

SCHOOL CHOICE

# ISSUES

IN THE STATE



**School Choice for New Jersey:**

Many agree with the concept. Some disagree. And some simply want more information. As the public debate continues to grow louder about how best to provide a quality education to all New Jersey children, it is critical to know the facts about school choice, and to have an understanding of how school choice programs have had an impact on communities, parents and students around the country. All of this analysis is done with one goal in mind: The best possible education for all of New Jersey's children.

## The High Cost of High School Failure in New Jersey

Prepared By:  
**Brian J. Gottlob**  
Senior Fellow

The Friedman Foundation for Educational Choice

January 2008

Study released jointly by the Friedman Foundation for Educational Choice, the Latino Leadership Alliance of New Jersey, Excellent Education for Everyone and the Black Ministers Council of New Jersey

A MESSAGE FROM THE FRIEDMAN FOUNDATION:

## OUR CHALLENGE TO YOU

Our research adheres to the highest standards of scientific rigor. We know that one reason the school choice movement has achieved such great success is because the empirical evidence really does show that school choice works. More and more people are dropping their opposition to school choice as they become familiar with the large body of high-quality scientific studies that supports it. Having racked up a steady record of success through good science, why would we sabotage our credibility with junk science?

This is our answer to those who say we can't produce credible research because we aren't neutral about school choice. Some people think that good science can only be produced by researchers who have no opinions about the things they study. Like robots, these neutral researchers are supposed to carry out their analyses without actually thinking or caring about the subjects they study.

But what's the point of doing science in the first place if we're never allowed to come to any conclusions? Why would we want to stay neutral when some policies are solidly proven to work, and others are proven to fail?

That's why it's foolish to dismiss all the studies showing that school choice works on grounds that they were conducted by researchers who think that school choice works. If we take that approach, we would have to dismiss all the studies showing that smoking causes cancer, because all of them were conducted by researchers who think that smoking causes cancer. We would end up rejecting all science across the board.

The sensible approach is to accept studies that follow sound scientific methods, and reject those that don't. Science produces reliable empirical information, not because scientists are devoid of opinions and motives, but because the rigorous procedural rules of science prevent the researchers' opinions and motives from determining their results. If research adheres to scientific standards, its results can be relied upon no matter who conducted it. If not, then the biases of the researcher do become relevant, because lack of scientific rigor opens the door for those biases to affect the results.

So if you're skeptical about our research on school choice, this is our challenge to you: prove us wrong. Judge our work by scientific standards and see how it measures up. If you can find anything in our work that doesn't follow sound empirical methods, by all means say so. We welcome any and all scientific critique of our work. But if you can't find anything scientifically wrong with it, don't complain that our findings can't be true just because we're not neutral. That may make a good sound bite, but what lurks behind it is a flat rejection of science.

# The High Cost of High School Failure in New Jersey

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# Executive Summary

State and local education officials in New Jersey tout the state's high school graduation rate as the highest in the nation. At the same time, independent research indicates that 40 percent of students in Newark drop out and only half of African-American students in urban districts graduate. Meanwhile, there is increasing concern in New Jersey over the meaning of a high school diploma as a sign of academic achievement in a state where nearly 20 percent of students are unable to pass the mandatory High School Proficiency Assessment required for graduation, but still receive a diploma by passing the Special Review Assessment, raising concerns that this may provide a "back door" to a diploma for students who have not been adequately educated.

This study documents the public costs of high school dropouts in New Jersey. It calculates the annual cost of New Jersey dropouts caused by reduced tax revenue, increased Medicaid costs and increased incarceration costs. It also documents the employment impact that dropouts have on the New Jersey economy. It examines objective evidence from the labor market to assess whether employers value a high school diploma as highly in New Jersey as in other states. Finally, the study examines how competition from private schools raises public school graduation rates, and it calculates the dollar value of the public benefits that would follow from increasing New Jersey's public school graduation rates by enacting even a modest school choice program.

Key findings include:

**Each year's class of new dropouts will cost New Jersey \$69.5 million per year throughout their remaining lifetimes, or a total of \$3.5 billion over 50 years.**

- More than 19,000 New Jersey students in the class of 2006 failed to graduate from high school. The state's overall graduation rate is about 82.5 percent. On average, New Jersey's more than 485,000 working-age dropouts earn \$12,400 less annually than high school graduates, resulting in lower earnings of dropouts totaling more than \$6 billion.
- The lower productivity, earnings and expenditures of dropouts cost New Jersey more than \$700 million annually in reduced tax revenues and more than 57,000 jobs across the state.
- Each new class of dropouts produces public costs of \$69.5 million every year for the rest of their lives, or about \$3,645 per dropout.
- Over an expected working lifetime of 50 years, one year's class of dropouts will cost New Jersey taxpayers \$3.5 billion.
- These public cost estimates include costs associated with three sources: lost revenue from taxes and fees; increased Medicaid costs; and increased incarceration costs. Because dropouts also incur many other public costs, the true public cost of dropouts is larger than \$3,645 per dropout per year.

**There is strong evidence that the labor market values a New Jersey high school diploma less than a high school diploma earned in other states.**

- On average, younger high school graduates (ages 20-29) in New Jersey earn just 53.5 percent of what college graduates earn, compared to a national average of 56 percent. High school graduates in New Jersey's key competitor states earn as high as 61 percent of college graduate earnings.
- Statistical analysis shows with high confidence that while New Jersey's college graduates earn more than college graduates of similar achievement in other states when controlling for age, sex and race, New Jersey's high school graduates do not earn significantly more than high school graduates in other states.

- At best, these findings call into question the meaning and value of New Jersey’s high school graduation rates and suggest that high school diplomas are “devalued” by the labor market in New Jersey. Since the labor market value of a diploma largely reflects the perceived value of the education that stands behind the diploma, this devaluing is evidence that employers attribute less value to the education provided in New Jersey high schools.
- Alternative avenues for meeting graduation requirements (such as the Special Review Assessment), which are less rigorous than the principal requirements, likely contribute to the devaluation of all high school diplomas—including those earned through the regular, more rigorous path as well as those earned through alternative paths.

**School choice can improve public school graduation rates and produce millions of dollars in public savings.**

- School districts with more students in private schools have higher public school graduation rates. Increased competition from private schools benefits all New Jersey children, not just those attending private schools.
- The beneficial effect of private school competition on public schools is large enough that even a modest school choice program, one that increased New Jersey private school enrollment by fewer than 6 percentage points, would reduce the number of public school dropouts in the state by 2,500 to 5,300 students a year, saving New Jersey citizens between \$9 million and \$19 million in tax revenue, Medicaid costs and incarceration costs every year.
- The total savings from preventing these students from dropping out, over an expected working lifetime of 50 years, would be between \$465 million and \$956 million.

## About the Author

Brian J. Gottlob ([bgottlob@poleconresearch.com](mailto:bgottlob@poleconresearch.com)) is the Principal of PolEcon Research. For 17 years Gottlob has analyzed economic, demographic, labor market industry and public policy trends for private sector, government and nonprofit organizations. He has extensive experience in developing econometric models and has completed studies on a range of economic, tax policy, energy, education, and health care issues in the States of New Hampshire, Virginia, Ohio, New Mexico, New York, Texas, Oregon, Michigan, Georgia, Mississippi, West Virginia and Illinois. Gottlob is a Senior Fellow at The Friedman Foundation for Educational Choice. He has been an instructor at the Whittemore School of Business and Economics at the University New Hampshire, a member of the Advisory Board of the New England Economic Partnership (NEEP) and a member of the National Association of Business Economics. Prior to founding PolEcon, Gottlob was a Vice President for Fiscal and Economic Policy at the Business and Industry Association of New Hampshire. He has an undergraduate degree in economics from the State University of New York and a graduate degree in public policy analysis from the University of New Hampshire.

## About the Friedman Foundation for Educational Choice



The Milton and Rose D. Friedman Foundation, dubbed “the nation’s leading voucher advocates” by the Wall Street Journal, is a nonprofit organization established in 1996. The origins of the foundation lie in the Friedmans’ long-standing concern about the serious deficiencies in America’s elementary and secondary public schools. The best way to improve the quality of education, they believe, is to enable all parents with the freedom to choose the schools that their children attend. The Friedman Foundation builds upon this vision, clarifies its meaning

to the public and amplifies the national call for true education reform through school choice.

## About the Latino Leadership Alliance of New Jersey



In 1999, four hundred Latino leaders from diverse organizations across the State of New Jersey convened a conference at Rutgers University that concluded in the creation of the Latino Leadership Alliance of New Jersey. As a non-partisan, non-exclusive organization, our diverse constituency is bound together by mutual strengths and common goals. Only in this way may we ensure that LLANJ plays a part in cultivating our next generation of Latino leaders. Today, members of LLANJ join together to create one voice for Latinos in New Jersey. In representing Latino parents, primary and secondary educators, community leaders, law enforcement, health care professionals, religious leaders, immigrant groups, student leaders and business

professionals, we recognize how our various needs interconnect and work as a collective unit to shape the role of Latinos in New Jersey.

## About Excellent Education for Everyone



Excellent Education for Everyone (E3) is a coalition of New Jersey citizens from across the political spectrum, from all races, all religions, and all regions of the state. E3 supports policies and initiatives designed to empower low-income parents in urban districts through parental choice in education. E3 believes that urban public schools systems will only reform when low-income parents are empowered to reward or punish their local public schools by selecting better performing public or private school for their children. E3 supports a wide range of choice reforms including charter schools, magnet

schools, opportunity scholarships, tax credit scholarships, vouchers and open-enrolled public schools.

## About the Black Ministers’ Council of New Jersey



The Black Ministers’ Council of New Jersey seeks to bring the strength of African American religious leadership in the state to the forefront of American life, with special emphasis on public issues growing out of problems of African Americans as a racial and cultural minority; to lift the level of African Americans economically, socially and morally, by every means appropriate to and in unison with the spirit and teachings of Christian faith; to unite African

American churchmen throughout the state, in order to effect strategies related to the empowerment of the African American community; and to enhance the contribution of African American churches and churchmen and their participation in the larger religious fellowship across racial and denomination lines.

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## Foreword

For the Latino Leadership Alliance of New Jersey—the Latino advocacy umbrella organization that represents most of the leading Latino organizations across the state—education reform has always been one of our highest priorities. Above all things, education is the greatest of equalizers.

Yet in New Jersey, which spends over \$14,000 per public school student, and where spending on Hispanic and African-American students in cities like Newark is as high as \$20,482, we found that our citizens overall, and students of color in particular, are being shortchanged.

Minority parents are told that New Jersey’s public schools are among the best, if not the best, in the nation. The governor relayed in his 2007 State of the State address that “we have the highest graduation rate in the nation,” and “whatever we do, we must keep and enhance the nation’s best school system.” The New Jersey Education Association also asserts in its advertising that New Jersey has the number one graduation rate in the country, and that we have some of the country’s best scores on the National Assessment of Educational Progress.

What they do not tell us, however, is far more troubling.

- Almost 20 percent of the state’s graduates are unable to pass the standard high school proficiency assessment, which is described by the state’s commissioner of education as a “middle-school level” test. If these students are removed from the graduation tally, New Jersey’s graduation rate is not first in the nation, but 24th;
- An analysis by Time magazine showed our state-based assessments, which indicate a statewide average of 82.5 percent of fourth graders testing proficient or above in reading, are significantly less rigorous than those of the National Assessment of Educational Progress, where New Jersey students tested 45 points lower on fourth grade reading;
- The state’s largest newspaper reports that only 25 percent of New Jersey high school graduates who attend in-state colleges get a degree in six years, and at least a third of them need remedial courses;
- And the vice president of the state Chamber of Commerce, a leader in secondary education reform in the state, reveals “[New Jersey’s] high school diploma doesn’t mean anything to employers. It used to be a ticket to the middle class, but not anymore.”

The families represented by the Latino Leadership Alliance, more than anything, want honesty. The confused or convoluted information that populates the education landscape rings more of secrecy and subterfuge than of transparency and accountability. And no one knows this better than the parents and students of families that continue to be underserved despite some of the nation’s highest per-pupil spending.

The members of the Latino Leadership Alliance’s education committee were shocked and disturbed by the content of this study. Its attempts to calculate the cost, both financially and socially, of students who do not complete or attain high-school level skills paint, in fine detail, the reality we must face if we are serious about fixing the problems of K-12 education.

However, the issues this study raises are not new, and perhaps that is the most important message that should be taken from it. Activists, policy makers, and education reformers must understand that the data contained within these pages, though vital to putting a fine, sharp edge on the problem, ultimately reflect unwillingness on the part of state and local departments of education to embrace substantive reforms that deal with issues such as dropout rates, low standards and diploma devaluation. Notably, in communities where English is often spoken as a second language, students are tracked early into classes that are not challenging and where the caliber of instruction is low. Students are labeled early and there is an assumption that they will not be successful. This is catalytic in the dropout dilemma.

But focusing on dropouts, or 12th-grade students who are unable to pass a middle-school-level assessment battery, as is the case in New Jersey, is simply examining the symptoms, while the dysfunction inherent in many K-12 systems—particularly those with large numbers of minority students—destroys our children along the way.

This study is a call to action. Its cry must be heard. And its consequences must be fielded with seriousness and immediacy.

—*Martin Perez, Esq.*  
*President, Latino Leadership Alliance of New Jersey*



## Introduction

Across the nation, increasing attention is being focused on high dropout rates in public high schools. New Jersey takes pride in reporting one of the highest graduation rates in the nation. Most independent analyses of the graduation and dropout rates in New Jersey indicate that dropout rates are somewhat higher than officially reported, but all agree that, relative to other states, New Jersey has one of the lowest dropout rates in the nation.

However, among some demographic groups and in some school districts, graduation rates are as troubling in New Jersey as they are elsewhere in the country. For minority students and students trapped in failing school districts. The public school system's inability to serve all its students well not basic questions of equity and social responsibility and it creates enormous taxpayer costs in a state with the nation's highest level of per-student education spending (about \$15,000 per student).<sup>1</sup>

The individual consequences of not graduating from high school are well-documented, but there also are substantial public costs when individuals do not graduate from high school. Public costs result when dropouts contribute less to the economy and consume more public services. Lower rates of labor force participation, higher rates of unemployment among those who are in the labor force and lower wages and salaries for those employed all are consequences of the failure to obtain a high school diploma. When individuals attain higher levels of education, associated public benefits come in the form of lower use of public assistance programs, better health, lower rates of incarceration and overall lower social service expenditures. At the same time, higher educational attainment increases productivity, employment, economic growth, income and tax revenues.

Most school districts and states dramatically understate the number of students who leave school before obtaining a high school diploma. At the same time, few efforts have been made to calculate the costs of dropouts beyond the individual or private consequences. Consequently, we have an incomplete assessment of the costs to society of high school dropouts and the public consequences of a failure to make reforms to public education that address the problem.

An understanding of public costs and benefits is fundamental to debates about education reform, but they rarely are documented. Over the past two decades, citizens have supported higher spending on public schools and myriad reform initiatives because of the large private and public benefits they expect from improved educational outcomes.

Adding to concerns in New Jersey, thousands of students each year are allowed to graduate by passing an alternative, less rigorous exit examination than the state's High School Proficiency Assessment (HSPA). Neither the state's official graduation rate nor any of the independent estimates takes into consideration that as many as 15 percent of New Jersey graduates are not able to pass the state's basic requirement, but instead graduate by passing a less rigorous exam—the Special Review Assessment (SRA)—or are exempt from having to pass it at all.

Allowing students who are unable to pass the required high school exit examinations to meet graduation requirements via an alternative test raises serious questions about the validity of the state's officially reported graduation rate and also independent estimates. Perhaps most troubling is that by raising questions about the meaning and significance of a high school diploma as a sign of academic achievement, the policy of lowering standards to foster higher graduation rates diminishes the value of all high school diplomas in New Jersey—for HSPA grads as well as SRA grads.

This study addresses several critical education reform issues. First, in estimating some of the public costs associated with a failure to graduate from high school, we provide perspective on the urgency of reform for New Jersey citizens and policymakers who may have little interest in education policy. Second, by documenting the costs associated with dropouts and calculating the likely impact that school choice will have on high school graduation rates, we clarify how school choice benefits are allocated. As evidence mounts that school choice increases the achievement of participating students, opponents of choice increasingly have argued that the benefits to those students are outweighed by the ostensible public costs of choice. In response to this, a fundamental assertion of the school choice movement is that increased competition will improve the quality of public schools and benefit students who remain in them as well as those who participate in choice programs. In this study we, expand the public benefit calculation to include all citizens of New Jersey, not just those with children in schools.

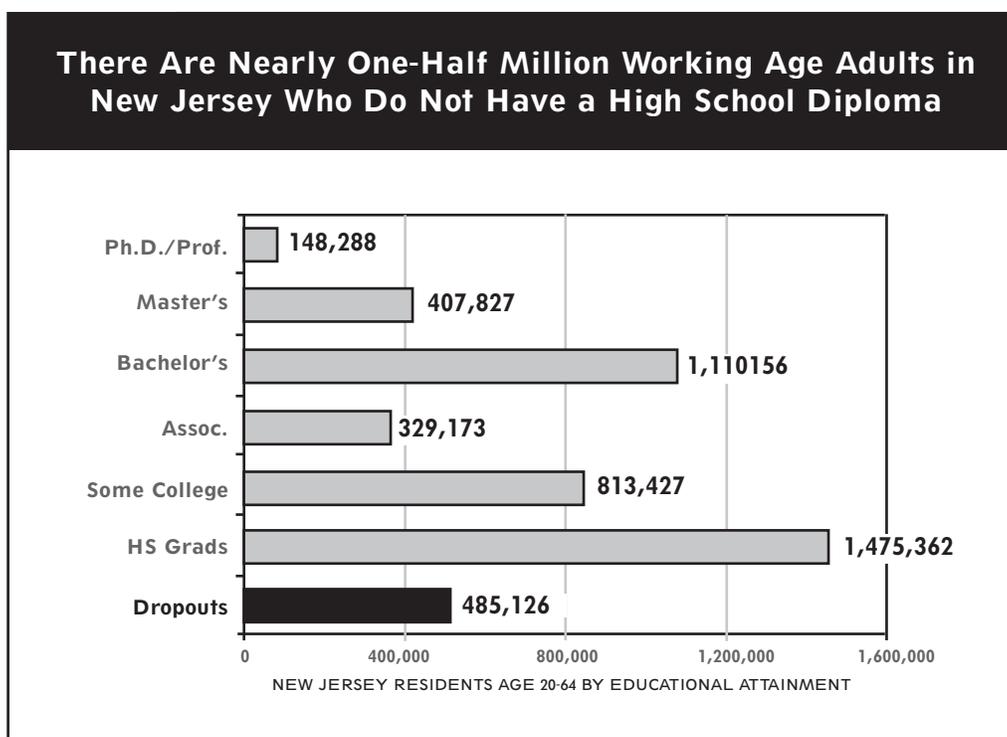
Previous research has found that school choice produces efficiencies that save money in education budgets. One analysis found the total net fiscal effect of school choice programs nationwide from 1990 to 2006 to be \$444 million. The

same analysis found that no state or district with a school choice program had ever experienced a reduction in per-student instructional spending.<sup>2</sup> This study looks beyond the direct fiscal effect of school choice by calculating the social costs of reduced dropout rates. School choice saves money for state budgets even outside of the education category by increasing tax revenue and reducing expenditures on support programs and incarceration.

## The Size of the Dropout Problem in New Jersey

High school graduation is an important predictor of an individual’s future economic success. It also is a key indicator of the performance of school districts. New Jersey ranks in the middle of all states on the percentage of its adult population (age 25 and older) who have at least a high school diploma. With 14 percent of its adult population lacking a high school diploma, New Jersey ranks 26th among all states, just below Ohio and Pennsylvania.<sup>3</sup> Figure 1, which shows the number of New Jersey residents ages 20-64 by educational attainment, indicates that 485,126 such adults do not have a high school diploma.<sup>4</sup>

Figure 1



Source: PolEcon analysis of U.S. Census Bureau’s Current Population Survey March 2005-07 Supplement data for New Jersey

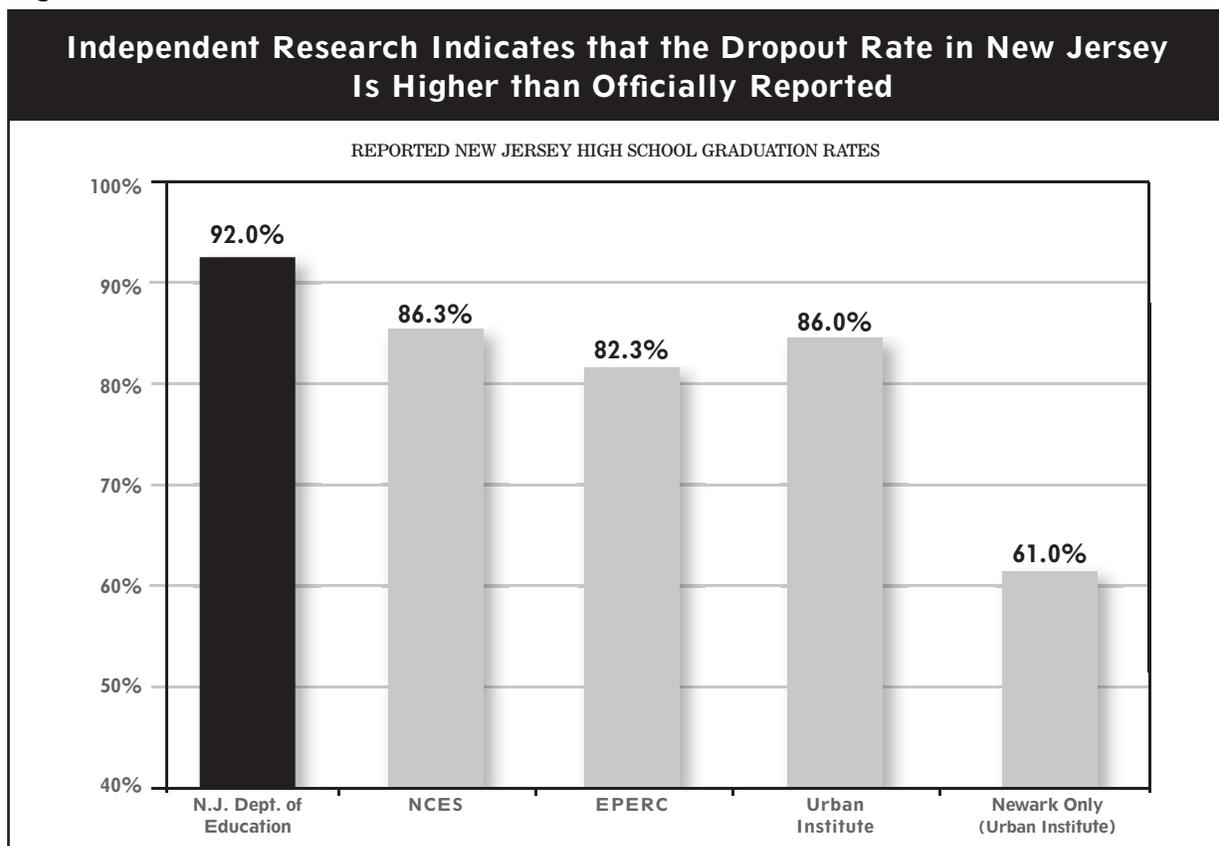
Most states and school districts significantly understate the problem of students failing to graduate from high school, and New Jersey is no exception. Data released by the New Jersey Department of Education for the state’s No Child Left Behind report card imply that the state has a graduation rate of 92 percent.<sup>5</sup> However, all independent estimates place the state’s overall graduation rate lower than that. The most recent estimate by the highly respected Editorial Projects in Education Research Center (EPERC), a research institute established by the publishers of *Education Week*, places New Jersey’s overall graduation rate at 82.5 percent. It also finds that 40 percent of students in Newark drop out and only half of African-American students in urban districts graduate.<sup>6</sup> Estimates by the Urban Institute, the Education Trust of the Bill and Melinda Gates Foundation, the Manhattan Institute and the Higher Education Information Service, as well as our own review of annual enrollment and graduation data, all indicate that the number of dropouts in New Jersey is higher than the state reports.<sup>7</sup> Using the most detailed and thorough alternative estimates of dropout rates, those produced by the EPERC, we estimate that about 19,000 students in New Jersey left high school before obtaining a diploma, rather than the 8,000 or so implied by the official reported state graduation rate and number of high school graduates.

The purpose of seeking more accurate reporting of high school graduation and dropout rates is not to criticize the state’s education agency but to more realistically assess the extent of the dropout problem and to increase public support for confronting it.

### The Special Review Assessment Inflates Graduation Rates and May Devalue All High School Diplomas in New Jersey

The SRA provides an alternate means of obtaining a high school diploma for New Jersey high school students who fail one or both portions of the mandatory HSPA three times. The SRA has become increasingly controversial as the percentage of students who use it to obtain a high school diploma has increased. The increased use of the SRA to meet graduation requirements clearly contributes to New Jersey’s relatively high graduation rates.

Figure 2



This inflation may come at a steep price for all graduates, not just those who use the SRA as an alternate method of fulfilling the state’s graduation requirements. All high school graduates are hurt if employers believe that a New Jersey high school diploma is not a valid signal of academic achievement. When employers have less confidence that a high school diploma is a sign of a qualified employee, they will prefer to hire workers with some postsecondary education – even when no postsecondary education is really required for the job. Lower demand for workers with a high school diploma will reduce wages for these workers, and greater competition for workers with some postsecondary education will increase their wages relative to those with lower educational attainment.

Later we examine wage and salary data from the New Jersey labor market along with those from the remaining 49 states for evidence of such “devaluing” of a high school diploma in New Jersey. We find evidence that it is occurring, especially among young workers.

## Dropouts Cost New Jersey Taxpayers Millions Every Year

For the more than 485,000 New Jersey residents ages 20 to 64 who lack a high school diploma, the consequences of dropping out are clear. The same consequences face the more than 30,000 young people who did not graduate from high school in New Jersey in 2005, and their experiences provide an indication of the public cost and loss of benefits for each year that New Jersey fails to reform public education. First, we will document some of the individual or private consequences of dropping out; then we will calculate some of the public costs.

Table 1

New Jersey Dropouts Have Much Worse Life Outcomes							
	Dropouts	HS Grads	Some College	Assoc. Degree	Bachelor's Degree	Master's Degree	Ph.D./ Prof.
% In Labor Force	68.3%	79.3%	75.8%	84.6%	84.1%	86.5%	94.6%
Unemployment Rate	9.0%	4.5%	5.4%	2.8%	2.3%	2.3%	0.9%
Annual Earnings (Age 20-64) <sup>8</sup>	\$18,124	\$30,550	\$32,947	\$41,413	\$62,042	\$78,629	\$135,398
% on Medicaid or with Child on Medicaid	28.2%	16.0%	11.5%	10.5%	4.8%	3.2%	2.8%
Incarceration Rates (Males Only)*							
White	0.93%	0.39%	0.27%		0.08%		
Hispanic	2.00%	1.2%	NA		NA		
African-Americans	4.11%	2.35%	2.15%		0.75%		

Source: U.S. Census Bureau, Current Population Survey, March 2004-06 Supplement and PolEcon calculations.  
 \*Incarceration rates from U.S. Census Bureau reported in E. Moretti (2005)<sup>9</sup> and PolEcon calculations.

Table 1 shows how some measures of individual outcomes are affected by educational attainment in New Jersey. The table shows that New Jersey residents without a high school diploma are less likely to be in the labor force and are much more likely to be unemployed than high school graduates. Dropouts are much more likely to receive or to have a child who receives Medicaid benefits. Finally, dropouts are more likely to be incarcerated than are those with higher levels of educational attainment.

It is important to remember that these differences in life outcomes are not simply due to the dropouts lacking a piece of paper with the word “diploma” printed on it. They are primarily due to the dropouts’ lack of academic achievement, job skills and other educational outcomes that would help them succeed better. It is not the diploma, but the education that stands behind the diploma, that conveys success.

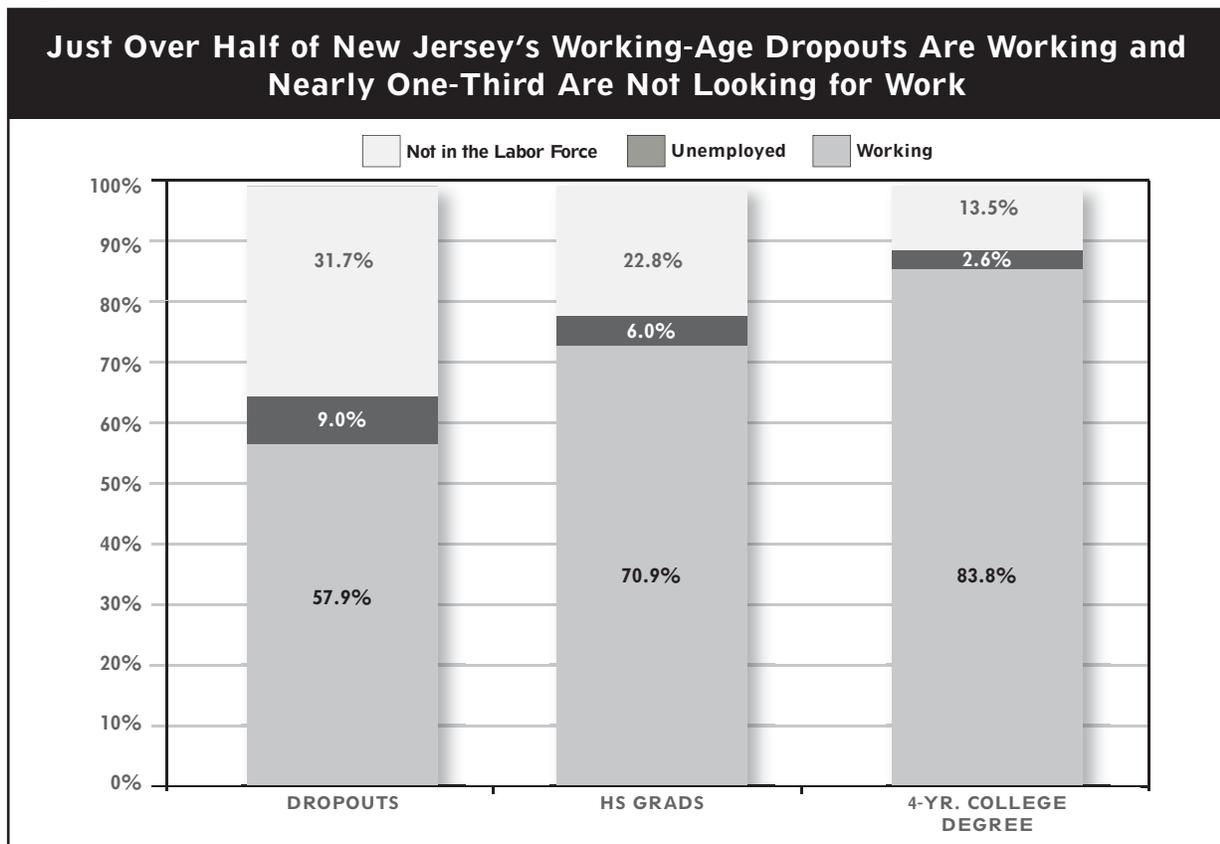
### The Average New Jersey Dropout Earns \$12,400 Less Each Year, Totaling \$6 Billion

Dropouts are less likely to be in the labor force; are less likely to be employed if they are in the labor force; and earn less if they are employed. Figure 3 compares the labor-market status of New Jersey’s dropouts with those of high school graduates and working-age residents with a four-year college degree. The chart shows that 58 percent of working-age dropouts in New Jersey are employed, another 32 percent are not looking for work and 9 percent are unemployed but looking for work. The percentage unemployed in this chart differs from the “unemployment rate” presented in Table 1 and Figure 4 because the “unemployment rate” measures unemployment only among those who are in the labor force and looking for work.

The average annual earnings of dropouts are far lower than those of people who have received a high school diploma. Figure 4 highlights the impact in New Jersey of dropping out in terms of annual earnings in 2006. The chart shows that dropouts earn, on average, \$12,400 less than high school graduates.

The wage and salary differential illustrated in Figure 4 is a result of lower-paying jobs, lower labor-force participation and lower employment rates of dropouts compared to graduates.

Figure 3



Source: PolEcon analysis of U.S. Census Bureau's Current Population Survey, March 2005-07 Supplement data for New Jersey

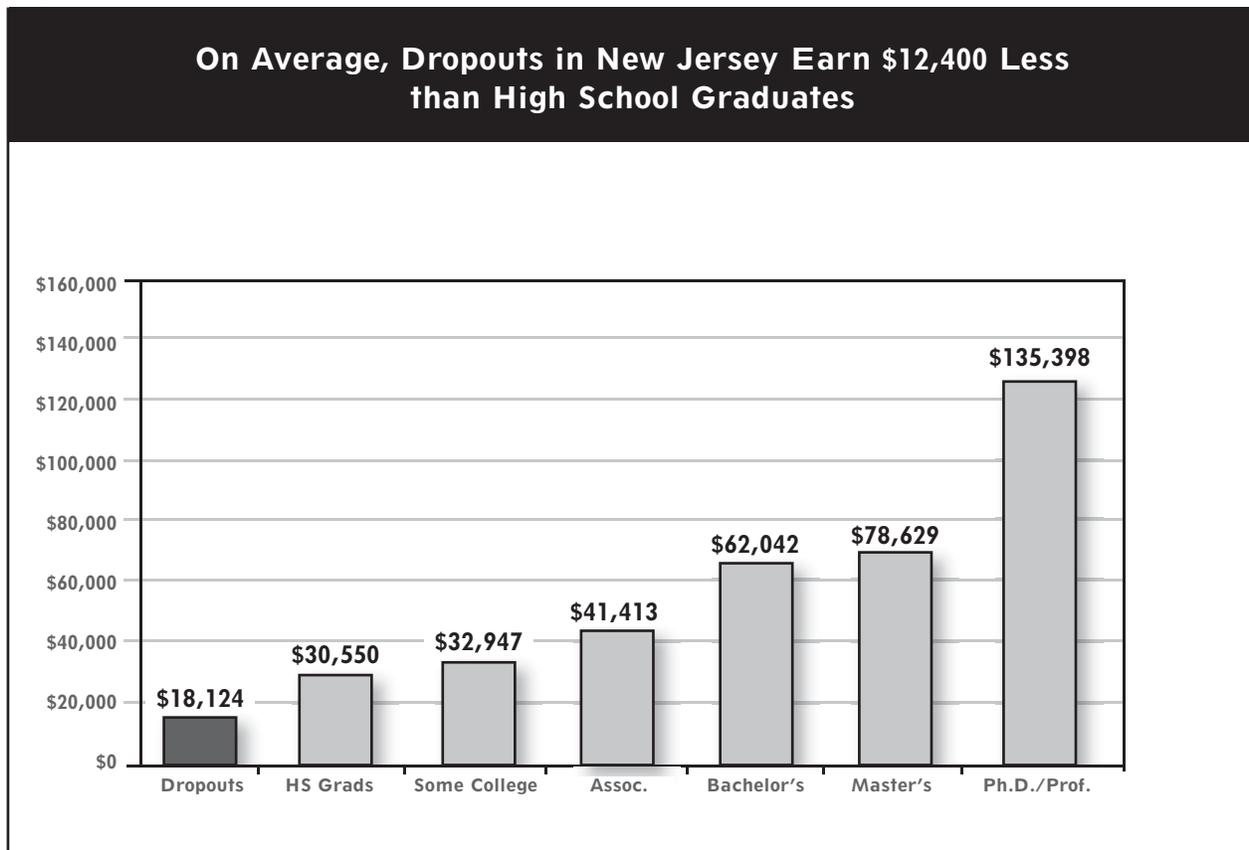
As Figure 5 shows, when dropouts are in the labor force, they have much higher unemployment rates than individuals with at least a high school diploma. The unemployment rate among high school dropouts in New Jersey averaged 9 percent from 2005-07.

Figure 4 depicts the simple relationship between education and earnings. However, because earnings also are a function of other factors, including age, experience, race, ethnicity and sex, we used regression analysis to more accurately estimate the relationship between education and earnings independent of the influences of those factors. We used a subset of more than 7,200 New Jersey respondents to the March 2005-07 Current Population Survey, including individuals ages 20-64 who have completed at least the ninth grade but who had not attended a postsecondary institution, to determine the impact on earnings of a high school diploma and of each additional year of schooling.

We found that, when we isolate the impacts of educational attainment by controlling for other factors, including age, race/ethnicity and sex, high school graduates earned \$12,044 more on average than working high school dropouts. Even among dropouts there is a value to completing as many years of schooling as possible. Each additional year of high school completed by dropouts increases earnings by \$1,202. The difference in annual earnings that we found between dropouts and high school graduates implies that, if all of New Jersey's residents of working age had obtained at least a high school diploma, total earnings in New Jersey in 2006 would have been \$6 billion higher (see Table 2).<sup>10</sup>

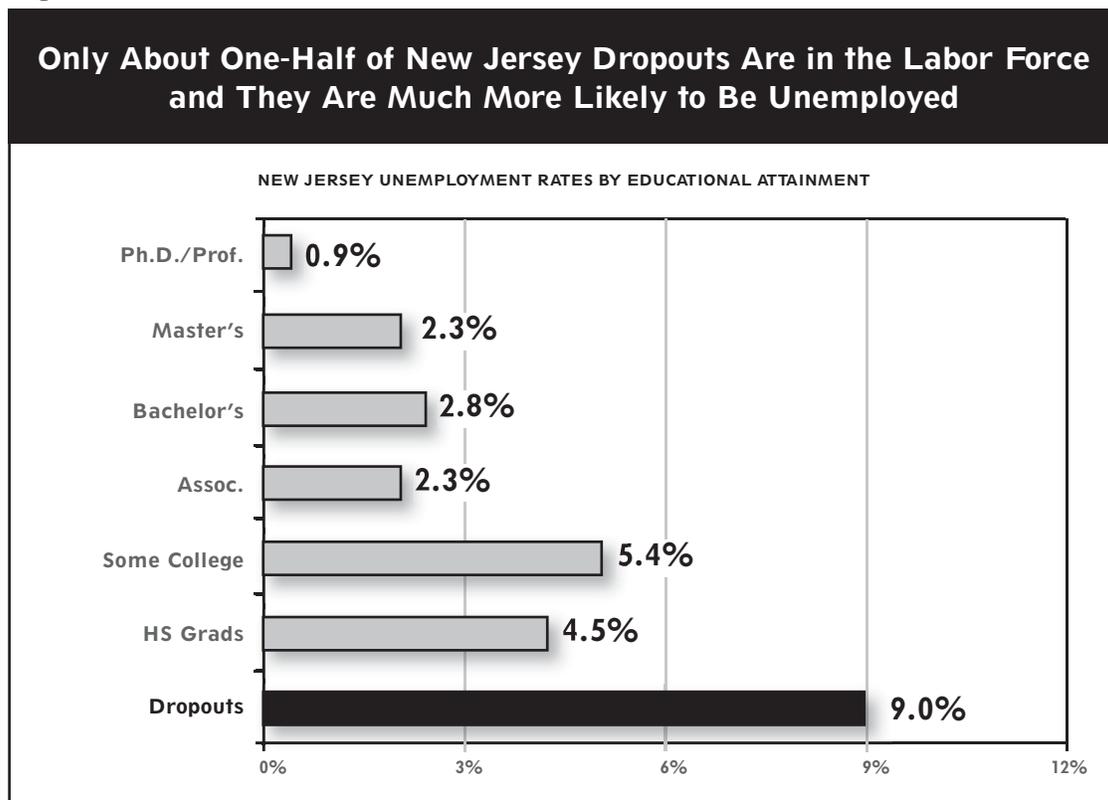
As with the impact of a high school diploma, it is important to remember that the educational benefits associated with additional years of schooling are not simply due to "time served" in schools, but are primarily the result of academic achievement, job skills and other educational outcomes. Simply spending more time sitting behind a desk

Figure 4



Source: PolEcon analysis of U.S. Census Bureau's Current Population Survey, March 2005-07 Supplement data for New Jersey

Figure 5



Source: PolEcon analysis of US Census Bureau's Current Population Survey, March 2005-07 Supplement data for New Jersey

is not by itself necessarily beneficial; these better outcomes are associated with more years of education because of student learning.

Table 2

New Jersey Dropouts Earn a Total of \$6 Billion Less Per Year				
Education Level	Population	Average Earnings	Total Earnings	No Dropouts (All Become HS Grads)
Dropouts	485,126	\$18,124	\$8,792,375,111	\$0
HS Grads	1,475,362	\$30,550	\$45,072,899,245	\$59,893,692,595
Some College	813,427	\$32,947	\$26,799,653,998	\$26,799,653,998
Associate's Degree	329,173	\$41,413	\$13,631,876,863	\$13,631,876,863
Bachelor's Degree	1,110,156	\$62,042	\$68,876,298,552	\$68,876,298,552
M.A./Ph.D./Prof.	556,116	\$93,766	\$52,144,939,691	\$52,144,939,691
<b>Total</b>	<b>4,769,360</b>	<b>\$45,146</b>	<b>\$215,318,043,460</b>	<b>\$221,346,461,699</b>
			<b>Difference</b>	<b>\$6,028,418,239</b>

### The Value of a New Jersey High School Diploma Has Eroded More than in Other States

Officially reported graduation rates that are higher than what independent analyses would support are common among states across the country. New Jersey reports figures that are closer to independent analyses than the reports of many states, but they are still inflated. Concerns about the validity of graduation rates in New Jersey are magnified by the state's high school proficiency examination requirements.

New Jersey requires all students to pass the HPSA or, if they fail that test at least three times, to pass the alternative SRA. As many as 15 percent of New Jersey's high school graduates (more than 13,000) meet graduation requirements by passing the alternative SRA test. At many urban schools, a majority of those who graduate high school do so by passing the alternative SRA exam rather than the state's preferred primary proficiency exam, the HSPA. Additional students are exempt from having to pass the HPSA (although they must still sit for the exam) if they are deemed to have severe disabilities.

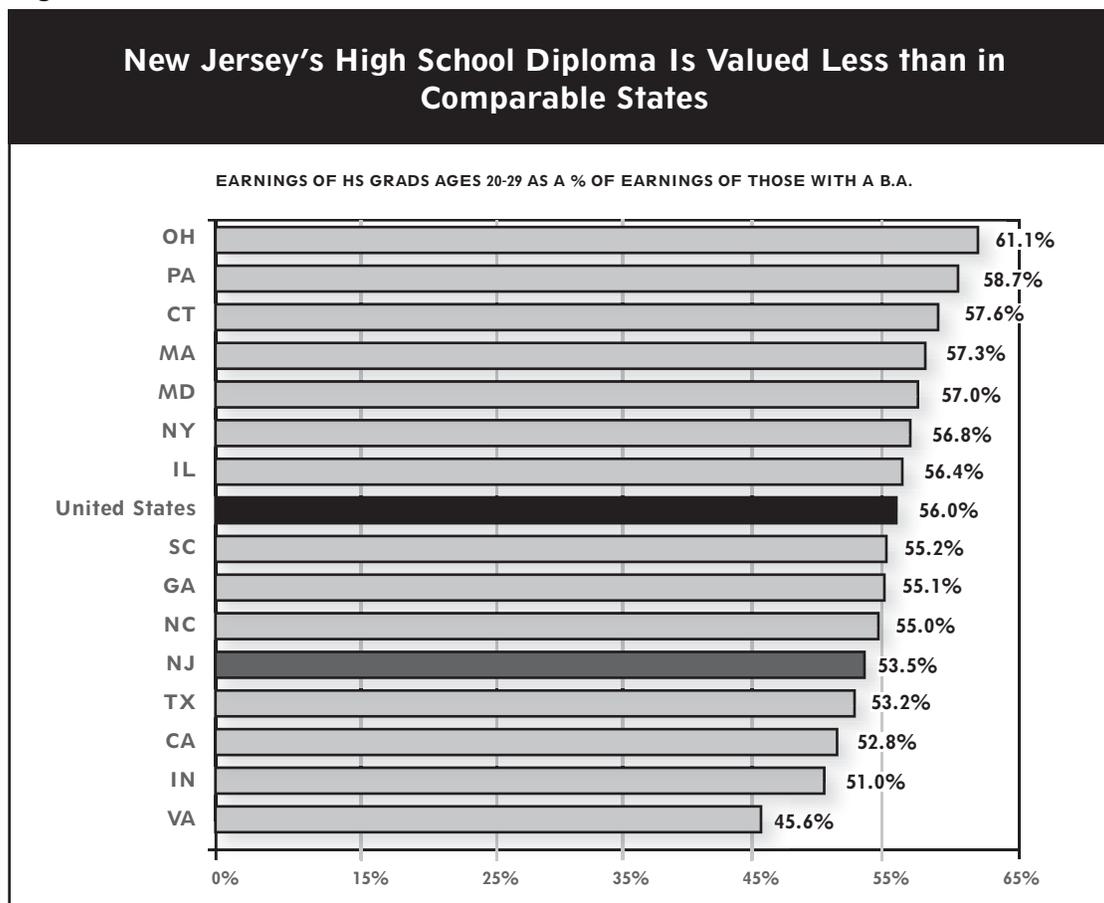
The widespread use of the SRA to meet graduation requirements exacerbates concerns that high school diplomas are losing their value as an indicator of the skills, competencies and educational achievement of graduates. Clearly the extensive use of the SRA increases graduation rates in New Jersey, but more significant impacts are likely to be felt by hundreds of thousand of New Jersey's high school graduates who do not continue their education at the postsecondary level, or are ill-equipped to do so.

While educators, policymakers and others debate the value of the SRA, little attention has been paid to objective signals from the labor market about the value of a New Jersey high school diploma. The economy increasingly rewards education, skills and training. We hypothesized that, because New Jersey does not have a rigorous assessment of high school graduates that signals their competence and skills to employers, employers would be more reluctant to hire workers with only a high school diploma. We further hypothesized that this would be reflected in greater demand for workers with some postsecondary education, lower demand for workers with only a high school diploma, and therefore a larger spread between the average earnings of workers with a high school diploma and those with a college degree.

We use three years of data (2005-07) from the U.S. Census and Department of Labor's Current Population Survey

(March Supplement) to calculate the average wage and salary earnings of workers, broken down by educational attainment, in each of the 50 states. Earnings vary greatly across states, but this does not affect our analysis because the measure of interest is the ratio of earnings of individuals with only a high school diploma to the earnings of individuals with higher levels of educational attainment within each state. In states where the ratio is relatively high, the earnings of high school graduates are closer to the earnings of those with some postsecondary education, a sign that employers value high school graduates more highly relative to workers with some postsecondary education. We compared New Jersey's ratio of high-school-graduate to college-graduate earnings with the ratios of all other states, as well as with those of a group of more urban states, Northeastern states and states with a larger percentage of minority residents.

Figure 6



Results support our hypothesis. Although wages in New Jersey are generally above the national average, New Jersey ranks 40th in the nation for wages earned by high school graduates relative to those of college graduates. Figure 6 compares the earnings ratios of New Jersey high school graduates ages 20-29 with those of other Northeastern states and some “competitor” states. It shows that, compared to most competitor and neighboring states, the ratio of earnings of workers ages 20-29 with a high school diploma to those with a bachelor’s degree is lower in New Jersey. This indicates that a high school diploma in New Jersey is valued less highly in comparison to a postsecondary degree than in most states. States with similar income and educational attainment levels, such as Connecticut and Massachusetts, have higher ratios of earnings for high school grads to college grads than does New Jersey. Uncertainty among employers regarding the capabilities of high school graduates has significantly contributed to employers’ preference for workers with some postsecondary education, even when the job does not require postsecondary training. The net effect is the devaluation, not just of the diplomas of those who use the SRA, but of all New Jersey high school diplomas.

The devaluation of the high school diploma is especially pronounced among African-American residents of New Jersey. African-American high school graduates earn just 46 percent as much as African Americans with a bachelor’s degree.

## Sophisticated Econometric Methods Also Suggest a “Devaluing” of New Jersey High School Diplomas

Based on the results of our basic analysis of the relationship between the earnings of high school graduates and college graduates noted above, we developed more sophisticated measures of the relationship using data from 32,000 respondents to the Census Bureau’s Current Population Survey.

We used a pooled-regression, fixed-effects model to determine if a high school diploma, as well as other levels of educational attainment in New Jersey, resulted in significantly different earnings than the earnings of individuals with a similar educational attainment in other states, when controlling for the effects of age, sex and race or ethnicity. We used only individuals ages 20-29 in our analysis because we hypothesized that the effects of any recent “devaluing” of a New Jersey high school diploma relative to other states would be most apparent among this group.

We found that, on average, the earnings of New Jersey residents, regardless of educational attainment, are much higher than earnings in most other states. Our results show that, when controlling for age, education, sex and race or ethnicity, New Jersey residents with some college, a bachelor’s degree or higher earn significantly more than those in most states. However, a high school graduate from New Jersey, although on average earning more than a graduate in other states before statistical controls are applied, does not earn significantly more when controlling for demographic factors. In addition, high school dropouts only earn slightly more (about \$44) when controlling for age, sex and race or ethnicity. These findings are “statistically significant,” meaning that we can be very certain that our results indicate a genuine difference between the earnings of New Jersey residents and the residents of other states and that the results did not occur by chance.<sup>13</sup>

These results are a strong indication that, based on the value of a New Jersey diploma, New Jersey’s high school graduation rate should be considered to be inflated by the alternative SRA. Without counting graduates who met state requirements through the SRA, New Jersey’s graduation rate would fall in the middle of all 50 states rather than near the top.

More important, the results indicate that not just those who graduate via the SRA are affected by the devaluing of the high school diploma, but all high school graduates. Uncertainty about the competencies of New Jersey high school graduates translates into lower demand and lower wages for their services.

## Dropouts Reduce New Jersey Employment by between 57,000 and 76,000 Jobs

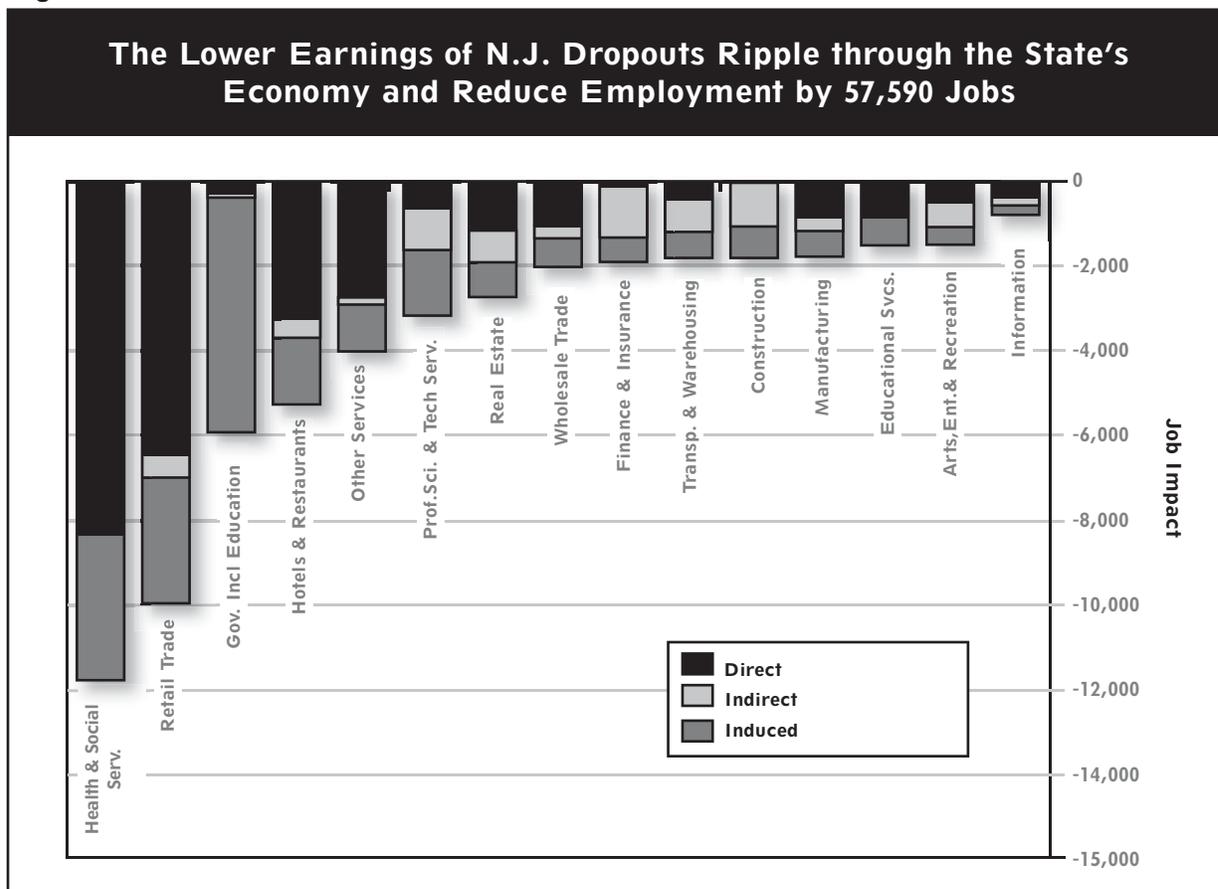
Lower educational attainment and earnings of New Jersey’s dropouts have a significant impact on the New Jersey economy. Higher-quality, better-paying jobs require more productive workers with higher levels of educational attainment. New Jersey ranks in the middle of all states on the percentage of adults who lack a high school diploma but it also has a relatively high percentage of college-educated workers. If even a small fraction of New Jersey’s more than 485,126 working-age dropouts had been given a better education and graduated from high school, the increase in earnings would be substantial. A more productive workforce and higher incomes would result in increased spending on goods and services, which would produce large “multiplier” effects.

We used the IMPLAN economic modeling system to develop a model of the New Jersey economy to estimate the employment impacts of the reduced earnings of New Jersey dropouts.<sup>14</sup> We modeled the impacts as a reduction of \$6 billion in income (see Table 2, above) among New Jersey households in the \$25,000 to \$35,000 income range. The reduced income of dropouts, from direct expenditures and as a result of indirect and induced multiplier effects, result in about 57,590 fewer full and part-time jobs, or about 2 percent of total New Jersey employment. Figure 7 highlights some of the larger employment reductions in broad employment sectors that are attributable to the lower earnings and resulting expenditures of dropouts.

As a check on this model-based estimate of job impacts we employed a second method. We again assumed all 485,126 dropouts ages 20-64 in New Jersey had obtained their high school diplomas and applied to this group the labor-force participation, employment and wage rates characteristic of New Jersey high school graduates. We then compared the employment and earnings the group would achieve as high school graduates compared to their current employment

and earnings as dropouts.<sup>15</sup> This comparison suggests that, rather than 287,403 among this group being employed (as is currently the case while they are dropouts), the number would rise to 363,546, suggesting that an additional 76,143 jobs, again an increase of about 2 percent in New Jersey's total employment, would result if New Jersey's dropouts had been given a better education and earned high school diplomas.

Figure 7



### Dropouts Decrease New Jersey Tax Revenue by \$704 Million Each Year

The higher income of high school graduates relative to dropouts is a substantial private benefit to individuals graduating from high school, but it also produces public benefits to New Jersey taxpayers. Better-educated individuals increase the productivity of the state's economy. In addition to increasing the earnings of New Jersey residents, higher graduation rates would provide additional tax and fee revenues for state and local governments in New Jersey.

We used data on the average earnings of New Jersey dropouts and high school graduates (ages 20-64) from the March Current Population Survey Supplement for 2005-07 to calculate hypothetical tax liabilities using the TAXSIM models developed by the National Bureau of Economic Research. These models estimate tax liabilities based on existing federal and state tax laws and marginal tax rates, including all available tax credits and exemptions. We had to make some simplifying assumptions to calculate tax liabilities. Most important, because we had no data on spousal income for the population of high school dropout taxpayers, we treated all taxpayers as if they were filing as single taxpayers. We calculated state tax liabilities for taxpayers with zero to three dependent child exemptions and weighted the number of returns according to the percentage of dropouts with and without dependent children, as indicated by Current Population Survey data. Because there are a number of additional tax deductions, exemptions or credits that can apply to taxpayers age 65 and older, we limited our tax analysis to residents under the age of 65. The complexities of individual tax filings could not be captured when trying to model more than 485,000 tax returns of working-age dropouts, but our results provide a reasonable estimate that is likely to be within a few percentage points of the true income tax cost associated

with the earnings differential between high school graduates and dropouts.

The estimated impact of dropouts on New Jersey state income tax liability for eight combinations of taxpayer types is presented in Table 3. The table shows that the lower earnings of New Jersey’s working-age dropouts result in state income tax revenues that are \$205 million lower (or about \$423 lower per dropout) than they would be if all residents had attained a least a high school diploma. The \$6 billion in reduced statewide earnings attributable to dropouts results in lower consumer spending, which reduces state and local tax and fee revenue by more than \$499 million (or about \$1,028 per dropout), including another \$60 million in income tax revenue, \$112 million in sales tax revenue and \$222 million in local property tax revenue. Dropouts directly (through their lower earnings and income tax payments) and indirectly (as a result of their lower expenditures and associated multiplier effects) reduce New Jersey state and local tax and fee revenue by an estimated \$704 million annually, or about \$1,451 for each of New Jersey’s 485,126 residents ages 20-64 who lack at least a high school diploma.

**Table 3**

<b>Dropouts Reduce New Jersey Tax Revenue by \$704 Million Each Year</b>					
	Total Income	Dependent Exemptions			
		No Children	1 Child	2 Children	3 or More Children
HS Grads	\$30,550	\$447	\$421	\$395	\$368
Dropouts	\$18,124	\$240	-\$266	-\$572	-\$593
	Difference	\$207	\$647	\$966	\$961
	X				
	Dropouts	311,550	84,105	57,705	31,766
	(Age 20-64)				
Lost Income Tax Revenue		-\$64,618,586	-\$54,411,730	-\$55,757,456	-\$30,527,126
<b>Total Lost Income Tax Revenue:</b>					<b>-\$205,314,898</b>
<b>Other Lost Tax &amp; Fee Revenue:</b>					<b>-\$498,800,446</b>
<b>Total Annual Revenue Loss:</b>					<b>-\$704,115,343</b>

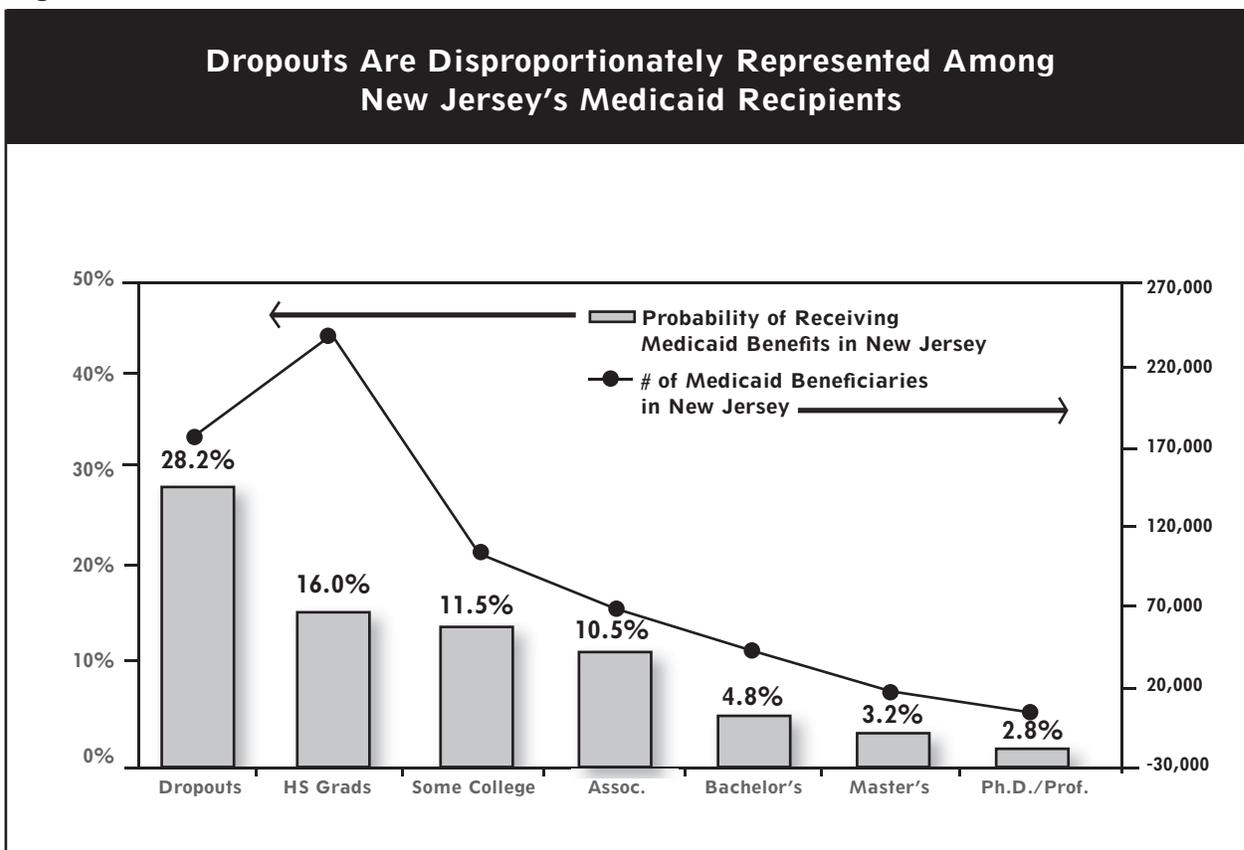
### Dropouts are Twice as Likely to Rely on Medicaid; Dropouts Increase New Jersey’s Medicaid Costs by \$351 Million Each Year

Individuals who fail to obtain at least a high school diploma are at a much greater risk of reliance on safety-net programs such as Medicaid, Temporary Assistance to Needy Families, housing assistance and food stamps. The probability of being a beneficiary of one or more public-assistance programs increases dramatically for individuals who do not have at least a high school diploma.

We focus on the Medicaid program to illustrate the impact of high school graduation on social safety-net expenditures in New Jersey. Medicaid is the largest and most costly safety-net program in New Jersey and across the country. Medicaid expenditures in New Jersey exceeded \$9.1 billion in 2006, of which nearly \$4.5 billion was from state revenue sources (not federal matching funds). Combined state and federal funds for Medicaid accounts for about 21 percent of the total budget of the state of New Jersey.<sup>16</sup>

The cost of Medicaid, which provides health care for lower-income individuals, is shared by the state and federal governments, with the state of New Jersey paying 50 percent of the cost in 2006.<sup>17</sup> About 1.1 million people of all ages—13 percent of the New Jersey population—were enrolled in one or more Medicaid benefit programs in 2004.<sup>18</sup> According to the Vital Statistics Reports of the National Centers for Disease Control, 26 percent of all births in New Jersey were paid for by Medicaid.<sup>19</sup>

Figure 8



Source: PolEcon analysis of US Census Bureau's Current Population Survey, March 2005-07 Supplement data for New Jersey

The probability that an individual in New Jersey will be a Medicaid beneficiary is strongly related to his or her educational attainment. Based on the March 2005-07 Current Population Survey, the probability that a high school dropout or a dependent child in New Jersey receives Medicaid benefits is 28 percent. The probability drops to 16 percent for high school graduates and continues to decline as educational attainment increases.

The Current Population Survey is known to underestimate the number and percentage of public-assistance recipients because of limitations on the individuals included in its samples.<sup>20</sup> It does highlight the relationship between educational attainment and public-assistance costs, but it will produce a low estimate of the cost of dropouts and the impacts of educational reform on public costs and benefits. The estimated public costs of dropouts calculated in this study will therefore be lower than the true costs.

To estimate the Medicaid costs attributable to dropouts, we compared the probability that a New Jersey high school dropout, or the dependent child of a dropout, would be on Medicaid to the probability for high school graduates (about 28 percent compared to 16 percent). We used this comparison to determine the difference in the number of expected Medicaid recipients among high school dropouts and graduates and multiplied this difference by the average cost per Medicaid recipient (not including the administrative costs of the Medicaid program).<sup>21</sup> We multiplied the estimated number of dropouts on Medicaid by the average cost per Medicaid recipient. We then estimated the reduction in the number of people who would be on Medicaid if all high school dropouts had, instead, obtained high school diplomas and calculated the corresponding change in Medicaid costs. Table 4 presents estimated dropout-related Medicaid costs. We estimated that, if all New Jersey dropouts had received high school diplomas, there would be 58,890 fewer Medicaid recipients, saving New Jersey about \$351 million in Medicaid costs annually.

This estimate uses average overall Medicaid costs across all program users. Because dropouts are known to have poorer health than the general population (see below), this method will underestimate the true Medicaid cost of dropouts—probably by a large margin.<sup>22</sup> Also, because the Current Population Survey is known to underestimate the number of Medicaid recipients in the population, as noted above, these figures will underestimate the actual cost of Medicaid related to dropouts in New Jersey.

Table 4

Higher Medicaid Use by New Jersey Dropouts Costs \$351 Million Each Year								
	Population	% On or w/ Child on Medicaid	# On or w/Child on Medicaid	Total Cost = Recipients x Average Cost	State Share of Costs	# on Medicaid if All Graduated	Total Cost = Recipients x Average Cost	State Share of Medicaid Costs
Dropouts	485,126	28.2%	136,574	\$813,571,318	\$406,785,659	0	\$0	\$0
HS Grads	1,475,362	16.0%	236,251	\$1,407,347,207	\$703,673,604	313,935	\$1,870,108,700	\$935,054,350
Some College	813,427	11.5%	93,512	\$557,050,984	\$278,525,492	93,512	\$557,050,984	\$278,525,492
Associate's Degree	329,173	10.5%	34,457	\$205,260,349	\$102,630,175	34,457	\$205,260,349	\$102,630,175
Bachelor's Degree	1,110,156	4.8%	53,603	\$319,313,071	\$159,656,536	53,603	\$319,313,071	\$159,656,536
Master's	407,828	3.2%	13,097	\$78,019,020	\$39,009,510	13,097	\$78,019,020	\$39,009,510
Ph.D./Prof.	148,288	2.8%	4,157	\$24,763,249	\$12,381,625	4,157	\$24,763,249	\$12,381,625
<b>Total</b>	<b>4,769,360</b>	<b>12.0%</b>	<b>571,651</b>	<b>\$3,405,325,198</b>	<b>\$1,702,662,599</b>	<b>512,761</b>	<b>\$3,054,515,373</b>	<b>\$1,527,257,686</b>
	<b>Difference (Annual Medicaid Cost of Dropouts)</b>					<b>58,890</b>	<b>\$350,809,825</b>	<b>\$175,404,913</b>

### Poorer Health of Dropouts Increases Costs for All Health Care Consumers

Dropouts increase the cost of state and federal health care programs because they are less likely to be covered by employers or other privately provided health insurance and because their lower income levels qualify them for publicly provided health insurance. But even when they do not receive publicly provided health coverage, the impact of dropouts on health care costs can be significant if they are unable to pay for the health care services they use. Rising health care costs have resulted in an increasing percentage of “uncompensated care” among health care providers. Uncompensated care increases the cost of health care and health insurance because it results in the shifting of health care costs onto the individuals and insurance providers who do pay for health care.

Figure 9 shows that dropouts in New Jersey are, in general, in poorer health than New Jersey residents who have obtained a least a high school diploma. The poorer health of dropouts increases the cost of publicly provided health care coverage (Medicaid and Medicare) and exacerbates the problem of uncompensated care that increases the cost of health care for private payers.

### New Jersey Dropouts Are Twice as Likely to Be Incarcerated; Each Class of Dropouts Costs an Extra \$3.5 Million Every Year

New Jersey has among the highest annual incarceration costs per inmate (about \$32,400 in 2006) of any state in the nation.<sup>23</sup> The state spent more than \$1.45 billion for its correctional system in 2005, of which all but \$20 million came from state funds.<sup>24</sup> Corrections expenditures account for 3.5 percent of New Jersey’s state budget, a percentage higher than 34 of the 50 states.

Although the chances are small that any one individual will be incarcerated, a New Jersey high school dropout is more than twice as likely as a New Jersey high school graduate to be incarcerated. Our estimates of the incarceration costs associated with dropouts rely on differences in the probability that individuals with different levels of educational attainment will be incarcerated in any one year. Because males account for the vast majority of incarceration costs, we

calculated the impact of dropouts on incarceration costs using only male high school dropouts in New Jersey. Figure 10 shows the probability of white, Hispanic and African-American male dropouts being incarcerated at some point during their lifetimes.

In calculating the impact of dropouts on earnings and Medicaid costs, we rely on individual responses by New Jersey residents to the monthly Current Population Survey. For incarceration costs we have no direct individual measures of educational attainment, criminal activity and incarceration in New Jersey. Instead, we relied on the research of others for our estimates of the impact of dropouts on incarceration rates.<sup>25</sup>

We used those estimates to determine the likely number of New Jersey dropouts from each graduating class cohort who can be expected to be incarcerated during any one year during their working-age lifetimes. Then we used data on the type of crimes and the average length of sentences from the New Jersey Department of Corrections to calculate a “weighted average sentence,” which is applied to each projected incarceration. The weighted average sentence was adjusted based on a weighted average percentage of sentence served, which we calculated using statistics for each class of crime and sentence.<sup>26</sup> This weighted average time served per incarceration was converted to a number of days and then multiplied by New Jersey’s daily cost of incarceration to arrive at an average cost per incarceration.

In addition, we multiplied the costs by 0.6 to estimate the costs associated with recidivism, the tendency of prisoners to be repeat offenders and to be imprisoned more than one time during their lives, generally for longer terms in subsequent incarcerations.<sup>27</sup> Adding the total cost of the first incarcerations to the cost of recidivism gave us a cost of incarceration for one year’s worth of dropouts.

Similar to our estimates of the Medicaid costs attributable to dropouts, our estimates of incarceration costs are the incremental or marginal costs associated with the difference between dropout and high school graduate incarceration rates. That is, our cost estimate is not based on the total cost of dropouts who become incarcerated, but rather the difference in incarceration costs between those with a high school diploma and those who drop out. As with Medicaid costs, even if all students received a high school diploma in the future, the incarceration cost of dropouts would not be eliminated; rather, they would be incrementally reduced to reflect the incarceration rates of high school graduates. That incremental difference is our estimate of the incarceration cost of dropouts.

Our cost calculations do not include any costs for policing or prosecuting, any administrative or capital costs of the prison system required to house a growing inmate population, or costs of parolees and community monitoring, nor did we factor in the costs of crime to victims, property loss or any of the societal benefits associated with lower levels of crime.

Table 5 presents our estimates of the impact that dropouts have on annual incarceration costs. Projecting incarceration costs requires an estimate of the number of dropouts by race, sex and ethnicity.<sup>28</sup> Because New Jersey does not report data that allow independent calculation of these rates, we used an independent estimate of New Jersey’s overall graduation rate (the EPERC estimate) and developed adjusted rates by sex, race and ethnicity by applying the national average differences between each sub-group’s graduation rate and the combined or overall rate for the state.

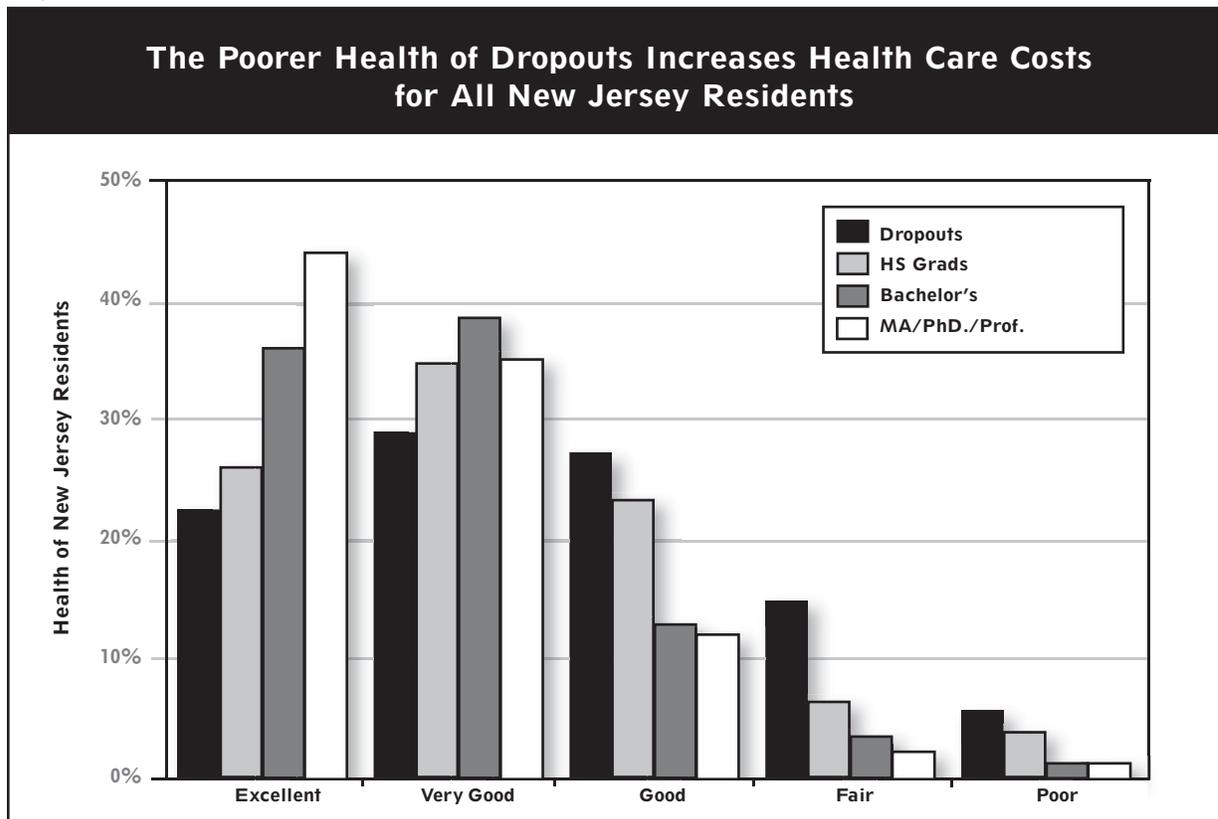
We then calculated the expected number of incarcerations in any one year during their lifetimes for each class of dropouts, based on the number of dropouts that year in the state of New Jersey, and the number of incarcerations expected if all those students had graduated. The impact of dropouts on incarceration costs is the difference between the costs associated with the expected annual incarcerations among a given class of dropouts and the costs associated with the expected annual incarcerations among those same students if they had not dropped out.

Table 5 shows that the 2006 class of dropouts is expected to produce 234 incarcerations in any one year during their lifetimes, but only 108 annual incarcerations if all those students had graduated. If all students graduated in New Jersey, the number of incarcerations in each class of students would go down by about 46 percent and their total lifetime incarceration costs by \$3.5 million. We also divided the cost of one year of dropouts by the total number of dropouts to arrive at an average incarceration cost per dropout.

## On Average, Each Dropout Costs New Jersey More than \$3,600 Each Year of Their Lives After They Leave School

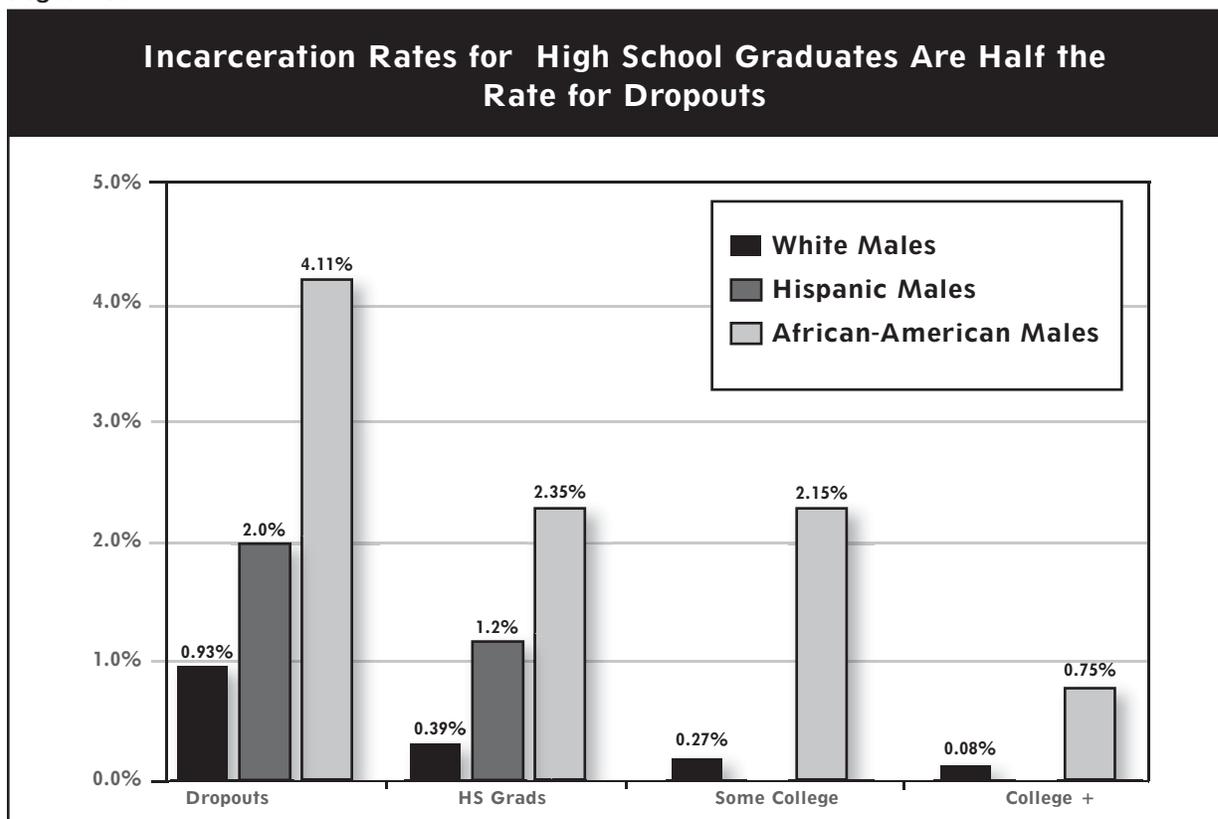
Not every dropout creates state expenditures for Medicaid and incarceration. Some dropouts cost the state tens of thousands of dollars annually, while others may cost the state only some limited reductions in state income-tax revenue.

Figure 9



Source: PolEcon analysis of U.S. Census Bureau Current Population Survey, March 2005-07 Supplement data

Figure 10



Source: U.S. Census Bureau as reported in E. Moretti (2005),<sup>7</sup> PolEcon analysis of Census Data

Table 5

		2002	2003	2004	2005	2006
<b>Each Class of New Jersey Dropouts Increases Annual Incarceration Costs by \$3.5 Million</b>						
Total Graduates		78,013	81,389	83,632	86,445	89,858
Dropouts		16,548	17,264	17,740	18,337	19,061
Graduation Rate (All Races Combined)	82.5%					
African American Male	55.1%					
Hispanic Male	61.3%					
White Male	84.6%					
Cohort African-American Dropouts		5,246	5,473	5,624	5,813	6,042
African-American Male Dropouts		2,564	2,675	2,749	2,841	2,953
Cohort Hispanic Dropouts		5,113	5,335	5,482	5,666	5,890
Hispanic Male Dropouts		2,983	3,112	3,198	3,305	3,436
Cohort White Dropouts		5,709	5,956	6,120	6,326	6,576
White Male Dropouts		3,331	3,475	3,570	3,691	3,836
Expected Incarcerations from Dropouts						
African-American		105	110	113	117	121
Hispanic		66	68	70	73	76
White		31	33	34	35	37
Total Incarcerations		202	212	218	225	234
Expected Incarcerations for w/out Dropouts						
African-American		60	63	65	67	69
Hispanic		36	37	38	40	41
White		13	14	14	14	15
Reduction in Expected Incarcerations						
African-American		45	47	48	50	52
Hispanic		30	31	32	33	34
White		18	20	20	21	22
Total Reduction in Incarcerations		93	98	101	104	108
Projected Incarceration Costs (per Year)		\$5.91	\$6.36	\$6.70	\$7.11	\$7.57
Incarceration Costs With No Dropouts (per Year)		\$3.19	\$3.42	\$3.60	\$3.82	\$4.06
Marginal Cost of Dropouts (per Year)		\$2.72	\$2.94	\$3.10	\$3.29	\$3.51
Multi-Year Cost For Initial Incarceration (\$millions)		\$13.61	\$14.72	\$15.51	\$16.44	\$17.53
Recidivism Cost @ 0.6 Initial Costs (\$millions)		\$8.16	\$8.83	\$9.31	\$9.86	\$10.52
Total Incarceration Costs of Dropouts (\$millions)		\$21.77	\$23.54	\$24.81	\$26.31	\$28.05
Total Cost per Dropout*		\$1,316	\$1,364	\$1,399	\$1,435	\$1,471

Still others may cost nothing. To account for these differences, we spread the cost of one year's class of dropouts across the entire population of new dropouts in that year to arrive at an average cost per dropout.

On average, the state of New Jersey will pay more for each dropout after he leaves school than it paid in state education aid while he attended school. The annual costs of lost tax revenue, increased Medicaid use and increased incarcerations associated with just one year's class of dropouts (an estimated 19,000 dropouts in 2006) is at least \$69.5 million. These costs average about \$3,645 per dropout. Average state education aid (excluding local and federal funding sources) is about \$5,115 per student. Because many other costs associated with dropouts are not documented here; reduced earnings patterns follow graduates their entire lives; and incarceration and Medicaid are multi-year costs, it is reasonable to conclude that the public costs of New Jersey dropouts is substantially greater than our calculations indicate.

More important, the state will continue to incur the cost of each dropout for decades. Citizens of the state of New Jersey continue to pay for the state educational system’s failures well into the future. Over their expected lifetimes of an additional 50 years, the public cost of one year’s class of dropouts is \$3.5 billion, or almost \$1.63 billion in discounted “present value” terms (discounting at 3.5 percent each year).

**Table 6**

<b>On Average Each Dropout Costs New Jersey an Additional \$3,645 Each Year</b>	
<b>Lost Tax Revenue</b>	<b>\$1,451</b>
<b>Incarceration Costs</b>	<b>\$1,471</b>
<b>Medicaid Costs</b>	<b>\$723</b>
<b>Annual Public Cost per Dropout</b>	<b>\$3,645</b>

## The Public Benefits of School Choice in New Jersey

Advocates of competition in education generally believe not only that children who participate in school choice programs will benefit, but that overall productivity of public schools will increase in response to a school choice program. Nevertheless, most research on school choice initiatives focuses on the effects on students participating in school choice programs. A more complete characterization of the effects of school choice would include the impacts on public schools as well. As we have highlighted, the public costs associated with high school dropouts in New Jersey are large. If competition from private schools is associated with higher graduation rates in public schools, then increasing competition via school choice programs not only will produce benefits to public and private school children, but it will be an effective way to increase the quality of public schools and confer large public benefits by reducing the number of high school dropouts.

### Private School Competition Improves Public School Graduation Rates

Assessing the impact of competition from private schools on nearby public school graduation rates requires sophisticated statistical methods. Few studies have employed methods rigorous enough to sufficiently control for confounding influences and thus estimate the true relationship. The main difficulty is that private schools typically do not appear randomly; rather, the demand for private schools arises partly in response to public school quality. In mathematical terminology, the number of private school students and public school quality are “simultaneously determined.” Studies that look at the simple relationship between the percentage of private school students in an area and public school quality could thus draw the inaccurate conclusion that a high percentage of private school students in a district results in lower public school quality, instead of lower public school quality being the catalyst for high private school enrollment.

Some studies have employed adequate methods, and they provide a growing body of evidence that competition from private schools improves achievement in neighboring public schools.<sup>29</sup> Perhaps the best-designed study was conducted by Dee.<sup>30</sup> The Dee study used data from all U.S. counties from the National Center for Education Statistics’ Common Core of Data and found that most studies of the relationship between competition and public school graduation rates “dramatically underestimate the effect of competition from private schools on the rate of high school completion in public schools.” Dee’s results indicate that an increase in the percentage of students enrolled in private schools equal to one standard deviation (or about 5.8 percentage points of total enrollment in New Jersey<sup>31</sup>) is associated with a 1.7-percentage-point decline in the public school dropout rate overall and a 3.4-percentage-point decline in public

school districts where at least 20 percent of students are non-white.

Overall, about 14 percent of New Jersey students in grades 1-12, or more than 199,000 students, attend private schools, according to the New Jersey Department of Education.<sup>32</sup> However, there are large differences in the percentage of students enrolled in private schools across New Jersey's communities. Private school enrollment is higher in larger communities, with many small communities having no children enrolled in private schools. For our analysis of the impacts of competition on high school graduations, we use data from communities with at least 1,000 children in grades 1-12. Private school enrollment in these communities averages about 13 percent, though there is still a wide variation in enrollment levels, as evidenced by a standard deviation of 5.8 percentage points.

Uncertainty about the accuracy of district-reported graduation rates in New Jersey makes it difficult to perform an analysis of the relationship between competition in education (as measured by the percentage of children enrolled in private schools) and public school graduation rates. For our analysis of the public benefits of competition from private schools, we used a range of estimates produced by our research in other states and by research conducted nationally by other economists. We estimate that private school enrollment causes public school graduation rates to increase by between 2.4 percentage points and 4.8 percentage points for every one standard deviation increase in private school enrollment. These estimates fall between the national results obtained by Dees and the results of research in specific states, and are moderate compared to our results obtained using data in other states.<sup>33</sup>

## Even a Modest School Choice Program Would Reduce New Jersey Public School Dropouts by up to 5,200 Each Year, Saving up to \$19 Million Annually

In this section we analyze the impact of an educational reform that would increase enrollments in private schools by allowing New Jersey children to attend the public or private school of their choice using public funds.

Based on the finding (detailed in the previous section) that an increase in private school enrollments will improve New Jersey public school graduation rates due to improved competitive incentives, we calculate that increasing the percentage of New Jersey children enrolled in private schools by 5.8 percentage points would mean:

■ About 80,500 additional students enrolled in private schools.

■ Between 2,554 and 5,243 fewer dropouts from New Jersey public schools each year, due to the positive incentives provided by competition from private schools.

■ Increased tax revenues and reduced Medicaid and incarceration costs of \$9 million to \$19 million as a result of the reduction in public school dropouts. What's more, because dropouts use other social services and incur other costs not included in these three measurements, the total public benefits are likely to be much higher than these figures.

■ Total public benefits of between \$465 million and \$956 million over an expected additional lifetime of 50 years for each class of reduced dropouts, since differentials in earnings, public assistance and incarceration rates between dropouts and graduates are lifelong patterns. The present value of these lifetime benefits, discounted at 3.5 percent each year, is \$218 million to \$458 million. The total value of the lifetime public benefit of each dropout prevented in New Jersey's public schools is about \$182,257, or a present value of \$85,499.

Table 7 presents our calculations of the public benefits that would result from even a modest school choice program in New Jersey. Changing the size of a program to provide school choice to a larger percentage of New Jersey's school-age children and introducing more competition into New Jersey's education system would increase the magnitude of these impacts but not the basic conclusion that the potential public benefit of reducing the number of dropouts, in just three areas of public interest (tax revenue, Medicaid costs and incarceration costs), would be \$3,645 annually and \$182,257 (with a present value of \$85,499) over the working lifetime of each dropout.

Table 7

<b>The Public Benefits of a School Choice Program in New Jersey</b>		
Total Public Enrollment Grades 1-12		1,387,963
Cohort of Potential Graduates		109,316
Current Annual Dropouts		19,061
Increase in % of New Jersey Students in Private Schools		5.8 percentage points
Annual Dropout Reduction	Low Impact Estimate	-2,554
	High Impact Estimate	-5,243
Annual Public Benefits From Increase in School Competition (see Table 6 for Details)	Low Impact Estimate	\$9,309,761
	High Impact Estimate	\$19,112,180
Lifetime Public Benefits of 5.8 Percent Increase in Competition	Low Impact Estimate	\$465,488,072
	High Impact Estimate	\$955,608,976
Lifetime Benefits Discounted to Present Value (at 3.5% per Year)	Low Impact Estimate	\$218,366,207
	High Impact Estimate	\$448,287,980
Average Lifetime Public Benefit of Reducing Each Dropout		\$182,257
Average Lifetime Benefit Discounted to Present Value (at 3.5% per Year)		\$85,499

## Conclusions

This study highlights the public costs of the failure of individuals to graduate from high school in New Jersey. In addition, we examine the labor market for evidence that the value of a New Jersey high school diploma has eroded because of employer concerns that a diploma is not an effective signal of individual abilities and academic achievement. Our analysis of costs and benefits associated with dropouts includes just a few of the largest state programs where the impact of educational attainment on public costs is likely to be most significant. Most important, this study uses objective empirical methods to document the public cost and benefit implications of education policies that often are debated solely on the basis of their impact on individuals.

Each student who fails to graduate from high school in New Jersey creates large public costs. While this fact has been intuitively understood for some time, this study empirically assessed the cost effectiveness of policies that seek to improve the performance of New Jersey's public schools. We conclude that introducing more competition into K-12 education in New Jersey would improve public high school graduation rates; that the impact of competition provides a cost-effective method for improving the productivity of public schools; and that this would bring about a large reduction in the public costs associated with dropouts. In addition, we conclude that, based on a comparison of wages and salaries in all 50 states, there is substantial evidence that employers discount the value of a high school diploma in New Jersey, a phenomenon that is inconsistent with proclamations from education officials about the quality of New Jersey's high schools.

These results indicate that school choice programs, rather than benefiting individuals at the expense of the public, provide large public benefits that probably exceed the benefits realized by students participating in the program.

## Endnotes

- <sup>1</sup> National Center for Education Statistics, *Digest of Education Statistics 2006*, Table 168.
- <sup>2</sup> See Aud, S., "School Choice by the Numbers: The Fiscal Effect of School Choice Programs, 1990-2006," Friedman Foundation, April 2007.
- <sup>3</sup> U.S. Census Bureau, American Community Survey 2006.
- <sup>4</sup> U.S. Census Bureau, Current Population Survey, March 2005-07 Supplement. The survey is known to understate dropout numbers because it does not sample populations in institutions (such as prisons) and because it does not distinguish between those who obtain a GED and those who graduate from high school with a diploma. Because research suggests that the labor market outcomes of a GED student are more similar to those of a dropout than a high school graduate, the distinction is important. Since the survey counts GED recipients as high school graduates, its data will cause us to underestimate the public costs of New Jersey's high school dropouts.
- <sup>5</sup> The N.J. Department of Education's No Child Left Behind State Report 2006 reports a single year high school dropout rate of 1.8 percent, implying a four-year rate of 7.2 percent or a graduation rate of 92.8 percent. The report is available at <http://education.state.nj.us/rc/nclb06/state06.pdf>.
- <sup>6</sup> Swenson, C., "Who Graduates? Who Doesn't?: Supplement to A Statistical Portrait of Public High School Graduation," Urban Institute, Education Policy Center, 2004.
- <sup>7</sup> Editorial Projects in Education Research Center, "Diplomas Count," October 2006; Urban Institute, "Who Graduates? Who Doesn't?" 2005; Education Trust, "Getting Honest About Graduation Rates," June 2005; J. Greene and M. Winters, "Leaving Boys Behind: Public High School Graduation Rates," Manhattan Institute, April 2006.
- <sup>8</sup> For the earnings calculations here, we limited the age range to 20-64 because labor-force participation drops significantly after this age, as do wage and salary earnings, while Social Security income increases among all categories of educational attainment.
- <sup>9</sup> Moretti, E., "Does Education Reduce Participation in Criminal Activities?" University of California at Berkeley, working paper, 2005.
- <sup>10</sup> This estimate is appropriate to illustrate the earnings impact of educational attainment, but it does not consider the "equilibrium effects" that would occur in the New Jersey labor market if all dropouts actually did graduate - that is, the ways in which the larger economy would change as a result of such a dramatic rise in high school graduation rates.
- <sup>11</sup> PolEcon analysis of New Jersey Department of Education data.
- <sup>12</sup> "It's Schools That Fail the Test," *The Star-Ledger*, August, 29, 2007.
- <sup>13</sup> Additional information and statistical measures are available upon request.
- <sup>14</sup> IMPLAN Professional Modeling System, Version 2.1, Minnesota IMPLAN Group Inc., Stillwater, Minn.
- <sup>15</sup> To account for some of the equilibrium effects in the labor market that would result if there were suddenly a much larger number of high school graduates rather than dropouts, we assume that the unemployment rate of high school graduates would rise. Other possible equilibrium effects, such as those on wage rates, were not factored into this analysis.
- <sup>16</sup> Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services, MSIS state summary data and National Association of State Budget Officers, "State Expenditure Report," November 2006.
- <sup>17</sup> The Medicaid matching rate for New Jersey is 50 percent (the lowest possible rate at which the federal government matches state funds) for most but not all Medicaid services. The State Children's Health Insurance Program is a notable exception where the federal government provides a higher matching rate of 65 percent.
- <sup>18</sup> Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services, MSIS state summary data. Note that some of the beneficiaries who receive multiple health care services are double counted or more.
- <sup>19</sup> Centers for Disease Control and Prevention, *National Vital Statistics Reports*, Vol. 51, No. 11, June 25, 2003.
- <sup>20</sup> Callahan, C., et.al., "A Longitudinal Model of Health Insurance, An Update: Employer Sponsored Insurance, Medicaid, and the Uninsured," U.S. Department of Health and Human Services, working paper, 2005.
- <sup>21</sup> We did not include the average cost of disabled Medicaid recipients in calculating a weighted average cost per Medicaid beneficiary because the need for these services is unrelated to educational attainment. These are among the highest-cost Medicaid beneficiaries and the effect of excluding them is to lower our calculation of the weighted average cost per Medicaid recipient. The result is a lower average cost per Medicaid beneficiary than if all beneficiaries were included.
- <sup>22</sup> To account for this underestimation, in our calculation of the total public cost of dropouts (see below), we use the total Medicaid costs associated with dropouts rather than the marginal difference in Medicaid costs between dropouts and graduates. This is likely to be a conservative adjustment compared to the real Medicaid costs associated with the poorer health of dropouts as compared to the total population.
- <sup>23</sup> New Jersey Department of Corrections, <http://www.state.nj.us/corrections/frequentlyasked.html>.
- <sup>24</sup> National Association of State Budget Officers, "State Expenditure Report 2005," November 2006.
- <sup>25</sup> Lochner, L., and Moretti, E., "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self Reports," National Bureau of Economic Research, Working Paper #8605, 2001.
- <sup>26</sup> Data on offenses and sentence length, etc., from N.J. Department of Corrections "Offender Statistics," available at: <http://www.state.nj.us/corrections/offstats.html>.
- <sup>27</sup> Recidivism rate from "The Influence of GED Obtainment on Inmate Release Outcome," N.J. Department of Corrections, 2007.
- <sup>28</sup> In developing our estimates of dropouts, we do not include students who receive state or local "certificates" as graduates or in the cohort of potential graduates. This treatment essentially avoids treating the certificate holders either favorably (as graduates) or unfavorably (as dropouts). For a discussion of the controversies surrounding the awarding of certificates rather than diplomas, see "High School Certificates: New Jersey's Not Quite Diplomas," New Jersey Policy Council, 2005.
- <sup>29</sup> See Forster, G., "Monopoly versus Markets: The Empirical Evidence on Private Schools and School Choice," Friedman Foundation, 2007; and Hoxby, C., "School Choice and School Competition: Evidence from the United States," *Swedish Economic Policy Review* 10, 2003.
- <sup>30</sup> Dee, T., "Competition and Quality of Public Schools," *Economics of Education Review* 17, 1998.
- <sup>31</sup> In determining the standard deviation of the percentage of private school enrollments we used community level data from the U.S. Census Bureau for communities with at least 1,000 school age children (about 250). Among smaller communities there is a much wider range of percentage of children attending private schools.
- <sup>32</sup> New Jersey Department of Education "Vital Statistics" Report, 2006.
- <sup>33</sup> The states are Missouri and New Hampshire.

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