, including school districts, were able to claim immunity from civil actions against them for intentional and nonintentional acts through the assertion of sovereign immunity. The theory of sovereign immunity derives from the notion that governmental authority, because it derives from the people, can do no (recoverable) wrong against the people. Alternatively, it has been asserted that since a local board does not have the authority to commit a tort so that, were it intentionally to do so, it would be acting beyond its legal authority. The courts have been unwilling to recognize the notion of “educational malpractice” (Russo (2004, chap. 4, 7), which has its counterpart in civil negligence suits. Angry parents and disappointed students have not been able to effectively argue that graduation without commensurate skills at basic levels constituted professional negligence on the part of teachers and administrators.²¹

That said, there are numerous exceptions to the safe haven that school districts and their directors have from civil suits that claim negligence. Activities that are classified as *proprietary*, or those actions that are other than governmental or promoting the cause of education in nature, create liability for a school district. Thus, were a school district to lease a facility for an extracurricular activity, and a student was injured at the activity, then the district would be liable for injury claims. If, on the other hand, the injury occurred at a school-owned facility that was constructed and managed in accordance with state guidelines, the district would not be liable for injury claims. Those suffering personal injury due to a failure of a local board can circumvent the assertion of governmental immunity by demonstrating that the district maintained or allowed a public nuisance to occur, although the determination of whether or not a particular hazard was a nuisance has been a difficult matter for the courts to rule on. Whether or not the board’s act of obtaining liability insurance eliminates the safe haven of governmental immunity, which prevents a plaintiff from recovering monetary damages from the district, has been an issue

in a variety of states. Given recent trends in the courts of finding districts liable, risk-averse districts have increasingly taken out liability insurance, even when the act of obtaining such insurance may contradict school code budgeting requirements.

Beginning in the late 1950s, some state courts held districts liable when students were injured while being transported by school buses. Most states positively obligate districts to follow elaborate, state-specified building codes, and some state legislatures have statutorily put school districts on the same basis as private corporations and individuals for broad classes of health and safety matters.²² It is settled law, however, that a legislature can prospectively reestablish nonliability in an area that was affected by a court decision.

School board members are usually not individually liable for the exercise of judgment. However, individual liability flows when the negligent act or failure to act was corrupt or malicious, or when the act was outside the scope of enumerated school board duties. School board members face personal liability for duties that are explicit and ministerial as contrasted with duties involving discretion. The issue with a board decision then typically involves the liability of the *entire* board, and whether or not sovereign immunity is applicable.

School boards often are not themselves liable for injuries to students that occur while the students are under the supervision of employed personnel. Liability may flow, however, to the individual teacher whose actions were inconsistent with state or local policy. And that liability may flow back to the district and board if state law, conditions of an insurance policy or school policy implementing state law requires the active supervision of the errant teacher.²³

When an educator fails to act when there is a statutory duty or regulatory obligation to act, liability may result due to this nonfeasance. When an educator fails to act properly, liability may result as a consequence of malfeasance. Liability may flow to the school board as well if the board fails to monitor dangerous activities that teachers must supervise (athletics are a common problem area), and fail to proscribe rules and guidelines that show reasonable care, then they too may be liable for damages that parents may seek to recover.

Conflict of Interest

Representative democracy assumes that the policy choices of elected representatives (and their motivations) can, and sometimes should, diverge from their constituents.²⁴ However, the very possibility of diverging motivations can lead to a host of undesirable conflicts of interests and outcomes. Widespread corruption in all levels of government sparked the Progressive Era efforts to clean up decidedly *un*representative politics nearly a century ago (Levine 2000). The lessons learned from that era have certainly influenced the many state codes of ethics we have today such that state conflict of interest prohibitions are found in elections codes, ethics codes, government (public officer) codes, education codes and even in constitutionally mandated oaths of office.²⁵

Turning specifically to school boards, we note that conflict-of-interest prohibitions vary widely by kind and character, but some general patterns emerge. First, the prohibited interests are usually categorized as either personal, financial, and/or familial. Second, the prohibitions are typically confined to certain contexts, usually employment and contracting decisions. Finally, the prohibition's enforcement requires either disclosure, abstention from voting, or resignation from office and covers direct or indirect violations. We shall consider each variation in turn.

Personal Interest Prohibitions

Some statutes regulate conflicts in very broad terms. For example, Alabama prohibits a school board member from using "his or her official position or office to obtain personal gain" (Section 36-25-5). Similarly, the Delaware Constitution obligates public officers "to place the public interest above any special or personal interests."²⁶ These restrictions certainly cover the most egregious conflicts—such as bribery in exchange for school board action—but it is unclear how much farther they extend. What if a school board member undertakes an action that results in a personal benefit but was not a quid pro quo? What if a school board member undertakes a conflicted action but sincerely believes he/she is still voting in the best interests of the district?²⁷ These general prohibitions might prevent membership in potentially conflicting organizations such as teachers' unions, book publishers, and overlapping government offices. They also could preclude board members from maintaining their positions while suing their own board, although this prohibition is often made explicit by statute.²⁸

Precedent suggests this broad language may be very powerful, but further research into court explications of these general obligations is needed.²⁹

Financial Interest Prohibitions

The most common and extensively regulated conflict of interest centers squarely on money and its equivalents. This comes as no surprise.³⁰ Bribery, graft, embezzlement, corruption, and self-dealing have accompanied the institution of government from its inception. Government agencies and programs are particularly exposed to theft and abuse because, unlike in the market, returns on investment are notoriously difficult to measure and benchmark. The public school context compounds the problem as it remains largely monopolized and tax financed, thus at relatively greater risk to undetected "leakage" than market-based counterparts.³¹

Legislatures have responded by erecting systematized ethics rules and enforcement apparatuses, coupled with criminal penalties, to ferret out abuses. Embezzlement and bribery—conflicts of interest so obvious they are usually considered just crimes in themselves—are explicitly prohibited for virtually all state elected offices. Softer official malfeasance such as "self-dealing" is often added to the list of prohibited acts, but, it can be much more difficult to spot as it has the air of complying with the law. Montana's public ethics statutes are good illustrations of the multifaceted nature of financial conflict of interests and how they can be addressed.

2-2-121. Rules of conduct for public officers and public employees.

- (1) Proof of commission of any act enumerated in subsection (2) is proof that the actor has breached a public duty.
- (2) A public officer or a public employee may not:
 - a. use public time, facilities, equipment, supplies, personnel, or funds for the officer's or employee's private business purposes;
 - b. engage in a substantial financial transaction for the officer's or employee's private business purposes with a person whom the officer or employee inspects or supervises in the course of official duties;
 - c. assist any person for a fee or other compensation in obtaining a contract, claim, license, or other economic benefit from the officer's or employee's agency;

d. assist any person for a contingent fee in obtaining a contract, claim, license, or other economic benefit from any agency;

e. perform an official act directly and substantially affecting to its economic benefit a business or other undertaking in which the officer or employee either has a substantial financial interest or is engaged as counsel, consultant, representative, or agent; or for evaluating proposals or vendor responsibility, or renders legal advice concerning the contract.

20-1-201. School officers not to act as agents.

The superintendent of public instruction or members of his staff, county superintendent or members of his staff, trustee, or district employee shall not act as an agent or solicitor in the sale or supply of goods or services to a district... Any such person violating this section shall be deemed guilty of a misdemeanor and, if convicted by a court of competent jurisdiction, shall be fined not less than \$50 or more than \$200 and shall be liable to removal from his position.

Familial Interest (Nepotism) Prohibitions

Nepotism is defined as the “bestowal of patronage in consideration of relationship, rather than of merit or of legal claim.”³² It appears that nepotism is a recurring threat to school boards, as it is often singled out and banned in the school board context but not under the states’ more generally applicable ethics guidelines. School boards’ members (by law) work in the same district they live in. Assuming there is some geographic stability to families, this fact alone will tend to concentrate potential nepotism beneficiaries around a school board member’s district. An election in the family of a school board member has the potential of becoming a family full employment act, depending on how one defines family. Statutes vary their antinepotism language widely so that some cover only spouses,³³ others cover immediate family,³⁴ and some cover “any person related or connected by consanguinity within the fourth degree or by affinity within the second degree”³⁵ or an equivalent.

Prohibitions on Interests in Contracts

When it comes to school boards, we have found the most common conflict-of-interest prohibition deals with interests in contracts. Indeed, in about 10 percent of the states such prohibitions are written straight into the oaths of office.³⁶ This is an interesting fact because, as mentioned earlier, financial interests are usually *already* prohibited in other provisions in state law such as under

the state ethics or public officers code. Why the need for overlapping provisions? Most likely, the states have learned through hard experience that because school board officials have broad contractual authority they are relatively more likely to face these particular conflicts. For example, a school board member could, with little trouble, steer a construction or accounting or textbook contract to a business that he or she has an interest in, opening the door to significant abuse. The added specificity removes any potential ambiguity and puts school board members on notice.

Interest in Employment Prohibitions

The final category of prohibitions concerns the filling or holding of government positions by a board member. As illustrations, compare Kentucky, which commands that a board member cannot “in any way influence the hiring or appointment of district employees,”³⁷ and New Jersey, which mandates that no board member “shall [] hold office as mayor or as a member of the governing body of a municipality.”³⁸ As to the latter, the rationale is easy to discern. School boards are designed to be healthily independent of the local executive and might be compromised by board members who wear dual hats. In the words of the National School Boards Association, “in the majority of districts, school boards have taxing authority. That direct oversight—and responsibility—should not be given to politicians whose first priority is something other than education” (NSBA 2003).

As to the ban on influencing the employment decisions of all other persons in the district, the danger is more difficult to see. This might explain why few states have as sweeping a prohibition as Kentucky. Still, one can imagine situations where the persons in charge of setting school policy and budget allocations should be separated from the nitty-gritty of hiring decisions. In other words, the separation limits the temptation of patronage hiring by school board members. For example, school board members in Kentucky are prevented from “rewarding” a political supporter by hiring his son as head custodian of a school.

Scope of Enforcement

Many, but not all, state codes prevent conflict of interests when the interest is either “direct or indirect.” This broad language is necessary to close an otherwise large loophole. If a board member steers a contract to a company in which he is merely a stockholder, he or she would indirectly benefit from a potential rise in stock price or increase in future dividend distributions. While

the money would not go directly into the board member's pocket (at least not immediately), these conflicted actions would be allowed, but for the ban on indirect self-dealing.

"Ban" may be too strong a word, as the states do not enforce prohibitions on conflicts of interest equally. While some states indeed disqualify conflicted members from office, others are not nearly as strict.³⁹ Some states only prohibit voting or deliberating on issue while interested, while others merely require disclosure of interest either before an election or to the board after an election. Finally, some of the conflicts of interest mentioned above are not regulated by school districts at all.

Immunity and Indemnification

Both corporate boards, through their charters and state laws governing immunity, and school boards, under the theory of sovereign immunity, seek to isolate or exempt themselves from various kinds of liability. Federal law and court decisions, however, in both examples can override these safe havens if federal constitutional or statutory assurances are breached because of the supremacy clause in the U.S. Constitution (Russo 2004, chap. 8). Similarly, state courts can encroach upon or abrogate such immunities if state law is silent on a matter, or until state legislatures override a prior court decision reaching that result.

Some state legislatures have enacted caps or limits on set maximum amounts for recovery for various kinds of claims as another way to limit the risk exposure to school districts, and in reaction to the long-run trend in the courts to limit immunity.

School boards may also seek to lay blame on other parties who contribute to the liability that may arise. More recently, states have enabled school districts to apportion negligence among parties so that each carries a comparative burden of the liability. It is common now for students and parents to sign consent forms that indicate that they, rather than the school board and staff, assume the risk of a particular activity.

Corporate boards are typically indemnified from the costs of a wide variety of lawsuits, but there are limits. For example, indemnification is generally not available for fraudulent acts or in the derivative lawsuit context, as such protection from liability is deemed contrary to public policy.

Compensation for School Directors

As a general proposition, school directors are reimbursed for out-of-pocket and travel expenses related to attending board meetings; however, actual compensation is typically quite modest. Of the 41 states reviewed above vis á vis their oaths of office, only 23 allowed their school board directors to take any direct compensation or salary for their work. Given that school directors are state agents, obligating them to impose local taxes to compensate themselves for their time spent on behalf of the local school district is curious. In Maryland, not only are the specifics of oaths of office up to each local district, so too are the compensation schemes. The largest salary we were able to find was \$2,000 per month.

SECTION 4: COMPARISON OF GOVERNANCE OBLIGATIONS FOR CORPORATE AND SCHOOL BOARD DIRECTORS

Selection

Our review of the structure of duties incumbent on directors of publicly traded corporations and local school boards brings to light a number of similarities as well as a number of significant differences.

In both cases there is federal and state interest in the financial oversight of these organizations, and mechanisms have been devised to reflect immediate stakeholders' interests. Thus, both corporate directors and school board directors are elected by their immediate constituents: shareholders or residents of the school district. Voting by shareholders is weighted by the extent of their financial interest in the corporation while voting by taxpayers follows the principal of "one man, one vote." However, besides the fact that shareholders interests are weighted by their economic interests in the corporation, and voters in a school district may or may not be directly taxpayers,⁴⁰ there is the initial disconnect that *children*, who are the immediate subject of education and thereby the immediate beneficiaries of education, are not able to vote for school board directors until they reach age 18. Reaching age 18 typically occurs during the senior year, so the notion of accountability between the school board and their immediate customers is remote. Further, those who are of age and reside in the district, and thereby are eligible to vote in local school board elections, may be far less interested in the activities of the local school district because they currently have no children in the public schools or send their children to nonpublic schools.⁴¹

Another difference between the two forms of election is their frequency. Corporate directors are typically elected annually, whereas school board directors stand for election for staggered terms that are usually four years in duration. This means that accountability in the case of school board directors is much more indirect, and the opportunity to express ones support or lack of policy through the ballot box is so infrequent to make it unlikely.

Perhaps more important than the nature of the electoral differences is the difference in exit strategies available to unhappy stakeholders. A corporate investor who is unhappy about the decisions made by the current board of directors can immediately show his displeasure with the conduct of the corporation by selling his shares in the corporation and investing in another whose prospects are more appealing. Residents in a school district who may be unhappy with the results of the district's educational policies vis á vis their children do not have the same sort of immediate redress. As every parent knows, finding a suitable alternative school requires search, and uncertainty about whether or not the next school will be truly better than the current school. Further, the practicalities of changing residences may also militate against immediate or prompt solutions to perceived educational shortcomings of the current school.

What an investor knows about his corporation's progress in terms of quarterly earnings and dividends, and what a resident knows about his school district's progress, are also very different. While both directors must monitor and disclose systematic information about the financial position of the organization, school board members are not nearly as informed as their corporate counterparts about the educational progress of their students. Moreover, in most states, until very recently school board directors were not required to monitor the educational progress of their students. Even now under the requirements of the NCLB, comparative information about the progress of one's own child in meeting various goals is quite qualitative, and the standards of evaluation are really not comparable from state to state. While statistics on graduation rates and the percentage going on to postsecondary education are collected and disclosed by state agencies, districts do not systematically report on the type of education and employment that their graduates attain so that an interested parent can, on the basis of public information, make an informed location decision. Thus, while monitoring occurs in both

the corporate and school situations, the quality and nature of information is quite disparate.

Assertion and Acceptance of Responsibilities

Corporate responsibilities are positively asserted through governance statutes that set standards of conduct and review, while school board responsibilities are minimal, and particular topics that have arisen are dealt with negatively through prohibitions. However, high standards may be frustrated by the adverse self-selection of candidates for school board office. Since these positions are largely unpaid, some school board members may be tempted to seek monetary compensation in other ways. In fact, in the corporate context, many of the ethical duties of loyalty bind boards of directors *precisely because* they are paid positions. According to standard corporate law interpretation, "corporate officers and agents owe a fiduciary duty to the corporation. The common law standard imposed involves a high degree of honesty, good faith, and diligence *because corporate officers and agents render services for pay*, and are often full-time employees" (Hamilton 1996, 277-78; emphasis added). It is harder to justify imposing these high corporate obligations on public officers when they remain uncompensated. In fact, the imposition of obligations and liabilities pose additional risks that would normally demand additional compensation. After the *Smith v. Van Gorkom* decision in Delaware (488 A. 2d 858 [1985]), which increased corporate liability by weakening the business judgment rule, corporate directors demanded a shield for their personal exposure. One noted commentator recounted the wake of the decision as follows:

Some outside directors began to reassess their decision to be directors, and isolated instances of resignations were reported. The number of lawyers serving on the board of directors of their clients declined. And some people reported that it was becoming increasingly difficult to persuade desirable persons to serve on boards because of the potential risks involved, despite the level of compensation and the availability of indemnification and insurance. The response in Delaware to the decision in *Van Gorkom* was prompt. In 1986, § 102(b)(7) of the Delaware General Corporation Law was amended to authorize corporations to amend their certificates of incorporation to eliminate or limit the personal liability of directors for monetary damages, with certain exceptions. These exceptions are (i) for breach of directors' duty of loyalty to the corporation, (ii) for acts or omissions "not in good faith or which involve intentional misconduct

or knowing violation of law,” and, (iii) for any transaction from which the director derived an improper personal benefit. Thousands of Delaware corporations promptly amended their articles of incorporation to take advantage of this new provision, which was quickly adopted in many other states. (Hamilton 1996, 390–91)

A lack of compensation is likely already having a detrimental effect on local school board recruiting today. A survey conducted by the New York State School Boards Association in 2001 found that almost one-third of all school board candidates in New York ran unopposed. Similarly, the National School Boards Association reports that,

School boards across the nation are finding fewer people are interested in running for the board. School board leaders attribute the dearth of candidates to a variety of factors, ranging from increasing demands on school boards to stronger accountability measures for schools and students. Shrinking school district budgets force board members to make unpopular decisions about closing schools and cutting staff. Some potential candidates are discouraged by the extensive workload, which leaves less time for family and other activities. (Chmelynski 2003)

Under these circumstances compensation seems to be a reasonable predicate to the imposition of additional duties.

Monitoring and Detection Devices in the Private and Public Sectors

Both publicly traded corporations and public schools are monitored by various external auditors to ensure that directors and officials do not abuse their governance positions to the disadvantage of stakeholders, and to ensure that the organizations, overall, are financially transparent. However, whereas publicly traded corporations are subject to substantial federal oversight through federal securities law, and the standardizing influences of a national capital market, the preponderance of monitoring and oversight for public school officials occurs in state capitals, which necessarily implies greater heterogeneity in oversight and subsequent conduct.

Under the duty of care, corporate boards are responsible for maintaining systematic internal controls, and, to remain within the safe harbor of the business judgment rule, must reasonably inform themselves prior to making board decisions. Personal liability for individual board members usually involves questions about loyalty

and engaging in self-dealing. Typically articles of incorporation obligate an interested board member to actively disclose to the entire board potential conflicts ahead of time. Counterpart mechanisms for public school board members involve financial disclosure while a board member, and prohibitions against approving certain kinds of transactions as a board member that might be self-interested. As noted, however, state laws vary substantially in whether indirect self-dealing through a relative, or on behalf of a relation, is effectively precluded. This issue is especially evident during board voting on personnel matters and teacher hires. Even if an interested school board member abstains from a vote on the decision to hire a relative, most state statutes do not prevent quid pro quos from occurring. When we compare the *scope* of self-dealing limitations that govern school board directors vis á vis their private-sector counterparts, we note that it is frequently far more narrow. Recall that prohibitions may be limited to contracts and personnel decisions, and may be silent with respect to the sale and purchase of real property, the issuance of debt, related legal and accounting fees, and so forth.

External stakeholders in the private and public sectors require and obtain reliable, independent audits of the financial position of publicly traded corporations and publicly supported school districts. In both cases, this information provides valuable monitoring information to respective private and public boards, and is used by capital markets and state legislatures to serve their respective interests to monitor the financial positions of the organizations. For current and potential investors, federal securities law requires the annual disclosure of identically prepared and publicly reported financial information in compliance with Regulation 10-K. This public disclosure helps corporate directors maintain their fiduciary relationship to the capital market. Overall, school districts finance through taxes and fees 42.8 percent of total K–12 spending. Federal aid totals 7.8 percent and state aid 49.4 percent.⁴² Accordingly, the federal government, through the U.S. Department of Education, promulgates standard financial classification and accounting rules for public school districts. The states obligate their delegated agents, local school boards, to not only maintain their books and records in accordance with federal and state strictures, but also require local independent audits that are confirmed by state audits as well. It should be emphasized that in both cases, the monitoring and independent information involves the *financial* position of the corporation or school district.

Until the enactment of No Child Left Behind in January 2002, the federal government did not require each state, as a condition of receiving federal aid, to assess students in its public schools with federally approved standardized tests. Section 1111 of the NCLB requires states, through the required state plans, to devise a statewide system of assessment that must be approved by the federal government prior to the state receiving federal monies to implement the law. Even so, the required system of assessments is phased in over a period of time.

Of course, measuring the academic progress of all children in public education is in many respects more difficult than measuring the profitability of a publicly traded corporation. While both activities are subject to systematic measurement, measuring profitability is a far less controversial undertaking than measuring the learning of children of different ages. This difference no doubt reflects the lack of agreement on what constitutes adequate yearly progress of students in reading, mathematics, and so forth.

Sanctions for Conflicts of Interest

Regular elections are seen as the ultimate antidote for unethical board members, both in the corporate and public contexts, but this assumes every misbehaving board member can be caught and thrown out of office. Since unethical board members are quite easily able to hide malfeasance for a time (and sometimes forever) stronger deterrents are needed. Personal liability for unethical board members, in some form or another, is required.

But, as we have seen, conflict-of-interest governance differs greatly when comparing boards for publicly traded companies and boards for public school districts (as well as differing greatly among school districts). Some state school codes at first glance seem to exceed the duty of loyalty in the corporate sector through bans on conflicted persons from running for office or continuing to hold office. However, these limits are typically narrow and include exceptions. In any event, these somewhat diluted “total” bans are only found in a few states.

More commonly, school board members are typically prohibited from voting on self-interested matters, which appears to closely parallel the corporate duty of loyalty. However, upon closer inspection, significant differences do emerge and revolve around the issue of scope. To begin with, school board prohibitions typically focus on contracts and are not always exhaustive at that.⁴³

Moreover, if there is adequate disclosure or if a contract is subject to an open public bidding process, interested board members are in some states allowed to actually vote on the contract. This latter practice differs from the corporate norm where a majority of *disinterested* directors are required to approve transactions after a conflict is disclosed.

The scope of prohibited interests is further narrowed in those states that do not cover both direct and indirect interests. Whereas the duty of loyalty in the corporate context has been interpreted broadly, states that do not prohibit indirect interests open a wide door to abuse. Creative accounting and the help of seemingly disinterested accomplices can make many direct conflicts look rather indirect indeed.

The mechanism for remedying violations is probably the single largest area of difference between the corporate board and school board ethics regimes. Once an undisclosed, executed, conflicted contract is discovered, school districts often handle the matter through state ethics commissions. Corporate malfeasance is typically handled directly through the courts. Board members may bring civil actions on behalf of the corporation against conflicted board members in order to “unwind” interested contracts. Similar unwinding is available in the school board context, but is typically initiated through ethics commissions and such claims may be time barred⁴⁴ or limited only to the profits or commissions arising from the contract.⁴⁵

But what if a school board or an ethics board fails to pursue ethics complaints against a school board member? In the corporate context, individual shareholders may file derivative lawsuits, that is, suits on behalf of the corporation in the face of board of directors’ inaction.⁴⁶ Moreover, the costs of instigating such lawsuits are reimbursable by the corporation if the plaintiffs prevail. It is unlikely that any comparable mechanism exists for ordinary citizens desiring to hold school board members accountable in the public school context.⁴⁷

While school board ethics mechanisms may not be as robust as the corporate board counterpart, the state laws do have one clear advantage. Since state ethics transgressions are usually categorized as misdemeanors, fines and even short-term incarceration are punishment options. This compares favorably to the corporate context, where prison time is typically not available outside of stock insider trading, embezzlement, and fraud.

Further research is needed to uncover just how often prison time has been meted out in school board conflict-of-interest cases, but we suspect such prosecutions are rare. The single largest factor contributing to this result is likely the strict requirement of *mens rea*, or criminal intent. School board members must *knowingly* violate the conflict-of-interest prohibitions before facing criminal sanctions, and ignorance of the law is for once a good defense. A strengthening of oaths of office to include a vow to avoid (or disclose) conflicts of interest will serve to put board members on notice as to their positive obligations and erase many ignorance defenses.

SECTION 5: IMPROVING PUBLIC SCHOOLS THROUGH STRENGTHENED LOCAL CONTROL

General

School board directors' responsibilities contrast starkly with their publicly traded corporate counterparts. While the former are typically obligated to merely uphold the federal and state constitutions, the latter must demonstrate a standard of care that depends on principles of prudence and ordinary judgment. Even though there is widespread concern about the state of public education in our urban schools, national and state pressures for improved performance remain, in our judgment, essentially unheeded. What we observe when we look closely at the obligations public school board directors must honor is that they are vague and, in many respects, unmeasurable. The question we address here is what sort of modifications to the oaths of office and ethical supervision that school board members may be subjected to could materially change what they do? Several immediate points are worth making.

First, if public policy were to impose new obligations and liabilities on school board members, it is important to accompany these new responsibilities with an incentive structure that is self-reinforcing. As noted earlier, in most states, school board members are essentially volunteers who devote far more time than their corporate counterparts on a monthly basis. Eisenberg estimates that directors of large, publicly traded corporations devote no more than 150 hours per year to their typically well-compensated jobs, while Hess⁴⁸ reports that, overall, public school board directors devote between 130 and 600 hours per year of their typically volunteer time. Additionally, school districts should indemnify the costs of successful litigation defenses and in limited circumstances may even cover losses, but not for any breaches of loyalty, fraud, or cases of gross negligence.

Second, while corporate directors and managers are obligated under the *Ford* decision to maximize shareholder wealth, the primary objective of school directors is vague. The terms "education" or "public education" are typically not defined in state school codes. Obligations of school directors are more often defined in terms of prohibitions to avoid accusations of negligence than in positive assertions of what they are supposed to be paying attention to. In economic terminology, school boards should be clearly obligated to maximize one outcome, just as their private-sector counterparts are. In our view, the primary focus of local education should be improving the learning of each child in relation to their capacity. "Learning" is more concrete than "educating" and carries with it the common sense notion of acquiring knowledge and skills that entail

- Study of English through spelling and the rules of grammatical construction, writing, and the appreciation of literature
- Study of American and world history, social studies, and civics
- Study of mathematics
- Study of science (botany, biology, chemistry, and physics)
- Study of music and the arts.

Third, our review of states' related statutes and practices with respect to the counterpart *duties* indicates that they are scattered among various statutory provisions—sometimes in state ethics codes, sometimes in provisions affecting all government officials, and sometimes in school codes per se. We see merit in developing not only a prototype oath of office that would parallel the above-described duties of care, but also incorporate a duty of loyalty and the corresponding business judgment rules that would provide a safe haven for school directors from frivolous petitions and litigation.

Fourth, we take it as a given that any oath of office obligates school directors to positively affirm their support for the federal and state constitutions. Finally, we also take as a given that school board directors should be amply compensated for their time and affirmation not to engage in self-dealing, and that there is merit in their salaries being paid out of state monies in recognition of their agency relationship with their parent legislature. Our suggested language in these areas follows.

A Suggested Board Director Oath of Office

The following oath emphasizes the idea that *learning* is the primary objective of public education, and that both board members and senior education leaders⁴⁹ would affirm it:

“I [name], a duly elected or appointed school board director or senior education leader, do solemnly swear:

To support the constitution of the United States and to support the constitution and laws of this state,

To allocate school resources and effect educational policy solely for the purpose of ensuring that each student learns to his or her intellectual capacity, and

To discharge these duties loyally, honestly, impartially, and with diligence and care, so help me God.”

This suggested oath of office achieves *focus* by requiring that learning to capacity be the standard against which board decisions should be evaluated. Note, too, that the affirmation is for each student, and is not a promise to be evaluated against a standard of *average* or representative student learning vis á vis *average* or representative capacity. The suggested standard also has an implied egalitarian premise to it that might indirectly impact current limitations on student participation in various after school activities. Further, since board members, superintendents, assistant superintendents, principals, and assistant principals would affirm the objective of student learning as their purpose and point of focus, any shirking that might have existed before would be eliminated by the implied liability in taking this oath of office.

This affirmation would significantly clarify many educational issues that now get muddled in discussions about what constitutes a properly educated person. For example, it is likely that participation in music of various types (choral, instrumental) is not universal in most school districts. Were a board to conclude that participating in learning about music is valuable, it would have to at least offer, if not require, that such experiences be available or required for each child. Otherwise, the oath would not be fulfilled since it references *each child* as the subject of the oath.

Consider how this oath might impact a budget decision on, say, the choice between updating history books in the middle schools in a district, compared to putting Astroturf on the football field. Both would involve the allocation of considerable resources, and under the suggested oath of office the board would have to evaluate the purchase of new textbooks and updating a football field against the standard of improving student learning. It would seem likely that the textbooks might be more favored under this oath of office as contrasted with the sort of guidance that boards currently face from their state board of education. It seems far less likely that boards could conclude that updating the football field would ensure students would learn to their intellectual capacity, and would find the argument for investing in modern textbooks to be quite compelling vis á vis learning.

Note, too, that the proposed oath contemplates not only the expenditure of resources, but the broader regulatory activities of *education policy*. Again, the oath focuses the decisions to favor those policies that will more likely ensure student learning. Thus, when choosing a new textbook, both those recommending texts (the educators) and those deciding which to adopt (the board) will have to consider which texts will improve student learning the most. In doing so they will have access to the safe haven of the proposed school judgment rule (see below), but only if they make the decision in a specific manner.

Finally, the proposed oath links substantive board member obligations with both a duty of loyalty and a duty of diligence and care. This *objective* duty of care replaces the similar in intent, but practically ineffectual, *subjective* “best of my ability” standard found in most state oaths. One state, Maryland, already supplements its subjective test with an objective one, and more will hopefully follow.⁵⁰ Likewise, a duty-of-loyalty standard in oaths of office is not novel. Delaware’s constitution mandates that all public officers swear to “always to place the public interest above any special or personal interests” in discharging their duties. It appears that this constitutional amendment of 1987 is a direct importation of Delaware’s well-developed corporate governance standards. Our suggested amendments would merely apply Delaware’s loyalty standard for public officers to school boards in other states.⁵¹

A Suggested School Board Director Affirmation of Duty of Loyalty

As noted in the review of state ethics laws, state limitations on conflicts of interest are an amalgam of direct limitations, open procedures, and disclosure. The amendments to the oaths of office outlined above must be supplemented by clear statutory elaboration (and if need be, court interpretation). Newly elected school board members should, as much as possible know, what they are binding themselves to. In 18 U.S.C. Sec. 201, a high federal standard defines what constitutes bribery, graft, and conflict of interest for various federal officials, and would appear to deter most, if not all, of the objectionable or questionable school director conflicts.

Consider the following reworking of 18 U.S.C. 201 as a predicate statutory requirement for receiving state education monies:

Any school board director or person selected to be a public school board director who, directly or indirectly, corruptly demands, seeks, receives, accepts, or agrees to receive or accept anything of value personally or for any other person or entity, in return for:

- (a) being influenced in the performance of any official act;
- (b) being influenced to commit or aid in committing, or to collude in, or allow, any fraud, or make opportunity for the commission of any fraud on the state; or
- (c) being induced to do or omit to do any act in violation of the official duty of such official or person;

Or whose deliberate actions place personal interests in conflict with the director's duty to the school district and fails to fully and fairly disclose such conflict before a public school board meeting;

Shall be fined under state law not more than three times the monetary equivalent of the thing of value, or imprisoned for not more than fifteen years, or both, depending on the severity of the violation and may be disqualified from holding any office of honor, trust, or profit in the state.

The proposed duty of loyalty for school directors, based on federal law and corporate governance principles, is far more inclusive than the state statutes we have

reviewed and includes both substantial monetary penalties for its violation and holds forth the additional possibility of substantial incarceration. Note that both direct and indirect corruption of any sort is covered, and the personal receipt of anything of value constitutes a violation of this duty of loyalty and is not limited, as we saw earlier, to contracts or the hiring of school personnel.

Liability insurance, if available, constitutes a buffer solution (though imperfect) for corrupt board members because the insurance companies have a significant incentive to monitor and correct any situations that pose undue financial risk to them. As stated earlier, indemnification would not be available for knowing breaches of the duty of loyalty.

A Business Judgment Rule for School Board Directors

We next rework the American Law Institute business judgment rule for our prototype governance environment for school directors. Recall that the intention of fulfilling these conditions is to provide a *safe haven* for school directors from frivolous actions or litigation by aggrieved parents and taxpayers in the district. We suggest:

A school director or senior education official who makes a school judgment in good faith fulfills the duty of care if the school director or senior education official:

- (i) is *not interested* in the subject of the school judgment;
- (ii) is independently *informed* with respect to the subject of the school judgment to the extent the school director or senior education official reasonably believes to be appropriate under the circumstances; and
- (iii) rationally believes that the school judgment is in the best interests of the school district in ensuring that each student learns to his or her intellectual capacity.

These conditions, as in the case of the director of a publicly traded corporation, then, imply (or could be explicitly stated in an ordinance or state law):

- a. a duty to monitor
- b. a duty of inquiry

- c. a duty to make prudent or reasonable decisions on matters that the school board or senior education official is obliged or chooses to act upon
- d. a duty to employ a reasonable process to make such decisions.

Because both school board directors and senior school managers are covered by this obligation, it follows that the superintendent quoted at the outset of this paper, who defended himself in the face of very large racial achievement gaps by arguing that his school board had not made closing the racial achievement a priority, would no longer have a place to hide. Similarly, any school principal who, as a consequence of falling within the definition of a senior education official, failed to be informed of student learning shortfalls in her building, would not be able to defend herself by being within the school judgment rule, and thereby would face liability. Further, as a consequence of the determination of such large racial achievement gaps, there would be a breach of the underlying oath of office that affirms that school decisions are to be solely taken to ensure that each student learns to his or her intellectual capacity, and the prospect of liability for that breach would become quite real and meaningful.

Good management entails constant monitoring and the use of information to make decisions. The combined effect of the proposed oath of office and the proposed school judgment rule would be to obligate school level managers to pay close attention to student progress, and the activities of their teachers and related staff that impact on such progress. The construction of this type of governance mechanism implicitly places responsibility on the chain of management command between the superintendent down to the school teacher for assuring student progress on what happens with each student in the classroom and the student's teacher.

The qualification that the school director or senior school official be *independently* informed deserves comment and explanation. When a teacher engages in grade inflation, that is, assigning high grades to all students without regard to performance at a high standard of demonstrated learning, the teacher's supervisors (principal, superintendent) will be unaware that actual learning is not taking place. Similarly, remarks are in order for social promotion. The notion of independent monitoring means that whether or not learning is taking

place is the result of a disinterested party doing the evaluation of that learning. The teacher, because she is presumed to be initially responsible for the learning of students, cannot be viewed as independent in informing her supervisor that the learning in fact took place. Just as quality control in the production of a wide range of services entails a third-party examination of customer satisfaction and comparison against a standard, independent monitoring in schools would require a third-party examination of whether learning to capacity was actually taking place. This might be accomplished by the school board creating their own independent learning-audit capability, the development of external learning-evaluation services, and/or the use of various kinds of standardized learning-evaluation procedures. Having teachers anonymously grade each other's students' work might be a simple way for school managers to begin to obtain independent information about the extent of learning; however, the standard of evaluation, and ultimately the underlying curricula to be covered, would become matters of discussion and policy.

Parental and Taxpayer Standing and Derivative Lawsuits Against School Board Directors

When a student fails to learn to his or her capacity, the question arises as to who is the aggrieved party, and who has standing to argue that responsibility for this shortfall lies with school board and senior education officials. When there are positive acts that lead to such learning shortfalls, for instance, the reliance on "whole English" as a method of teaching spelling and writing that many believe demonstrably leads to poor spelling and writing skills, then the liability can become real when monitoring demonstrates that the choice of using "whole English" curricula is responsible for these poor skills. However, there remain two thorny problems: First, who in this new governance framework should have standing to bring pressure on school board to correct its errant decision in a court of law? Second, what recourse should there be for learning shortfalls that reflect the failure to act?

In the corporate arena, when a board of directors acts contrary to shareholder interests and in violation of their duties, the stakeholders are allowed to sue the board derivatively in the name of the corporation (and be reimbursed by the corporation for a winning effort). Since the model oath of office ties school board duties to the mandate of ensuring students learn to their intellectual capacities, the stakeholders, that is, the persons most likely to gain or lose from board actions, are the

individual students. Thus, when school board members act contrary to student learning interests and in violation of their duties, the students should be allowed to sue the board derivatively in the name of the school district, and likewise be reimbursed for prevailing efforts. Of course, as minors, the students' interests would be best protected and represented by their parents. In urban districts, however, children are statistically more at risk of not having natural parents but may have a guardian or foster parent who is in charge of their well-being. This suggests at a minimum that standing to bring action against a school board be granted to not only natural parents but to foster parents and guardians of each child.

There are other parties highly interested in the efficacy of public education that merit consideration: taxpayers and residents. Surely those who contribute to defraying the costs of local public education have an interest in the outcomes of such spending. Similarly, those who reside in a district and are of voting age can participate in the election of school board directors, thereby creating a correlative interest in the decisions and actions of school board members. However, there is still a risk of waste and deadweight loss if school derivative lawsuits are abused. This risk exists despite the fact that judges would summarily dismiss frivolous lawsuits, the school judgment rule would protect diligent and good faith school board decisions, and school districts would be expected to indemnify board members that prevail in court. Reasonably prudent school board members should not be expected to constantly deal with lawsuits, otherwise there will be few qualified candidates left applying for the job. This risk can be mitigated by granting standing only to a limited set of stakeholders. However, the risk of waste and annoyance must be balanced against the salutary effects of widening the universe of standing, that is, against the benefits of having more eyes holding school boards accountable in this new system of governance.

Some Implications of an Important School Board Decision: Hiring Teachers

Several years ago, in conjunction with the reform of teacher certification requirements in Pennsylvania, the second author of this paper undertook a major empirical study of school board hiring practices for the Pennsylvania State Board of Education⁵² and found that half of Pennsylvania's school districts did *not* have written hiring policies, and that in an average district 40 percent of the district's teachers had attended that district's high school. Moreover, various measures of

student achievement were inversely related to this measure of hiring insularity or possible nepotism.

Could a school board operating in this new governance environment openly or covertly engage in nepotism vis á vis the hiring of a new teacher? We think not.

The proposed duty of loyalty strictly prohibits deliberate actions that place personal interests in conflict with the director's duty to the school district. Setting aside a teaching job for a family member would obviously violate the duty of loyalty as outlined above, as it would place personal interests above student learning. Moreover, this duty will be buttressed by oaths taken by individual board members.

Would the new governance environment obligate the school board to hire the most academically qualified teacher candidates? Were the oath of office to require merely that students be educated to their intellectual capacity, there might be some room for interpretation on this issue, as education focuses on inputs. However, moving from education to "learning" outcomes would seem to more strongly imply that the teacher herself must be learned in order to impart learning to her students. Again, we suggest that the new governance environment would move the school board to focus on what teachers themselves know, once they become convinced that what teachers know positively impacts student learning outcomes. Certainly, the implied duty to monitor that derives from the suggested school judgment rule would encourage school boards to pay close attention to the linkage between the school inputs they control and student learning outcomes, which they would now be responsible for. Educational researchers likely would find greater interest in these matters than has been the case historically.

Implementation Issues and the Matter of Dillon's Law

While we believe we have provided a coherent argument for moving school governance much closer to the model that applies to widely held, publicly traded corporations, the idea may be so novel for those in public education that objections related to their practicality, feasibility, and undue risk may be expected to arise in defense of the status quo. While the analogy we argue is appealing, we can not demonstrate any firm empirical evidence in support of a new model of governance that conclusively demonstrates that student learning will improve. Of course, our analysis and comparisons do

highlight the ambiguous circumstances under which school board directors currently govern. Several points should be made to bulwark the adoption of such an approach. First, we believe that the new governance structure is far more transparent than the current situation in most states, and as transparency becomes appreciated by school board members, it should actually *reduce* risk and liability, and thereby insurance costs. Second, even though our model is more severe in prohibiting and sanctioning corrupt conduct, it is not that much more demanding than current school law in providing school boards a safe haven. What is different, however, is that under our model of school governance, the safe haven occurs in diligently monitoring student learning and requiring that decisions be informed and reasonable. Further, the oath of office in effect states that no child will be left behind as a matter of school board policy. Moreover, the standard to be measured against is what each student is capable of.

We thus find state enactment of this new model of school governance to be meritorious and within the purview of state authority in the area of public education. It is possible, perhaps even likely, however, that existing interest groups such as associations of superintendents and principals and teachers unions will find offense in the enactment statewide of these new obligations on school board directors. They would correctly perceive that more focused and vigilant school boards would more closely monitor their activities and insist on changes in process and conduct that would ensure that they could honor their oaths of office. Further, senior education officials might balk at having to swear, along with school board members, that they would act solely to ensure that each student learns to his or her intellectual capacity. Public discussion of such a perspective would, in our view, be healthy, for it would identify current impediments to improving student learning.

The question remains, however, whether or not any school board, without state enabling legislation, could obligate itself to follow this new form of governance. There is already precedent in five states⁵³ for making local school board oaths of office stricter than those applying to other public officers⁵⁴ These states do not seem, however, to require duties of loyalty and care as precise as those suggested above. Thus, local districts in states that wish to pursue our proposed governance model would need to fully incorporate our suggested standards in their oaths of office and ethics ordinances. Given the latitude accorded to states to tighten their

oaths of office, there seems to be no impediment for districts to implement the proposed amendments.⁵⁵

It is our view that any politically independent local school district could do likewise, since school districts, as contrasted with a municipal corporation, are instrumentalities of state government, and far more like home-rule communities than the form of government that Judge John Dillon sought to regulate in *Clark v. City of Des Moines* (1865).⁵⁶ Recall that under Dillon's rule, municipal corporations may not exercise *any* power unless expressly granted in words by the legislature. However, as Richardson points out, only five states still rigidly follow Dillon's rule even for *municipal* corporations (Richardson 2000, 20).

SECTION 6: SUMMARY AND CONCLUSIONS

The purpose of this paper was to compare and contrast governance procedures in widely held, publicly traded corporations and public school districts. Based on a close reading of public oaths of office and ethics statutes in 43 states and the typical provisions of corporation law, we observe wide differences in the nature and detail of governance structures. While both organizations entail elected directors, the duties and standards of evaluation for directors of widely held, publicly traded corporations are more extensive and transparent than those facing elected or appointed school directors.

To recap a few findings from our extensive review of state oaths governing school board directors' conduct, only 4.9 percent of the states positively obligate directors to perform honestly; about half require that board directors perform to the best of their ability; only a quarter require that school directors perform impartially; and, remarkably, only 7.3 percent (three of 41 states) require that school directors avoid conflicts of interest.

We think that obligating school officers to positively affirm that they will allocate resources and effect policy *solely* for the purpose of ensuring that each student learns to his or her intellectual capacity directs attention to what students, parents, and taxpayers expect from public education in the twenty-first century.

While some may find this new set of responsibilities possibly far too risky to undertake, we couple these suggested obligations with an explicit safe haven from frivolous litigation that flows from a positively stated school director business judgment rule. This safe haven shields

all school directors that monitor and remain informed and that exercise reasonable judgment. Additionally, school districts would indemnify all school board members that prevail in court.

It is reasonable to expect that school boards that adopt such governance procedures will not only pay more attention to what their students accomplish by way of learning, it will require superintendents and their managers to pay more attention to what is going on in the classroom. It will obligate them to be far more certain that any direction or redirection of resources and school policy actually improves student learning. For example, this standard could readily lead to explicit discussions about whether the prudent course of action is to raise all teacher salaries or only those whose students are learning—particularly when collective bargaining agreements are under negotiation. Moreover, the governance procedures would likely encourage school principals to monitor and intervene when some teachers' students are systematically doing better or systematically doing worse in terms of learning to their intellectual capacities.

While our first preference would be for states to enact new oaths of office that reflect meaningful obligations supplemented by a much more stringent duty of care and loyalty ordinances than can be found in current state law, we recognize that there may be substantial

political resistance to such innovations. Yet, such legislation seems well within the discretion that local school boards currently have available to them, and we hope that some will venture forth with this new governance model and its higher standards.

As these proposed amendments are adopted, changes in student learning and school organization should appreciably reflect the greater interest and focus on learning outcomes that such rules will likely generate. Where in the five states mentioned above that have adopted more stringent oaths of office, there may already be measurable results of such natural experimentation to compile and compare. Certainly, the impact of school governance on student learning is worthy of further research.

ACKNOWLEDGMENTS

The authors wish to thank Mrs. Carrie Severino for her assistance in reviewing state statutes governing the appointment, oaths of office, and ethics and budgeting statutes that pertain to school board directors. The findings and views of this paper are the sole responsibility of the authors and do not reflect those of the Federal Reserve Bank of Cleveland, the Becket Fund, Carnegie Mellon University or its board of trustees.

ENDNOTES

¹The Governments Division of the U.S. Bureau of the Census (2002) identifies 13,726 school districts that are created to provide public elementary, secondary, and/or higher education and have sufficient administrative and fiscal autonomy to qualify as independent governments, and 1,508 municipal entities that provide these public education services. Thirty-one states organize public education through entirely independent school districts, 15 states contain both dependent and independent school districts, and four other states and the District of Columbia organize public education entirely on the basis of political dependent systems.

²This is settled nineteenth-century law (Russo 2004, 139).

³The usual constitutional requirement is for the legislature to provide for a “thorough and efficient” education for the children of the state.

⁴Periodically, Congress has sought to expand the federal role in local public education. However, as Kirst (2004) points out, between 1862 and 1963 Congress considered and rejected 36 times unrestricted federal aid to school districts.

⁵This was done first because of concerns over equality of access to public education for students of color, and subsequently for special needs students.

⁶See Section 1116()(1)(E)(i) of the No Child Left Behind Act of 2001, Public Law 107-110 of the 102nd Congress, signed by President Bush on January 8, 2002.

⁷The ideas presented below are a synthesis and amplification of those found in Kolb and Strauss (1999) and Strauss (1999).

⁸There is, of course, a wide variety of corporate forms. However, for the purposes of drawing a comparison to a public school district, the publicly traded corporation, with a separate board of directors and separate management, is the most reasonable point of comparison.

⁹Eisenberg (2000) estimates that an external director devotes 140 to 175 hours per year to his corporation.

¹⁰That is, one share of stock entitles the owner to one vote in the choice of directors and in the voting on major

matters (mergers, acquisitions, divestitures, etc.) brought to the attention of shareholders for determination.

¹¹The American Law Institute and that American Bar Association each has developed good practices recommendations in the area of corporate governance.

¹²170 N.W. 668 (Mich. 1919).

¹³Ala. Code 1975 § 16-11-2(c). Qualifications for county school board are even stricter on their face; “[Board members] shall be persons of good moral character, with at least a fair elementary education, of good standing in their respective communities and known for their honesty, business ability, public spirit and interest in the good of public.” Ala. Code 1975 § 16-8-1(b). Again, responsibility for enforcement of these provisions is unclear.

¹⁴Okl. Stat. 70 § 5-110(a).

¹⁵See appendix for the state-by-state oaths of office.

¹⁶See e.g., Ga. Code Ann. § 21-4-3 (defining ground for recall to include violating oaths of office); *Fitzgerald v. City of Maryland Heights*, 796 S.W. 2d 52, 62 (Mo. App. E.D. 1990). “Count 5 of the Bill of Impeachment charged the Mayor with violating his oath of office.... The Mayor’s oath of office required him to support ‘the provisions of all laws of [Missouri] affecting Cities of the Third Class...’ We construe this oath as obligating the Mayor to enforce state statutes in a reasonable manner.”

¹⁷See *Baggett v. Bullitt*, 84 S.Ct. 1316 (1964) (where an oath requiring officeholders to swear they were not “subversives” seeking to overthrow or alter America’s constitutional form of government was found unconstitutional).

¹⁸See § 3.4 *infra*.

¹⁹Oddly enough, this “first and greatest concern” is listed eleventh on the list of duties.

²⁰The other instance of the word “recognize” under § 16-2-9.1 is followed immediately by very specific “responsibilit[ies].” Thus, § (a)(11)’s weakness stands alone.

²¹This immunity may explain why school boards have, until recently, been indifferent to their success or failure in improving student achievement. See Hess (2002) and Wirt and Kirst (2001) on the recent emphasis that school boards place on student achievement.

²²However, no state to our knowledge has eliminated governmental immunity in the area of student competency or student achievement.

²³It is common for state law to require that school authorities have a “duty to supervise at all times the conduct of children on school grounds to enforce those rules and regulations necessary to their protection” (California). State laws typically also regulate the conditions of school premises, and thereby establish liability for those responsible for maintaining safe premises.

²⁴These antimajoritarian tendencies have lessened since the founding but still exist in republican structures like the Electoral College and the lifetime appointment of Supreme Court justices, for example.

²⁵See, for example, Maryland Constitution Article I § 9.

²⁶Art. XIV §1.

²⁷Interestingly, the oath of office conflict clause is less restrictive for Delaware school board members than for other public offices; it merely requires incoming members to affirm that they did not buy their way into office (Del. Code 14. I.10. III § 1053).

²⁸One can scarcely imagine a more striking conflict of interest than a board member voting to monetarily (or otherwise) settle a legal dispute with himself or herself.

²⁹To begin the effort, a brief examination of New Jersey case law on the issue of personal interests yields the following precedents: *Rodecker v. Gonzalez*, 93 N.J.A.R.2d (EDU) 367 (1993), precluding a municipal counsel from seeking election to school board of education due to inherent conflict of interest; *Board of Educ. of Tp. of Howell v. Suchcicki*, 93 N.J.A.R.2d (EDU) 157 (1992), holding that union officials representing board of education employees could not run for elected school board positions due to conflict of interest; *Board of Educ. of Tp. of Jackson, Ocean County v. Acevedo*, 92 N.J.A.R.2d (EDU) 163 (1992), where conflict of interest forced a board of education member to resign his seat after suing the board for harming his son.

³⁰“For the love of money is the root of all evils,” 1 Tim 6:10, *New American Bible*.

³¹That is, purely private schools are largely limited in their ability to raise prices to cover losses from corruption (general cost cutting notwithstanding), while public schools have recourse to the incomparable power of taxation.

³²Webster’s *Revised Unabridged Dictionary*, 1998 MICRA, Inc.

³³West Virginia Code, §6-10-1.

³⁴Tennessee Code, 8-31-102, “Relative means a parent, foster parent, parent-in-law, child, spouse, brother, foster brother, sister, foster sister, grandparent, grandchild, son-in-law, brother-in-law, daughter-in-law, sister-in-law, or other family member who resides in the same household.” But note how the “same household” requirement, which is fairly common, substantially weakens the prohibition.

³⁵Montana Statute 2-2-302.

³⁶For example, Kentucky requires that “every person elected to a board of education” shall swear “that he will not, while serving as a member of such board, become interested, directly or indirectly, in any contract with or claim against the board” (Kentucky Code, § 160.170). Incidentally, “claim” in this context refers to lawsuits as mentioned earlier.

³⁷Kentucky Code, § 160.170, excepting the hiring of the superintendent of schools or school board attorney.

³⁸New Jersey Code, 18A:12-2.

³⁹In fact, even the strict states are not nearly so rigid as it may appear, as they often include a plethora of situational exceptions.

⁴⁰Those enabled to vote in a school district are those who are of age and residents of the school district. They may or may not be taxpayers. Renters do not directly pay school property taxes, but likely bear some of the incidence of the school property tax through their rental payments.

⁴¹Even families with school-age children may not send their children to public schools. Overall, nonpublic school enrollment was 11.1 percent of K–12 enrollment, and it is not uncommon for more than 20 percent of school-age children in central cities to attend parochial rather than public schools.

⁴²See www.census.gov/govs/www/school02.html.

⁴³For example, Mississippi prohibits board members from being interested in contracts for the “construction, repair, or improvement of any school facility, the furnishing of any supplies, materials, or other articles, [and] the doing of any public work or the transportation of children.” The statute is silent about contracts for real estate, consulting, outsourced services, etc.

⁴⁴Connecticut allows conflicted contracts to stand if they are not challenged within 90 days of execution. (Connecticut Code, Sec. 1-84[i]).

⁴⁵Mississippi Code, § 25-4-105(6).

⁴⁶However, dissenting shareholders must first inform the board of directors of the complaint and give them an opportunity to cure it before initiating a suit.

⁴⁷In the federal context, private citizens have a right of *qui tam*, which allows privately initiated lawsuits on behalf of the United States for fraud by government contractors. Most importantly, prevailing plaintiffs are entitled to a share of any money recovered. See Federal Civil False Claims, Act 31 U.S.C., §§ 3729-33.

⁴⁸See Hess (2002), table 11. Fully one-quarter of school board directors in large districts devoted more than 70 hours per month or better than 840 hours per year, or about 42 percent of a full-time job to school board activities.

⁴⁹By “education leaders,” we mean superintendents through principals and their assistant principals, that is, all nonunionized personnel.

⁵⁰In fact, Maryland’s constitution requires that its public officers swear they will discharge their duties “diligently,” the same term proposed in this paper.

⁵¹Ironically, Delaware school boards members take a separate oath that omits the duty of loyalty language required of other public officers (See Delaware Code, Title 14, § 1053 and Delaware Constitution, Article XIV).

⁵²For evidence that school districts do not hire the most highly qualified teachers, see Ballou (1996), Ballou and Podgursky (1995), and Ballou and Podgursky (1997). For evidence that teacher quality impacts favorably on student performance, see Boardman, Davis, and Sanday (1977), Ehrenberg and Brewer (1994), Hanushek (1970), Ferguson (1991), Monk and King (1995), and Strauss and Sawyer (1986). For evidence that specific teachers impact student achievement, see Rivkin, Hanushek and Kain (2001). See Strauss et al. (1998) for the study for the Pennsylvania State Board of Education and Strauss et al. (2000).

⁵³See table 1 and the appendix.

⁵⁴Interestingly, two states impose a *less* stringent oath for school board members than for other public officers generally (see table 1 and the appendix).

⁵⁵Indeed, one state has oaths of office that already vary across every single school district (see Oregon Statute 332.005 and the Oregon School Board Association model oath office found in the appendix).

⁵⁶See Reynolds (2000) for a discussion of Dillon’s rule in relation to issues of sprawl in Virginia.

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APPENDIX 1 STATE AND FEDERAL OATHS OF OFFICE

ALABAMA

Article XVI of Alabama constitution provides:

"I, . . . , solemnly swear (or affirm, as the case may be) that I will support the Constitution of the United States, and the Constitution of the State of Alabama, so long as I continue a citizen thereof; and that I will faithfully and honestly discharge the duties of the office upon which I am about to enter, to the best of my ability. So help me God."

ALASKA

Constitution Article 12 § 5. Oath of Office

All public officers, before entering upon the duties of their offices, shall take and subscribe to the following oath or affirmation: "I do solemnly swear (or affirm) that I will support and defend the Constitution of the United States and the Constitution of the State of Alaska, and that I will faithfully discharge my duties as . . . to the best of my ability." The legislature may prescribe further oaths or affirmations.

Sec. 14.12.090. Oath

School board members, before taking office, shall take and sign the following oath or affirmation: "I do solemnly swear (or affirm) that I will support and defend the Constitution of the United States and the Constitution of the State of Alaska and that I will honestly, faithfully, and impartially discharge my duties as a school board member to the best of my ability."

ARIZONA

State of Arizona, County of _____
I, _____ (type or print name) do solemnly swear (or affirm) that I will support the Constitution of the United States and the Constitution and laws of the State of Arizona, that I will bear true faith and allegiance to the same and defend them against all enemies, foreign and domestic, and that I will faithfully and impartially discharge the duties of the office of _____ (name of office) _____ according to the best of my ability, so help me God (or so I do affirm).

ARKANSAS

Each director elected or appointed shall, within ten (10) days after receiving notice of his election or appointment, subscribe to the following oath:

I, _____, do hereby solemnly swear or affirm, that I will support the Constitution of the United States and the Constitution of the State of Arkansas, and that I will not be interested, directly or indirectly, in any contract made by the district of which I am a director, except as permitted by state law and that I will faithfully discharge the duties as school director in _____ School District, No. _____ of _____ County, Arkansas, upon which I am about to enter.

CALIFORNIA

Constitution Article, XX Section 3

I, _____, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States and the Constitution of the State of California against all enemies, foreign and domestic; that I will bear true faith and allegiance to the Constitution of the United States and the Constitution of the State of California; that I take this obligation freely, without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties upon which I am about to enter.

And I do further swear (or affirm) that I do not advocate, nor am I a member of any party or organization, political or otherwise, that now advocates the overthrow of the Government of the United States or of the State of California by force or violence or other unlawful means; that within the five years immediately preceding the taking of this oath (or affirmation) I have not been a member of any party or organization, political or otherwise, that advocated the overthrow of the Government of the United States or of the State of California by force or violence or other unlawful means except as follows:

(If no affiliations, write in the words "No Exceptions") and that during such time as I hold the office of _____ I will not advocate nor become a member of any party or organization, political or otherwise, that advocates the overthrow of the Government of the United States or of the State of California by force or violence or other unlawful means.

COLORADO

22-31-125. Oath of School District Directors

Each director shall, no later than fifteen days following the survey of votes, appear before some officer authorized to administer oaths or before the president of the board of education and take an oath that the director will faithfully perform the duties of the office as required by law and will support the constitution of the United States, the constitution of the state of Colorado, and the laws made pursuant thereto.

Constitution Article XII, Section 8

Oath of civil officers. Every civil officer, except members of the general assembly and such inferior officers as may be by law exempted, shall, before he enters upon the duties of his office, take and subscribe an oath or affirmation to support the constitution of the United States and of the state of Colorado, and to faithfully perform the duties of the office upon which he shall be about to enter.

CONNECTICUT

§ 1-25 for all other persons of whom an oath is required

You solemnly swear or solemnly and sincerely affirm, as the case may be, that you will faithfully discharge, according to law, your duties as...to the best of your abilities; so help you God or upon penalty of perjury.

DISTRICT OF COLUMBIA

§ 1-501. Oath to be taken by officers

All civil officers in the District shall, before they act as such, respectively take and subscribe an oath or affirmation to support the Constitution of the United States, and faithfully to discharge the duties of their respective offices; and the oath or affirmation provided for by this section shall be taken and subscribed, certified, and recorded, in such manner and form as may be prescribed by law.

DELAWARE

Delaware Code Annotated, Title 14. Education, § 1053 Oath of office of the school board member

Each school board member shall, before entering upon the duties of the office, take and subscribe to the following oath or affirmation:

I do solemnly swear (or affirm) that I will support the Constitution of the United States of America and the Constitution of the State of Delaware, and that I will faithfully discharge the duties of the office of school board member according to the best of my ability; and I do further solemnly swear (or affirm) that I have not directly or indirectly paid, offered or promised to pay, contributed, or offered to or promised to contribute, any money or other valuable thing as consideration or reward for the giving or withholding a vote at the election at which I was elected to said office, so help me God (or I so affirm).

**Constitution ARTICLE XIV, Oath of Office, § 1.
Form of oath for members of General Assembly
and public officers**

Members of the General Assembly and all public officers executive and judicial, except such inferior officers as shall be by law exempted, shall, before they enter upon the duties of their respected offices, take and subscribe the following oath or affirmation:

I, _____ (name), _____ do proudly swear (or affirm) to carry out the responsibilities of the office of _____ (name of office) to the best of my ability, freely acknowledging that the powers of this office flow from the people I am privileged to represent. I further swear (or affirm) always to place the public interest above any special or personal interests, and to respect the right of future generations to share the rich historic and natural heritage of Delaware. In doing so I will always uphold and defend the Constitutions of my Country and my State, so help me God.

No other oath, declaration or test shall be required as a qualification for any office of public trust.

FLORIDA

**Florida Statutes § 876.05 Public employees;
oath**

(1) All persons who now or hereafter are employed by or who now or hereafter are on the payroll of the state, or any of its departments and agencies, subdivisions, counties, cities, school boards and districts of the free public school system of the state or counties, or institutions of higher learning, and all candidates for public office, are required to take an oath before any person duly authorized to take acknowledgments of instruments for public record in the state in the following form:

I, _____, a citizen of the State of Florida and of the United States of America, and being employed by or an officer of _____ and a recipient of public funds as such employee or officer, do hereby solemnly swear or affirm that I will support the Constitution of the United States and of the State of Florida.

(2) Said oath shall be filed with the records of the governing official or employing governmental agency prior to the approval of any voucher for the payment of salary, expenses, or other compensation.

GEORGIA

Ga. Code Ann. § 45-3-1. Additional oath of public officers

Every public officer shall:

- (1) Take the oath of office;
- (2) Take any oath prescribed by the Constitution of Georgia;
- (3) Swear that he or she is not the holder of any unaccounted for public money due this state or any political subdivision or authority thereof;
- (4) Swear that he or she is not the holder of any office of trust under the government of the United States, any other state, or any foreign state which he or she is by the laws of the State of Georgia prohibited from holding;
- (5) Swear that he or she is otherwise qualified to hold said office according to the Constitution and laws of Georgia;
- (6) Swear that he or she will support the Constitution of the United States and of this state; and
- (7) If elected by any circuit or district, swear that he or she has been a resident thereof for the time required by the Constitution and laws of this state.

HAWAII

Hawaii Revised Statutes § 12-7 Filing of oath

The name of no candidate for any office shall be printed upon any official ballot, in any election, unless the candidate shall have taken and subscribed to the following written oath or affirmation, and filed the oath with the candidate's nomination papers.

The written oath or affirmation shall be in the following form:

I, _____, do solemnly swear and declare, on oath that if elected to office I will support and defend the Constitution and laws of the United States of America, and the Constitution and laws of the State of Hawaii, and will bear true faith and allegiance to the same; that if elected I will faithfully discharge my duties as _____ (name of office) to the best of my ability; that I take this obligation freely, without any mental reservation or purpose of evasion; So help me God.

IDAHO

59-401. LOYALTY OATH—FORM

Before any officer elected or appointed to fill any office created by the laws of the state of Idaho enters upon the duties of his office, he must take and subscribe an oath, to be known as the official oath, which is as follows:

I do solemnly swear (or affirm, as the case may be) that I will support the Constitution of the United States, and the Constitution of the State of Idaho, and that I will faithfully discharge the duties of (insert office) according to the best of my ability.

ILLINOIS

Constitution Article XIII, Section 3, Oath or Affirmation of Office

Each prospective holder of a State office or other State position created by this Constitution, before taking office, shall take and subscribe to the following oath or affirmation:

I do solemnly swear (affirm) that I will support the Constitution of the United States, and the Constitution of the State of Illinois, and that I will faithfully discharge the duties of the office of... to the best of my ability.

INDIANA

Const. Art. 15, § 4 Oath or affirmation of office

Section 4. Every person elected or appointed to any office under this Constitution, shall, before entering on the duties thereof, take an oath or affirmation, to support the Constitution of this State, and of the United States, and also an oath of office.

Indiana Code 20-5-3-1.5 Oath of members

Sec. 1.5. Governing Body; Oath of Office. Each person elected or selected to be a member of a school corporation governing body shall take the following oath before taking office:

I solemnly swear (or affirm) that I will support the constitution of the United States of America, the constitution of the state of Indiana, and the laws of the United States and the state of Indiana. I will faithfully execute the duties of my office as a member of this governing body, so help me God.

Provided, that the school corporation governing body may provide for such additional provisions to said oath as the governing body may deem appropriate for said office.

IOWA

Constitution Article XI § 5: Oath of office

Every person elected or appointed to any office, shall, before entering upon the duties thereof, take an oath or affirmation to support the constitution of the United States, and of this state, and also an oath of office.

Iowa Code § 63.10 elections

All other civil officers, elected by the people or appointed to any civil office, unless otherwise provided, shall take and subscribe an oath substantially as follows:

I, _____ do solemnly swear that I will support the Constitution of the United States and the Constitution of the State of Iowa, and that I will faithfully and impartially, to the best of my ability, discharge all the duties of the office of _____ (naming it) in (naming the township, city, county, district, or state, as the case may be), as now or hereafter required by law.

Iowa Code § 277.28 Oath required

Each director elected at a regular district or director district election shall qualify by taking the oath of office on or before the time set for the organization meeting of the board and the election and qualification entered of record by the secretary. The oath may be administered by any qualified member of the board or the secretary of the board and may be taken in substantially the following form:

Do you solemnly swear that you will support the Constitution of the United States and the Constitution of the state of Iowa and that you will faithfully and impartially to the best of your ability discharge the duties of the office of _____ (naming the office) in _____ (naming the district) as now or hereafter required by law?

If the oath of office is taken elsewhere than in the presence of the board in session it may be administered by any officer listed in sections 63A.1 and 63A.2 and shall be subscribed to by the person taking it in substantially the following form:

I, _____, do solemnly swear that I will support the Constitution of the United States and the Constitution of the state of Iowa and that I will faithfully and impartially to the best of my ability discharge the duties of the office of _____ (naming the office) in _____ (naming the district) as now or hereafter required by law.

KANSAS

Constitution of the State of Kansas ARTICLE 15 § 14. Oaths of state officers

All state officers before entering upon their respective duties shall take and subscribe an oath or affirmation to support the constitution of the United States and the constitution of this state, and faithfully to discharge the duties of their respective offices.

KENTUCKY

Constitution Section 228, Oath of officers and attorneys

Members of the General Assembly and all officers, before they enter upon the execution of the duties of their respective offices, and all members of the bar, before they enter upon the practice of their profession, shall take the following oath or affirmation: I do solemnly swear (or affirm, as the case may be) that I will support the Constitution of the United States and the Constitution of this Commonwealth, and be faithful and true to the Commonwealth of Kentucky so long as I continue a citizen thereof, and that I will faithfully execute, to the best of my ability, the office of... according to law; and I do further solemnly swear (or affirm) that since the adoption of the present Constitution, I, being a citizen of this State, have not fought a duel with deadly

weapons within this State nor out of it, nor have I sent or accepted a challenge to fight a duel with deadly weapons, nor have I acted as second in carrying a challenge, nor aided or assisted any person thus offending, so help me God.

160.170 Oath of board members

Every person elected to a board of education shall, before assuming the duties of his office, take the following oath, in addition to the constitutional oath:

State of Kentucky, County of _____, _____, being duly sworn, says that he is eligible under the law to serve as a member of the board of education, and that he will not, while serving as a member of such board, become interested, directly or indirectly, in any contract with or claim against the board, and that he will not in any way influence the hiring or appointment of district employees, except the hiring of the superintendent of schools or school board attorney.

LOUISIANA

Constitution §30. Oath of Office

Section 30. Every official shall take the following oath or affirmation:

I, _____, do solemnly swear (or affirm) that I will support the constitution and laws of the United States and the constitution and laws of this state and that I will faithfully and impartially discharge and perform all the duties incumbent upon me as _____, according to the best of my ability and understanding, so help me God.

MAINE

Maine Revised Statutes Annotated, Subchapter III. School Directors, § 1251. Board of directors

Provisions for a board of directors shall be as follows:

Oath of office. Before their first meeting, newly elected directors must take the following oath or affirmation before a dedimus justice or notary public.

I _____ do swear that I will faithfully discharge to the best of my abilities the duties incumbent on me as a school director of School Administrative District No. _____ according to the Constitution and laws of this State. So help me God.

**Maine Revised Statutes Annotated, Article IX.
General Provisions § 1. Oaths and subscriptions;
alternative affirmation; administration of oaths
to Governor, Senators, Representatives, and
other officers**

Section 1. Every person elected or appointed to either of the places or offices provided in this Constitution, and every person elected, appointed, or commissioned to any judicial, executive, military or other office under this State, shall, before entering on the discharge of the duties of that place or office, take and subscribe the following oath or affirmation:

I, _____ do swear, that I will support the Constitution of the United States and of this State, so long as I shall continue a citizen thereof. So help me God.

I _____ do swear, that I will faithfully discharge, to the best of my abilities, the duties incumbent on me as _____ according to the Constitution and laws of the State. So help me God.

Provided, that an affirmation in the above forms may be substituted, when the person shall be conscientiously scrupulous of taking and subscribing an oath.

MARYLAND

**Constitution of Maryland Article I. Elective
Franchise, § 9. Oath or affirmation of office**

Every person elected, or appointed, to any office of profit or trust, under this Constitution, or under the Laws, made pursuant thereto, shall, before he enters upon the duties of such office, take and subscribe the following oath, or affirmation: I, _____, do swear, (or affirm, as the case may be,) that I will support the Constitution of the United States; and that I will be faithful and bear true allegiance to the State of Maryland, and support the Constitution and Laws thereof; and that I will, to the best of my skill and judgment, diligently and faithfully, without partiality or prejudice, execute the office of _____, according to the Constitution and Laws of this State (and, if a Governor, Senator, Member of the House of Delegates, or Judge), that I will not directly or indirectly, receive the profits or any part of the profits of any other office during the term of my acting as _____.

**Code of Maryland Title 5. State Treasurer
§ 5-101.1. Oath**

In addition to the oath specified in Article I, § 9 of the Maryland Constitution, the Treasurer shall take an oath to discharge the duties of the Office of Treasurer faithfully, diligently, and honestly.

MASSACHUSETTS

Constitution Art. VI. Oath and affirmation

ART. VI. Instead of the oath of allegiance prescribed by the constitution, the following oath shall be taken and subscribed by every person chosen or appointed to any office, civil or military under the government of this commonwealth, before he shall enter on the duties of his office, to wit;

I, A.B., do solemnly swear, that I will bear true faith and allegiance to the Commonwealth of Massachusetts, and will support the constitution thereof. So help me GOD.

Provided, That when any person shall be of the denomination called Quakers, and shall decline taking said oath, he shall make his affirmation in the foregoing form, omitting the word "swear" and inserting instead thereof the word "affirm;" and omitting the words "So help me GOD," and subjoining, instead thereof, the words "This I do under the pains and penalties of perjury."

MICHIGAN

All officers, legislative, executive and judicial, before entering upon the duties of their respective offices, shall take and subscribe the following oath or affirmation: I do solemnly swear (or affirm) that I will support the Constitution of the United States and the constitution of this state, and that I will faithfully discharge the duties of the office of _____ according to the best of my ability. No other oath, affirmation, or any religious test shall be required as a qualification for any office or public trust.

MINNESOTA

Minnesota Statutes Annotated, Public Services and Privileges, Chapter 358. Seals, Oaths, Acknowledgments, 358.05. Oath of office

The oath of office to be taken by members and officers of either branch of the legislature shall be that prescribed by the Constitution of the state of Minnesota, article IV, section 8. Every person elected or appointed to any other public office, including every official commissioner, or member of any public board or body, before transacting any of the business or exercising any privilege of such office, shall take and subscribe the oath defined in the Constitution of the state of Minnesota, article V, section 6.

Constitution of the State of Minnesota, Article V. Executive Department, § 6. Oath of office of state officers

Each officer created by this article before entering upon his duties shall take an oath or affirmation to support the constitution of the United States and of this state and to discharge faithfully the duties of his office to the best of his judgment and ability.

Constitution of 1857 as amended, Minnesota Statutes Annotated State Employment Chapter 43. State Civil Service [Repealed], 43.16. Repealed by Laws 1975, c. 399, § 2

The repealed section, which required officers, employees, and applicants for examinations to take an oath to the effect that such person will protect and preserve the property and money of the state, will uphold and defend the state and federal constitutions, and except as provided in these constitutions not take part in movements to alter or change our form of government, was derived from:

MISSISSIPPI

Constitution, Article 14, Section 268.

All officers elected or appointed to any office in this state, except judges and members of the legislature, shall, before entering upon the discharge of the duties thereof, take and subscribe the following oath:

I, _____, do solemnly swear (or affirm) that I will faithfully support the Constitution of the United States and the Constitution of the State of Mississippi, and obey the laws thereof, that I am not disqualified from holding the office of _____; that I will faithfully dis-

charge the duties of the office upon which I am about to enter. So help me God.

MONTANA

Section 3. Oath of office

Members of the legislature and all executive, ministerial and judicial officers, shall take and subscribe the following oath or affirmation, before they enter upon the duties of their offices: "I do solemnly swear (or affirm) that I will support, protect and defend the constitution of the United States, and the constitution of the state of Montana, and that I will discharge the duties of my office with fidelity (so help me God)." No other oath, declaration, or test shall be required as a qualification for any office or public trust.

NEBRASKA

§ 79-552. Class V school district; board of education; members; election by district; procedure; oath; qualifications; student member

All persons elected as members of the board of education shall take and subscribe to the usual oath of office before the first Monday in January following their election, and the student member shall take and subscribe to the usual oath of office before the first Monday in January following his or her designation.

§ 11-101.01. Oath of office; state and political subdivisions; employees; form

All persons in Nebraska, with the exception of executive and judicial officers and members of the Legislature who are required to take the oath prescribed by Article XV, section 1, of the Constitution of Nebraska, who are paid from public funds for their services, including teachers and all other employees paid from public school funds, shall be required to take and subscribe an oath in writing, before a person authorized to administer oaths in this state, and file same with the Department of Administrative Services, or the county clerk of the county where such services are performed, which oath shall be as follows:

I, _____, do solemnly swear that I will support and defend the Constitution of the United States and the Constitution of the State of Nebraska, against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; that I take this obligation freely, without any mental reservation or for purpose of evasion; and that I will faithfully and impartially perform the

duties of the office of _____ according to law, and to the best of my ability. And I do further swear that I do not advocate, nor am I a member of any political party or organization that advocates the overthrow of the government of the United States or of this state by force or violence; and that during such time as I am in this position I will not advocate nor become a member of any political party or organization that advocates the overthrow of the government of the United States or of this state by force or violence. So help me God.

NEVADA

Constitution, Article 15, Section 2, Oath of office

Members of the legislature, and all officers, executive, judicial and ministerial, shall, before they enter upon the duties of their respective offices, take and subscribe to the following oath:

I, _____, do solemnly [solemnly] swear (or affirm) that I will support, protect and defend the constitution and government of the United States, and the constitution and government of the State of Nevada, against all enemies, whether domestic or foreign, and that I will bear true faith, allegiance and loyalty to the same, any ordinance, resolution or law of any state notwithstanding, and that I will well and faithfully perform all the duties of the office of _____, on which I am about to enter; (if an oath) so help me God; (if an affirmation) under the pains and penalties of perjury.

NEW HAMPSHIRE

Constitution Art. 84. Oath of Civil Officers

Any person chosen governor, councilor, senator, or representative, military or civil officer, (town officers excepted) accepting the trust, shall, before he proceeds to execute the duties of his office, make and subscribe the following declaration:

I, A.B. do solemnly swear, that I will bear faith and true allegiance to the United States of America and the state of New Hampshire, and will support the constitution thereof. So help me God.

I, A.B. do solemnly and sincerely swear and affirm that I will faithfully and impartially discharge and perform all duties incumbent on me as _____, according to the best of my abilities, agreeably to the rules and regulations of this constitution and laws of the state of New Hampshire. So help me God.

NEW JERSEY

New Jersey Statutes Annotated, Title 18A.

Education, 18A:12-2.1. Qualifying oaths of members

Each member of a board of education shall, before entering upon the duties of his office, take and subscribe:

(1) An oath that he possesses the qualifications of membership prescribed by law [see below], including a specific declaration that he is not disqualified as a voter [not on parole or a convicted felon] pursuant to R.S. 19:4-1, and that he will faithfully discharge the duties of this office, and also

(2) The oath prescribed by R.S. 41:1-3 of the Revised Statutes.

41:1-3. Oath of allegiance and oath of office; persons required to take; form

Every person who shall be elected, or appointed to any public office in this State or in any county, municipality or special district other than a municipality therein, or in any department, board, commission, agency or instrumentality of any thereof, and is required to take and subscribe an oath of office shall, before he enters upon the execution of his said office take and subscribe the oath of allegiance set forth in R.S. 41:1-1 and, in addition, (a) any specially prescribed official oath, or (b) if no text is specially prescribed for such oath of office, the following official oath of office:

I, _____, do solemnly swear (or affirm) that I will faithfully, impartially and justly perform all the duties of the office of _____ according to the best of my ability. So help me God.

41:1-1. Oath of allegiance; form

Every person who is or shall be required by law to give assurance of fidelity and attachment to the Government of this State shall take the following oath of allegiance:

I, _____, do solemnly swear (or affirm) that I will support the Constitution of the United States and the Constitution of the State of New Jersey, and that I will bear true faith and allegiance to the same and to the Governments established in the United States and in this State, under the authority of the people. So help me God.

**Qualifications, Title 18A. Education, 18A:12-2
Inconsistent interests or office prohibited**

No member of any board of education shall be interested directly or indirectly in any contract with or claim against the board, nor, in the case of local and regional school districts, shall he hold office as mayor or as a member of the governing body of a municipality, nor, in the case of county special services school districts and county vocational school districts, shall he hold office as a member of the governing body of a county.

NEW MEXICO

§ 22-5-9.1. Oath of office

All elected or appointed members of local school boards shall take the oath of office prescribed by Article 20, Section 1 of the constitution of New Mexico.

Constitution, Article XX, Section 1.

[Oath of officer]

Every person elected or appointed to any office shall, before entering upon his duties, take and subscribe to an oath or affirmation that he will support the constitution of the United States and the constitution and laws of this state, and that he will faithfully and impartially discharge the duties of his office to the best of his ability.

NEW YORK

Section I, Article XIII of the New York State Constitution and provides, "I do solemnly swear (or affirm) that I will support the constitution of the United States, and the constitution of the State of New York, and that I will faithfully discharge the duties of the office of _____, according to the best of my ability."

NORTH CAROLINA

**West's North Carolina General Statutes
Annotated, Chapter 115C. Elementary
and Secondary Education, Subchapter II.
Administrative Organization of State and
Local Education Agencies, Article 5. Local
Boards of Education, § 115C-37. Election of
board members**

Members to Qualify—Each county board of education shall hold a meeting in December following the election. At that meeting, newly elected members of the board of education shall qualify by taking the oath of office prescribed in Article VI, Sec. 7 of the Constitution.

**West's North Carolina General Statutes
Annotated, Constitution of North Carolina, Article
VI. Suffrage and Eligibility to Office, Sec. 7. Oath**

Before entering upon the duties of an office, a person elected or appointed to the office shall take and subscribe the following oath:

I, _____, do solemnly swear (or affirm) that I will support and maintain the Constitution and laws of the United States, and the Constitution and laws of North Carolina not inconsistent therewith, and that I will faithfully discharge the duties of my office as _____, so help me God.

**West's North Carolina General Statutes
Annotated, Chapter 11. Oaths, Article 1. General
Provisions, § 11-7. Oath or affirmation to sup-
port Constitutions; all officers to take**

Every member of the General Assembly and every person elected or appointed to hold any office of trust or profit in the State shall, before taking office or entering upon the execution of the office, take and subscribe to the following oath:

I, _____, do solemnly and sincerely swear that I will support the Constitution of the United States; that I will be faithful and bear true allegiance to the State of North Carolina, and to the constitutional powers and authorities which are or may be established for the government thereof; and that I will endeavor to support, maintain and defend the Constitution of said State, not inconsistent with the Constitution of the United States, to the best of my knowledge and ability; so help me God. (Amended by Laws 1985, c. 756, § 5.)

**West's North Carolina General Statutes
Annotated, Chapter 11. Oaths, Article 2. Forms
of Official and Other Oaths, § 11-11. Oaths of
sundry persons; forms**

The oaths of office to be taken by the several persons hereafter named [no reference to school boards] shall be in the words following the names of said persons respectively, after taking the separate oath required by Article VI, Section 7 of the Constitution of North Carolina:

General Oath

Any officer of the State or of any county or township, the term of whose oath is not given above, shall take an oath in the following form:

I, A.B., do swear (or affirm) that I will well and truly execute the duties of the office of _____ according to the best of my skill and ability, according to law; so help me, God.

NORTH DAKOTA

Section 4.

Members of the legislative assembly and judicial department, except such inferior officers as may be by law exempted shall, before they enter on the duties of their respective offices, take and subscribe the following oath or affirmation: "I do solemnly swear (or as the case may be) that I will support the Constitution of the United States and the Constitution of the State of North Dakota; and that I will faithfully discharge the duties of the office _____ according to the best of my ability, so help me God" (if an oath), (under pains and penalties of perjury) if an affirmation, and no other oath, declaration, or test shall be required as a qualification for any office or public trust.

OHIO

§ 15.07 Oath of officers

Every person chosen or appointed to any office under this state, before entering upon the discharge of its duties, shall take an oath or affirmation, to support the Constitution of the United States, and of this state, and also an oath of office.

Ohio Revised Code § 3313.10. Oath of office of member

Before entering upon the duties of his office each person elected or appointed a member of a board of education shall take an oath to support the Constitution of the United States and the constitution of this state and that he will perform faithfully the duties of his office. Such oath may be administered by the treasurer or any member of the board.

OKLAHOMA

Section 5-116—Oath of Office

Each member of the board of education and the treasurer and assistant treasurer of a school district shall take and subscribe to the following oath:

I _____ (Name of officer), hereby declare under oath that I will faithfully perform the duties of _____ (Name of position) of _____ (Name of school district) to the best of my ability and that I will faithfully discharge all of the duties pertaining to said office and obey the Constitution and laws of the United States and Oklahoma.

Oklahoma Constitution Art XV, § 1 Officers required to take oath or affirmation

All public officers, before entering upon the duties of their offices, shall take and subscribe to the following oath or affirmation:

I, _____, do solemnly swear (or affirm) that I will support, obey, and defend the Constitution of the United States, and the Constitution of the State of Oklahoma, and that I will not, knowingly, receive, directly or indirectly, any money or other valuable thing, for the performance or nonperformance of any act or duty pertaining to my office, other than the compensation allowed by law; I further swear (or affirm) that I will faithfully discharge my duties as _____ to the best of my ability.

The Legislature may prescribe further oaths or affirmations.

OREGON

Oregon Constitution

Article XV Section 3. Oaths of office. Every person elected or appointed to any office under this Constitution, shall, before entering on the duties thereof, take an oath or affirmation to support the Constitution of the United States, and of this State, and also an oath of office.

332.005 Directors as district school board; oath.

(1) The directors of a school district in their official capacity shall be known as the district school board.

(2) Directors must qualify by taking an oath of office before assuming the duties of office.

Oregon School Board Association—Model Oath of Office

I, _____, do solemnly swear that I will support the Constitution of the United States, the Constitution of the State of Oregon and the laws thereof, and the policies of the _____ School District. During my term, I will faithfully and impartially discharge the responsibilities of the office of School Board Member according to the best of my ability.

PENNSYLVANIA

I do solemnly swear (or affirm) that I will support, obey and defend the Constitution of the United States and the Constitution of this Commonwealth, and that I will discharge the duties of my office with fidelity.

RHODE ISLAND

R.I. Stat. § 36-1-2 Engagement of office

Every person, except the justices of the supreme and superior courts, elected to office by the general assembly, or by either house thereof, or under the provisions of the law in relation to public schools, or appointed to office, civil or military, by the governor, shall, before he or she shall act therein, take the following engagement before some person authorized to administer oaths, namely: I, [naming the person], do solemnly swear (or affirm) that I will faithfully and impartially discharge the duties of the office of [naming the office] according to the best of my abilities, and that I will support the Constitution and laws of this state, and the Constitution of the United States, so help me God: [Or: This affirmation I make and give upon the peril of the penalty of perjury.]

Constitution Article III, Section 3. Oath of general officers

All general officers shall take the following engagement before they act in their respective offices, to wit: You being by the free vote of the electors of this state of Rhode Island and Providence Plantations, elected unto the place of do solemnly swear (or, affirm) to be true and faithful unto this state, and to support the Constitution of this state and of the United States; that you will faithfully and impartially discharge all the duties of your aforesaid office to the best of your abilities, according to law: So help you God. Or: This affirmation you make and give upon the peril of the penalty of perjury.

SOUTH CAROLINA

I do solemnly swear (or affirm) that I am duly qualified, according to the Constitution of this State, to exercise the duties of the office to which I have been elected, (or appointed), and that I will, to the best of my ability, discharge the duties thereof, and preserve, protect and defend the Constitution of this State and of the United States. So help me God.

SOUTH DAKOTA

TENNESSEE

8-18-111. Form of oath of office

The official oath, unless otherwise expressly prescribed by law, shall be in the following form: "I do solemnly swear that I will perform with fidelity the duties of the office to which I have been appointed (or elected, as the case may be), and which I am about to assume."

FEDERAL OATHS OF OFFICE

President of the United States (U.S. Constitutional Oath)

I do solemnly swear (or affirm) that I will faithfully execute the Office of President of the United States, and will to the best of my ability, preserve, protect and defend the Constitution of the United States.

Federal Employees

Title 5, Part III, Subpart B, Chapter 33, Subchapter II, § 3331. Oath Of Office

An individual, except the President, elected or appointed to an office of honor or profit in the civil service or uniformed services, shall take the following oath:

I, AB, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; that I take this obligation freely, without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office on which I am about to enter. So help me God.

Federal Military Oaths of Office

“I, _____, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; and that I will obey the orders of the President of the United States and the orders of the officers appointed over me, according to regulations and the Uniform Code of Military Justice. So help me God.” (Title 10, US Code; Act of 5 May 1960 replacing the wording first adopted in 1789, with amendment effective 5 October 1962).

I, _____ (SSAN), having been appointed an officer in the Army of the United States, as indicated above in the grade of _____ do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign or domestic, that I will bear true faith and allegiance to the same; that I take this obligation freely, without any mental reservations or purpose of evasion; and that I will well and faithfully discharge the duties of the office upon which I am about to enter; So help me God. (DA Form 71, 1 August 1959, for officers.)

National Banking Laws: Comptroller of the Currency Requirement**12 USC 73**

Each director, when appointed or elected, shall take an oath that he will, so far as the duty devolves on him, diligently and honestly administer the affairs of such association, and will not knowingly violate or willingly permit to be violated any of the provisions of title 62 of the Revised Statutes, and that he is the owner in good faith, and in his own right, of the number of shares of stock required by title 62 of the Revised Statutes, subscribed by him, or standing in his name on the books of the association, and that the same is not hypothecated, or in any way pledged, as security for any loan or debt. The oath shall be taken before a notary public, properly authorized and commissioned by the State in which he resides, or before any other officer having an official seal and authorized by the State to administer oaths, except that the oath shall not be taken before any such notary public or other officer who is an officer of the director's bank. The oath, subscribed by the director making it, and certified by the notary public or other officer before whom it is taken, shall be immediately transmitted to the Comptroller of the Currency and shall be filed and preserved in his office for a period of ten years.

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Acknowledgments

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