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Budgets, Priorities, and Investment in Human Capital

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This volume, which responds to a series of federal education initiatives, provides an opportunity to look at a set of questions that have received surprisingly little attention. These questions involve the issue of where our governmental policy focus in education should be placed. If we begin from a position that we are going to pay attention to education, should we focus on higher education? Should we focus on elementary and secondary schools? Or should we pursue a mixed strategy?

In one sense the general lack of attention is not surprising, because these topics are frequently taken as entirely separate issues, researched by different people and addressed by policy makers of varying fundamental interests. At the same time, it is natural to think that there is some relationship between elementary and secondary schools and higher education. For there is. Unfortunately, we seldom ask the overarching question about how that relationship might influence policy deliberations.

This volume also takes up a second important issue. Contrary to the prevailing Washington perspective, the definition of a given policy is not always synonymous with the resources that are applied to that area. When we are in the middle of intense budget negotiations (as we have continuously been throughout the 1980s and the 1990s), everybody thinks that the most relevant dimension of a policy has to do with the state of agreement between the president and a House or a Senate committee on some numerical figure in a budget document. I submit that this constitutes only a small portion of our education policy, and so should constitute only a small portion of the way we think about education policy.

The context for this discussion is that proposals by the Clinton administration and actions in Congress in 1997 were heavily weighted toward allocating resources for higher education, even though federal

financial support was already more important there than for elementary and secondary education. Moreover, virtually the only public debate about higher education policy was about details, such as the mixture between Pell grants and tax deductions. Little consideration went to whether a focus on higher education is appropriate.

To me, the issues are not about the balance of grants and tax preference items for higher education but rather the larger questions, the balance of human capital investment policies. My perspective is a straightforward one. If we compare higher education with elementary and secondary education, higher education appears to be performing quite well and to be the part of our educational system that is working. Our elementary and secondary schools appear not to be working nearly as well. In fact they have substantial problems, even though the policy focus and the federal concern are directed to higher education and not to elementary and secondary education.

The theme of this volume is, How should we think about educational investment strategies? Although it seems implausible on the surface, let's consider what hypothetical circumstances would make disproportionate attention to higher education the correct way to view education policy, given the current state of our educational system.

Background

Educational investments are important for the U.S. economy, and we ought to think about an aggressive human capital investment strategy. The U.S. economy has largely been built upon a skilled labor force and has capitalized on the presence of skills, making human capital investments very important to the success of the general economy. Furthermore, as Kane and Cameron and Heckman show in this volume, the labor market value of the increased skills, as measured by schooling level, has increased dramatically in recent years. This valuation demonstrates that the economy continues to require an increasingly skilled labor force.

Some recent work has suggested, too, that education is crucial to the growth rates of the nation as a whole and that there is an important relationship between human capital and growth rates. Economists have recently spent considerable time and effort trying to understand why some countries grow faster than others, and the majority opinion is that a nation's stock of human capital is an important component of differential growth rates. Moreover, some recent research I have carried out with one of my students suggests to me that the quality of schooling is perhaps the most important component. This finding

dovetails with the concerns expressed below about how U.S. quality lags behind that of many countries in the world.

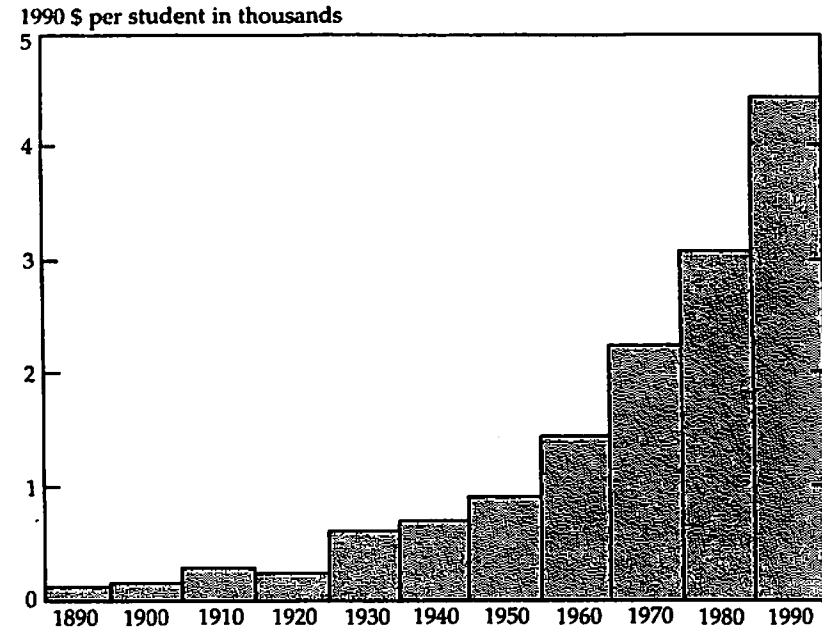
The growth effects are important if we consider the justification for governmental involvement in education, as opposed to purely private decision making on schooling. Governmental intervention is frequently justified on the basis of external benefits—benefits that go beyond the individual investing in the schooling. Are there external benefits to investing in education? Education is often thought to be a “large externality” undertaking, but identification and measurement of those externalities have proved difficult. My proposed candidate for the most important potential external benefit from investing in education is the overarching effect on growth rates that potentially affect the whole economy. The work supporting this hypothesis is not refined; it does not give a precise answer; and numerous qualifications about the external effects of education pervade this volume. Nonetheless, growth effects are certainly an important policy issue to consider.

Next, we have thought of education as a primary ingredient in providing equality of opportunity to society—as a way of cutting down or breaking intergenerational correlations of income and of trying to provide opportunity to all of society. That is the focus, in part, of the discussion on access to higher education, and it is an important reason for us to continue our attention to education.

In terms of total investment, the data show that we have had a consistent focus on education over a long period of time. It is common to hear how important it is that the president focuses attention on education. Implicit or explicit in this observation is the sentiment that we have been shortchanging the educational system. It may be that the president can get the attention of the population better than anybody else, but there has been a consistent policy thrust and a heavy emphasis given to education and human capital investment for a long time. The emphasis has not, however, been given at the federal government level.

The federal government is not the main actor in either elementary and secondary or higher education. For a long time, we have seen considerable growth in the resources from states and localities going into education. President Clinton emphasized provision of more federal support for educational investment by devoting a substantial portion of his 1997 State of the Union address to his proposals. Presidents Reagan and Bush also focused attention on education policy, however. In 1989, for example, President Bush convened a historic gathering of the governors of all the states to focus exclusively on issues of education. They set a series of lofty goals for the year 2000. Unfortunately, we are now very close to the year 2000, and we are not close to meeting

FIGURE 2-1
REAL SPENDING PER STUDENT, 1890-1990



SOURCE: Author.

the goals. Indeed, even if we change “goals 2000” to “goals 2010,” I do not believe that we have much chance of achieving them, given current and proposed policies toward schools.

Past Investments in Human Capital. We now turn to the matter of human capital investment, at least as conveyed by spending. I am able to give exact figures regarding elementary and secondary education, for both enrollment and spending. I do not have the comparable numbers for higher education. They are more difficult to get, although Tom Kane has provided some of the basic data.

Figure 2-1 is a display of what has happened to real per pupil spending. Real per pupil spending over a 100-year period has grown at about 3.5 percent per year, that is, after adjusting for inflation. In constant 1990 dollars, spending goes from \$170 per student in 1890 to \$4,800 per student in 1990. There is simply no getting around the fact that the United States has been investing steadily increasing amounts per pupil in education.

For recent time periods, table 2-1 shows that we have been invest-

TABLE 2-1
PUBLIC SCHOOL RESOURCES, 1961-1991

Characteristic	Year						
	1960-61	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91
Pupil-teacher ratio	25.6	24.1	22.3	20.2	18.8	17.7	17.3
Percentage of teachers with master's degrees	23.1	23.2	27.1	37.1	49.3	50.7	52.6
Median years of teacher experience	11	8	8	8	12	15	15
Current expenditure/ADA (1992-93 \$s)	\$1,903	\$2,402	\$3,269	\$3,864	\$4,116	\$4,919	\$5,582

SOURCE: Author.

ing in just the way people want to talk about it. For elementary and secondary schools, we have been lowering pupil-to-teacher ratios, we have dramatically increased the average experience of teachers, and we have doubled the percentage of teachers who have master's degrees over the past quarter century. Because we pay for each of these, they add up to a dramatic increase in real spending. From 1960 to 1990, real spending per student almost tripled.

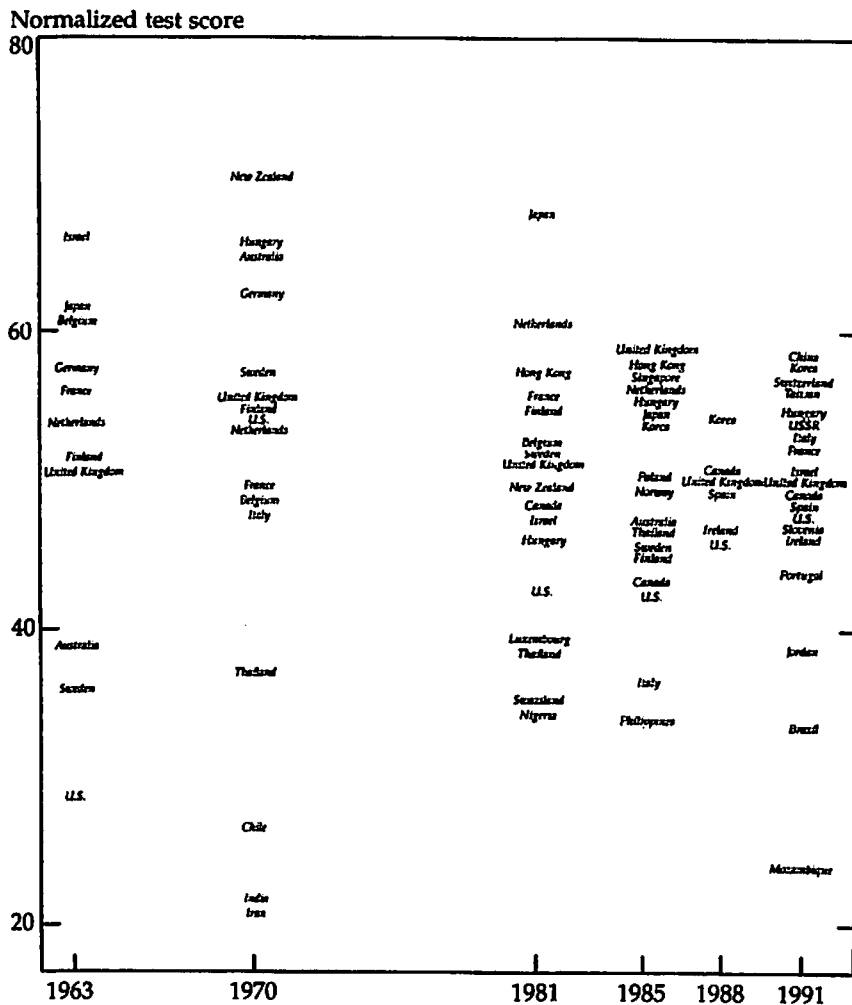
The spending growth has stalled in the 1990s. I interpret this largely as a public reaction to the poor performance from past spending, something that is documented below. It does, however, suggest that public schools are likely to be under increasing fiscal pressures and that they will have to find ways to adjust their behavior in light of this and performance demands.

Higher education data are harder to produce. Nonetheless, this chart of spending can put them in the context of the data that Tom Kane has developed and presents elsewhere in this volume. He has produced data on higher education real spending per full-time equivalent student between 1980 and 1995. These data show that public four-year colleges have a trend in spending growth that is somewhat lower than that for elementary and secondary schools, but that private four-year schools have exhibited a growth trend that is somewhat higher. Because college students predominantly attend public institutions, the average growth in higher education expenditure has been somewhat less than that in elementary and secondary expenditure, but the paths have been quite similar. In other words, the United States has pursued a consistent, across-the-board policy of investing more in education, such that, although significant, recent proposals must be put into the context of a historic commitment to expanding education.

Recent federal budget documents do not reflect a new thrust toward investing in education and human capital. They reflect the fact that the federal government is taking a more serious look at education and concentrating more heavily on higher education. Except for the publicity aspects, however, human capital investment remains chiefly the province of states and localities.

Performance. It is useful to look at performance in the context of the investment of resources. In doing so, it is natural to contrast performance in elementary and secondary education with that in higher education. Beginning with elementary and secondary education, the basic story is simple. In terms of quality of learning, U.S. schools are not now, and have not been, very competitive when judged by the performance of elementary and secondary schools around the world. Fig-

FIGURE 2-2
INTERNATIONAL TEST SCORE PERFORMANCE, FOR
SELECTED COUNTRIES, 1963-1991



SOURCE: Author.

ure 2-2 presents what we know about all international testing of math and science scores for U.S. students through the middle of 1996.

This figure depicts years of international testing along the horizontal axis, each column representing a different year. The vertical axis presents a normalized score, making it possible to compare countries

over time. Each country taking the test in a given year is arrayed according to its score on a scale where the world mean for each testing year is 50.

The U.S. performance varies over time. The drift depicted in the figure closely mirrors the average performance of U.S. seventeen-year-olds on the mathematics and science tests of the National Assessment of Educational Progress (NAEP). Moreover, the key revelation of this figure is that the United States is almost always below the median of whichever group of countries is taking the test.

In 1997, results released for the Third International Math and Science Study (TIMSS) placed U.S. eighth graders right in the middle of the pack. Fourth graders scored higher, but U.S. twelfth graders were at the bottom. This performance, which is not included in the figure, resulted as it did even though a very wide range of countries—forty-one—participated in the testing. Thus, there is no real change in the latest scores.

The fact is that the United States has not been doing particularly well in international comparisons. This may seem surprising, since the United States has an economy built on a skilled labor force. You might ask, "How could that be?" While the United States is not doing well, it is producing skilled goods that one might argue require a skilled labor force. The answer seems to be that over a long period of time we have substituted quantity of schooling for quality. Historically, we have always had a labor force with more years of schooling, on average, even if these years of schooling have been of a lower quality than those of other countries. That quantitative superiority is ending. Table 2-2 compares the percentage of students in different countries that have received upper secondary school education, essentially a high school education. These completion rates are broken down by age. The purpose of breaking them down by age is to be able to read the schooling policies of countries in different years. Individuals who are twenty-five to thirty-four years old in 1992 were educated sometime in the 1980s. People aged thirty-five to forty-four were educated in the 1970s. The next group in the table was educated in the 1960s, and the final group in the 1950s.

Looking at the 1980s, it is clear that a large number of countries are rivaling the 87 percent of U.S. students who are completing high school educations. There are three others in the G-7 group. In the displayed countries outside of the G-7 group, another five are above an 80 percent high school completion rate. That contrasts sharply with earlier decades, when the United States had a dramatic lead in terms of quantity of schooling. There is no getting around the fact that other OECD countries and developing countries have been dramatically in-

TABLE 2-2
POPULATION WITH UPPER-SECONDARY-LEVEL EDUCATION,
BY AGE AND COUNTRY, 1992
(in percent)

	Age Group			
	1980s	1970s	1960s	1950s
	25-34	35-44	45-54	55-64
G-7 ^a				
Canada	81	78	66	49
France	67	57	47	29
Germany	89	87	81	69
Italy	42	35	21	12
United Kingdom	81	71	62	51
United States	87	88	83	73
Other				
Australia ^b	57	56	51	42
Austria	79	71	65	50
Belgium	60	52	38	24
Czechoslovakia ^c	87	79	68	51
Denmark	67	61	58	45
Finland	82	69	52	31
Ireland	56	44	35	25
Netherlands	68	61	52	42
New Zealand	60	58	55	49
Norway	88	83	75	61
Portugal ^c	21	17	10	7
Spain	41	24	14	8
Sweden	83	76	65	48
Switzerland	87	84	78	70
Turkey	21	14	9	5

a. No data are available for Japan.

b. 1993 data.

c. 1991 data.

SOURCE: Organization for Economic Cooperation and Development, Center for Educational Research and Innovation, International Indicators Project, 1995.

creasing the amount of schooling their youths receive. The U.S. advantage in quantity of schooling is diminishing.

The final part of the story on elementary and secondary education relates to the previous discussion. We have been devoting enormous resources to education but not getting much from these resources. This is the part that leads to the policy conundrum.

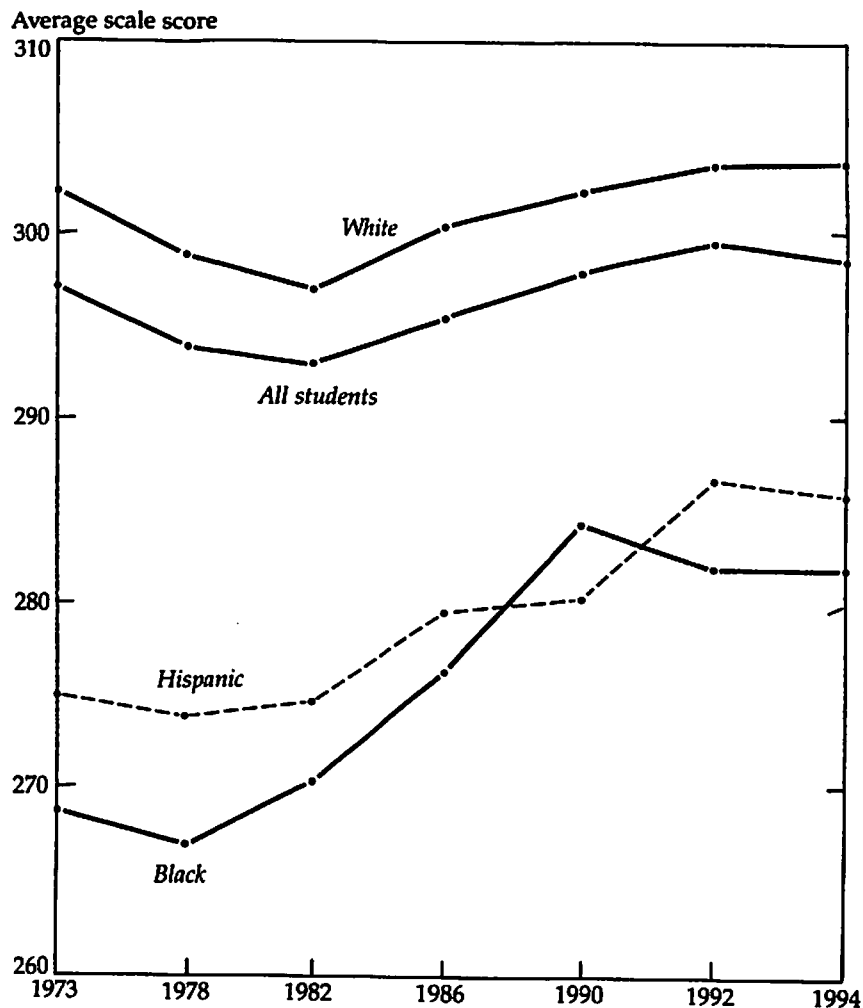
Figure 2-3 is a picture of math achievement in the United States as measured by the National Assessment of Educational Process, currently the best yardstick of student performance that we have. The heavy line in the middle reflects the average scores of seventeen-year-olds on the NAEP over time. It shows that now our students are doing about as well as they did in 1970—even though we are spending three-quarters more in real per pupil spending. It shows essentially the same thing for science, except that instead of being flat, the 1994 performance is below the level of 1970. This picture does not lead anyone to believe that our investment policy is soon going to handle the quality concerns and to push us up to the top of the international rankings. “First in the world in math and science in the year 2000” was the statement of the 1989 National Governors’ Conference. It does not look like we are on that path.

A second revelation contained in this figure is that there is a substantial gap between whites on the one hand and blacks or Hispanics on the other. That gap has narrowed some, but it remains substantial and recently may even be again widening. This brings us back to the equality of opportunity concerns; it also relates to Heckman and Cameron’s discussion in this volume of the importance of the Armed Forces Qualification Test (AFQT) and student achievement in explaining some of the college attendance gaps. Those attendance gaps exist throughout this period and seem to be related to quality of schooling.

The situation with higher education is very different. U.S. higher education is arguably the best in the world. Admittedly, data about higher education are not nearly as good as what we have for elementary and secondary education. It is particularly hard to document quality because we do not have good objective measures. What we do know is:

- U.S. business and industry are willing now to pay a lot more for college graduates than in the past, both in relative terms and in absolute terms.
- Foreign students like to come to U.S. higher educational institutions, whereas none of them want to come to U.S. elementary and secondary schools.
- Employers seem to be a lot better pleased with higher education than they are with elementary and secondary education.

FIGURE 2-3
NAEP MATHEMATICS ACHIEVEMENT SCORE FOR SEVENTEEN-
YEAR-OLDS, BY RACE OR ETHNICITY, 1973-1994



SOURCE: Author.

This adds up to a prima facie case that quality does not appear to be a major problem in higher education—as contrasted with the data displayed earlier, where quality looks like the major concern in elementary and secondary education.

Contemporary Policy Discussion

Having presented this preamble about education issues, I will address the particular policies that have been put forward and discussed at the federal level. I will begin with the proposed elementary and secondary policies and then turn to higher education policies.

My overview of elementary and secondary policies is that they are not very promising. If one looks at the various points made in the president's 1997 foray into elementary and secondary education, one sees a little bit of Internet access, a little bit of ensuring school safety from drugs, a little bit of preschool, and a grab bag of other small items. This was followed by his 1998 emphasis on broad reductions in class size—an apparent effort to duplicate the political popularity of an earlier program to reduce class size in California. It is not a consistent, well-focused policy that one might expect would have a major impact on performance in the schools. The only serious spending component, that for class-size reductions, is not supported by any evidence that would suggest likely performance improvements.

The one feature of the proposals that I do like is the testing and measurement component. I think this is extraordinarily important. We do not know how it might be implemented, but I think it is essential to concentrate systematic attention on these issues. Without better measurement, we will continue to guess about policy without having the type of feedback that is necessary for systemic improvements. Unfortunately, Congress seems little inclined toward expanded testing, in part because of worries about expanded federal intrusions into schools.

The most disappointing aspect of the proposals for me is that nothing is said about the incentives to increase the performance of schools. If we are going to improve our elementary and secondary schools, we have to do something about the incentive structure. Little today directly pushes school personnel to work to increase student achievement or to use resources effectively. There is nothing in this package that has to do with that. The class-size proposals, for example, would maintain the current structure of schools while pursuing a policy that has proved to be an expensive failure.

The other contributors to this volume discuss higher education in detail. In higher education, all the attention is given to the financing of higher education. Nothing is said about quality initiatives, perhaps

because few people think that is an issue. I am not going to try to duplicate or repeat the other presentations. They consider the potential impact of the financing elements that have been largely written into law by Congress. The summary statement is simply that you get very little enrollment response from an expensive package of tax subsidies and grants.

That makes the policies a pure transfer program to the current winners of the system. The people who go to college are the current winners, because they can expect to get considerably higher future incomes. In fact, by the usual calculations, the added earnings attributable to obtaining a college degree will much more than pay for the expenses (both tuition and forgone earnings) of attending. Does it not seem strange that the ones who are going to win in the labor market are getting the transfers, so that their advantages are multiplied?

There may be some transfer to schools in a variety of ways. For example, most private schools offer need-based scholarships and need-based aid. Aid is directly tied to the ability-to-pay assessment of the individual student and family. I presume that private schools are changing their estimate of the need of students based on their ability to recoup money from the recent federal government tax and grant policies. Thus, without raising their tuition, private schools will certainly increase their net tuition receipts, simply by pulling back on other forms of aid.

For public schools, tuition bears little relationship to the costs of offering an education. States subsidize attendance through direct budgetary outlays from general tax revenues, and tuition represents the choice of what portion of costs will be borne by the student and what portion by the general taxpayer. All states ultimately trade off subsidies to college students against other possible spending options (such as elementary and secondary schooling or welfare programs). Thus, the development of new federal programs that ease the financial burden on college students and their families will undoubtedly lead some states to consider altering their current subsidies to public colleges and universities. Indeed, in order for public school students in some states to get the full federal subsidy, tuitions must be raised.

Nothing in the package of higher education policies is directed at altering the quality or performance of colleges and universities. It is entirely a fiscal package of financing aimed at individual attendees. There has, however, been some discussion of whether college tuitions have risen "too rapidly," and of whether this set of policies might encourage further tuition increases. With this idea in mind, some of the fiscally minded policy makers in Washington have begun openly questioning the possibility of regulating tuition at colleges and universities.

Putting aside the question of the advisability of the federal government's intrusion (as a minority stockholder in the public colleges of the United States) in tuition setting, this aspect of tuition policy could actually lead to quite undesirable outcomes in terms of the quality and performance of U.S. higher education—the crown jewel of our total education system.

The nature of the federal education policies leads to a simple question: How could such an approach possibly be justified?

The easiest answer to this question might be that nobody really intends the tax credits to be an education policy. Instead, they are simply a device to transfer resources to the middle class, a group always viewed as key in any political coalition. By disguising this as an "education policy," the purely political fiscal action gains respectability and has an arguable social purpose. In other words, it is simply "good politics."

If, however, we do not accept such a simple answer, we are led to think about when it would make sense to concentrate policy attention on higher education. The strategy focuses most of the attention on the part of the system that seems to be working well, and none, or little, of the attention on the part that seems to be working poorly. Is there any way to look at this set of policies as a second-best investment strategy?

There are two reasons why such an approach might appear to make sense—though ultimately I do not believe it does. One rationalization is that we simply lack ideas about how to improve elementary and secondary education, and therefore we should put our resources into the sector that seems to use resources more effectively. I probably contributed to the promotion of this view in that a lot of my work has suggested that there is not a close relationship between the amount of resources pumped into elementary and secondary education and the performance of students. But that is something different. That is why I differentiate between true educational policies and the pure fiscal and financial aspects. I do not think that the correct approach to the problem is to pump more money into education and to call that "human capital development." At the same time, I want to readjust the program to emphasize elementary and secondary more than higher education. What makes these two notions consistent is that I am opposed to creating a huge budget initiative that throws money, blindly, across the system. The purely fiscal solution is something different from good educational policy as sketched below. Class-size reductions, also discussed below, are simply a very directed and inefficient form of resource policies.

A second rationalization of the current policy focus is the view that we must just accept the current restrictions on the educational

system. This view begins with the notion that the current woes of the elementary and secondary system are caused by the combination of a heavily unionized work force operating within a heavily regulated sector marked by a series of local monopolies. But instead of focusing attention on that set of more fundamental attributes, the current policy response tries to avoid the sector altogether, on the assumption that reform is just too difficult. In other words, rope off the part of the system that is not working and try to make up for it by expanding the part that is working. Indeed, one cynical perspective on the growing call to make fourteen years of schooling the new standard for all youths is that the two years past high school—if provided by well-functioning schools—could make up for what students had not learned in elementary and secondary schools. (Such an expansion of the quantity of schooling does appear roughly to be obligatory to bring U.S. students near the goal of leading the world in math and science, if we keep the average quality of elementary and secondary schools at the current level.) In the end, our federal education programs are clearly not good educational policy. The higher education parts in the programs do not change people's behavior, being almost exclusively a transfer. They do not affect our large problems of quality at lower levels of education. They simply do not increase the amount of human capital available to the economy. Neither of the two rationalizations offered above seems like a good guide for public policy toward education. Accepting either would likely doom our economy to failed competition against the better-educated, better-prepared labor forces appearing in many other world economies. It is simply too expensive to pursue a policy of expanding upon poor quality. Other countries can easily nullify any such attempts by expanding upon high quality.

Altered Educational Policies

A full discussion of different approaches to developing human capital goes far beyond the scope of this discussion. Again, the key element seems to be changing the incentives in the system, so that students, parents, teachers, and school personnel are more strongly motivated to improve achievement. Some of the options are presented in an earlier report by a group of economists interested in improving elementary and secondary schools—*Making Schools Work: Improving Performance and Controlling Costs*, published by the Brookings Institution in 1994. That report strongly advocated changing the structure of schools to incorporate better incentives.

In the context of this discussion of education policy, however, one cannot easily ignore a central difference between our primary and sec-

ondary schools and our colleges and universities. One of the reasons why many people think that U.S. higher education might be doing better than elementary and secondary education is that there is much more competition in higher education than in elementary and secondary education. Part of that competition comes from the way we have chosen to aid students. We give low-income students the resources to go out and shop for a school; that is precisely the mechanism of the Pell grant program. The general prevalence of need-based aid for students with less income also frees choice of schools.

We do not emphasize institutional aid in higher education. Nor do we rely on a paternalistic policy of instructing (regulating) schools to follow the current educational model of how best to educate disadvantaged students who want to pursue higher education. In elementary and secondary education, we do not like those ideas, at least as one can infer by policies. Although the president has indicated some favor for competition in schools, little consistent policy development has followed. Nor has draft legislation been developed. Any policy support falls far short of a Pell grant for disadvantaged students in elementary and secondary schools. Making the distinction between vouchers for higher education and vouchers for lower levels of education on conceptual grounds takes considerable effort and is usually not successful. This fact might reflect the restrictions on the way elementary and secondary schools are organized and run, or it might fit into the noneducational interpretation of the currently proposed policies—it is good politics, as opposed to good educational policy.

An Appropriate Federal Role

An important element to this discussion, nonetheless, is consideration of what the federal government's role should be. Even though education is primarily the responsibility of states and localities, the federal government has some strong and obvious roles.

Perhaps at the top of the list is providing leadership in policy development and evaluation. Since all states can benefit from increased knowledge about how to improve schools, there is a natural advantage to the centralization of expertise and research direction (offset, of course, by the possibility of myopic or inefficient "monopolist" programs). The past history on this score has not been encouraging, however, as the federal government's research program has had limited success in expanding our knowledge.

A closely related potential model for the federal government would be the development of a directed program of knowledge acquisition, patterned after, say, the National Institutes of Health. NIH has

developed a program of serious scientific inquiry into how the health of the population can be improved. Among the components of this program are the extensive use of random-assignment experiments in areas where the full description of how treatments interact with health have eluded us. Adaptation of this approach to education has considerable merit.

We had, in the past, a program of social experimentation in labor supply, in health insurance, in housing, and in a variety of other areas. These social experimentation programs of the 1960s and 1970s provided us with a lot of information about the effects of various public policies and the best ways to conduct random-assignment experimentation. We have not run major experiments since then.

The case for more random-assignment experimentation has been made frequently. Under a range of circumstances, such experimentation promises clearer answers in situations where complicated individual processes are not fully understood and thus cannot be modeled well in statistical analyses. This approach seems particularly appropriate for investigating the effects of alternative incentive structures in schools.

The kinds of policies that will be most effective in schools are the ones that involve changing incentives, so that participants in the system have a stake in the performance of students. One way or another, we need resources to flow toward good performance and away from bad performance, something that does not happen now. In fact, the opposite may often be the case currently.

Unfortunately, we do not know much about how to introduce performance incentives, as they have not been used extensively or evaluated. Thus, we are not building on much information.

Incentive design is easy to motivate in terms of vouchers. There have been broad discussions about whether vouchers are good or bad, but these discussions so far have been abstract and far removed from a discussion of the details of any policy. The discussion of vouchers often looks like a debate contrasting the conceptual ideals of a Communist system against the reality of a mixed capitalist system. On conceptual grounds, the Communist system can always be described as dealing with the undesirable aspects of the capitalist system, even though there is little doubt about the superiority of the capitalist system as compared with whatever Communist system is actually implemented. Similarly, vouchers have considerable conceptual appeal. But we do not know how to structure them in actual schooling situations. One could, for example, think of voucher structures that lead to the significant stratification of society on racial or economic grounds, that promote schools with little academic content, or that lead to other un-

desirable outcomes. We have to consider alternative detailed structures of vouchers and evaluate them. This is precisely the kind of issue for which experimental methods could prove useful.

Vouchers represent just one possible incentive structure. We have, for example, performance-contracting structures that invite private provision of educational services. We have the current rush to charter schools that alter the governance and incentive structure. And we have traditional favorites, like merit pay for teachers. We currently do not know how to organize these alternatives to get the promised benefits without undesirable outcomes. This is an obvious arena in which the federal government can show leadership. The simplest way to provide leadership within the current system of state responsibility would be through serious experimentation with alternative incentive structures and serious evaluation of the results.

The federal government further has an obvious role in expanding opportunities and equity in the system. NAEP scores in the past have demonstrated, for example, significant differences in performance between samples of students who are white, African American, and Hispanic. If we also consider the Cameron and Heckman analysis, which shows the importance of student achievement in terms of college attendance, the larger problem is immediately evident. Disparities in achievement will translate into significant disparities in economic outcomes. The federal government should address some of these concerns.

Indeed, historically the federal government has emphasized the education of disadvantaged students in terms of its budgetary outlays. Large portions of the federal spending on education have been means-tested and aimed at lower-income groups. The recently enacted higher education programs, while income-conditioned, generally increase spending much higher on the income scale than formerly. The breadth of spending makes it difficult to say that it is really directed at needy students.

It is interesting again to contrast the federal perspective in higher education with that in elementary and secondary education. The primary approach to providing aid to disadvantaged students in higher education is the Pell grant, an income-contingent voucher that can be taken to the student's school of choice—whether public or private, religious or sectarian. The primary approach to providing aid to disadvantaged students in elementary and secondary schools is Title I funding—institutional aid to school systems based on the number of disadvantaged students they have. In the thirty years of compensatory education funding at the elementary and secondary level, there has been little indication of any generally favorable outcomes in terms of

student performance. With higher education, while there are concerns about the use of Pell grants at some proprietary schools, little general concern is expressed about the possibility that disadvantaged students are not being significantly aided. Perhaps again we should consider how elementary and secondary education and higher education might be related in policy.

The federal government can and, frankly, should be actively involved in developing a clear human capital policy. Nonetheless, a more focused role than is currently pursued would be more in keeping with prevailing views about the division of responsibility between public and private sector entities and between different levels of government.

Conclusions

Education is important to the U.S. economy, and the federal government should participate in developing policies to encourage human capital development. The federal government should also be concerned about providing equal opportunities to students. These ideas are straightforward and subject to little controversy.

But the mere fact of having a large budget item related to some education program is not sufficient. Recent federal actions have introduced significant tax subsidies and expenditures related to students attending colleges and universities. The best information currently available, however, suggests that few new students will be attracted to college as a result of the subsidy package—implying that this should be viewed mainly as a transfer to students who would otherwise attend college, not as a program designed to change the human capital development of our youths.

That focus has an even more questionable aspect. Today's concern about education is centered on the quality of elementary and secondary schools, while colleges and universities are generally viewed as being quite successful. The logic required to direct policy chiefly at the successful part of the system while ignoring the less successful part is very strained. Perhaps the best argument would involve an admission of defeat in terms of reforming elementary and secondary schools. This argument would then suggest hiring colleges to provide remedial instruction to make up for what the earlier schools did not provide. I believe it is premature to give up on reforming elementary and secondary schools, even though I am also convinced that purely budgetary approaches will not work. Nor will continuation and expansion of past policies that have not proved successful—such as broad reductions in class size.

My own preference, based on an examination of past efforts to

help schools, would be for the federal government to become much more active in developing the knowledge base for effective reform. In the simplest terms, turning even a small portion of tax breaks and subsidies for higher education into a systematic experimentation effort holds much more promise for improving the human capital of our youths than recent policies.

Programs of experimentation and evaluation do not, however, have the same political appeal as transferring federal funds to middle-class families. And advertising tax breaks as supporting the education of our youths has the advantage of wrapping a political fiscal policy in an American flag. That appears to be the trade-off: short-run political gain for long-run development of the national economy.