

THE COSTS AND BENEFITS OF AFTER  
SCHOOL PROGRAMS:  
The Estimated Effects of the *After School  
Education and Safety Program Act of 2002*

September 2002

## **PREFACE**

The authors wish to acknowledge support from Afterschool Alliance. Their generosity helped underwrite the research conducted in the course of preparing this report.

As always, the staff of the Rose Institute, Dr. Ralph Rossum, Director, Dr. Florence Adams, Associate Director and Ms. Marionette Sison, Executive Assistant, provided outstanding support for our efforts. We also wish to acknowledge the superb work done by Rose Institute student staff members Bradford Angle, Melinda Baker and Brian Rayburn.

The contents of this report are the sole responsibility of the authors.

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## EXECUTIVE SUMMARY

This report is an analysis of the cost and benefits of *The After School and Education Safety Act of 2002* (“The Act”). The Act expands funding to after school programs in California by \$433 million to reach approximately 485,000 additional students when fully implemented. An expenditure of \$10,038 over grades one to nine for each of these several hundred thousand additional children in the programs produces benefits from a low of \$89,522 to a high of \$129,465 per participant. A simple calculation of benefits minus cost shows that the net benefit of each participant is between \$79,484 and \$119,427. In other words, each dollar invested in an at-risk child brings a return of \$8.92 to \$12.90.

### Summary of Cost and Benefits:

-Cost per participant =	\$10,038
-Effect of The Act	Range of Benefits
1. Reduced Child Care Costs	\$889 to \$1,777
2. Increased Schooling Costs	(\$989) to (\$742)
3. Improved School Performance	\$447 to \$809
4. Increased Compensation	\$29,415 to \$38,284
5. Reduced Crime Costs	\$59,425 to \$88,835
6. Reduced Welfare Costs	\$335 to \$502
-Range of Net Benefits	<b>\$79,484 to \$119,427</b>

Most of this remarkable benefit is derived from diverting a relatively small portion of at-risk youngsters from a future path of crime. An at-risk child who becomes a career criminal costs society anywhere from \$1.4 million to \$1.7 million over his or her lifetime. Therefore diverting even less than one percent of participating at-risk youth from a life of crime saves several times the cost of the program.

Even excluding these substantial crime reduction benefits, The Act is cost effective. Non-crime benefits of The Act are between \$2.99 and \$4.05 for every dollar spent.

Key components of this report's analysis include the following:

- A comprehensive review of existing literature on after school and similar diversion programs both in California and throughout the nation.
- An examination of the limitations of existing research.
- A Sensitivity Analysis indicating that, even *excluding* crime reduction benefits, The Act is cost effective.
- A discussion of the relative benefits to Taxpayers, Crime Victims, and Individual Participants if The Act is implemented.

The conclusion notes that the extent to which these projected benefits are realized is contingent on The Act's ability to reach at-risk youth. As the program expands under the terms of The Act to serve all eligible schools throughout the state, the incremental benefits may decline. It is not possible to determine how many at-risk children will participate in the program. However, reaching even a small fraction of the at-risk children is likely to be cost effective.

## THE COSTS AND BENEFITS OF AFTER SCHOOL PROGRAMS

*“Just beyond the horizon there lurks a cloud that the winds will soon bring over us. The population will start getting younger again. By the end of this decade there will be a million more people between the ages of fourteen and seventeen. This extra million will be half male. Six percent of them will become high rate, repeat (criminal) offenders. Get ready.”* James Q. Wilson (1995)

### **SECTION I: Introduction: At-Risk Youth and the *After School Education and Safety Program Act of 2002***

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As the opening quote from James Q. Wilson suggests, social scientists are concerned with the price we all pay for that portion of youth who are “at-risk” to become repeat offenders – those who remain lost for years in crime, drugs, and lack of useful endeavor. The estimates of the damage that at-risk children end up causing are staggering. Cohen (1998) estimates that the average at-risk youth who becomes a career criminal costs society between \$1.4 million and \$1.7 million over his lifetime. Even without turning to a life of crime, the average student who drops out of high school ends up costing society \$268,133 to \$428,130 when compared to a similar at-risk youth who successfully graduates from high school. The average drug abuser costs society \$408,268 to \$1,070,324 by Cohen’s estimates.

Society derives substantial benefits from saving an at-risk youth. As a result, government entities at all levels have devoted resources to many types of programs that have the potential to influence the behavior of high-risk youth.

After school programs keep students safe and engaged until as late as 6 PM, when they can be returned to the care of their parents. Many of these programs were started by the 21<sup>st</sup> Century Community Learning Center program, a federal government initiative that gave, as of September 2001, 1.5 billion dollars to start 6,000 centers in 1,500 communities. For over ten years nonprofit programs such as LA’s BEST (Better Educated Students for Tomorrow) matched this and other government seed money with private corporate donations. LA’s BEST has expanded from 10 campuses at Los Angeles

Unified School District to over 100 locations today with its after school programs serving 18,000 students.

The State of California added its own funding in 1998 to expand after school programs to meet the growing demand. That program was called the After School Learning and Safe Neighborhoods Partnerships Program (ASLSNPP) and its \$85 million provided incentive grants to help establish after school programs on a pilot basis. The *After School Education and Safety Program Act of 2002* is designed to ensure that existing after school programs continue to receive funding, and to provide programs for additional students when the state budget revenues grow sufficiently to fund the program. When fully funded, the State will provide \$433 million in additional support. Along with increased local funding, this will provide after school programs for approximately 455,000 additional students in California.

While there is some evidence that participation in after school programs has positive effects on participant's educational outcomes (Bissell, 2002; Huang et al, 2000; Lee, 2001), there has been little consideration of the cost effectiveness of these programs. In examining the success of such programs, it is not sufficient to focus only on the direct outcomes or the costs of the program. It is necessary to determine if the benefits derived from the program exceed the costs. The primary purpose of this paper is to examine the potential cost effectiveness of the *After School Education and Safety Program Act of 2002* (known hereafter as "*The Act*").

The costs of the program are straightforward consisting mainly of the increased state and local funding for after school programs. As with most other public programs that focus on youth, it is difficult to measure the benefits that accrue to the individual and to society because the benefits occur over the individual's lifetime. In addition, we can never entirely disentangle the effects of the program from other environmental factors. The most common method of estimating the effects of intervention programs is to conduct a longitudinal study of individuals who participate in the program and compare their outcomes to a control sample of similar individuals who did not participate in the

program. Formal after school programs do not have a long history on a large scale. Thus, there is little data from after school programs that can be used to estimate the potential benefits. This forces us to rely on studies of after school programs that have limited data and other types of intervention programs with detailed longitudinal data.

The related intervention programs consist primarily of early childhood intervention programs. After school programs may yield larger or smaller benefits than early childhood intervention programs. As a result, our estimates of the benefits will be more accurate if the benefits from after school and early childhood intervention programs are closely related. In that regard, Reynolds (2000) finds that the effects of preschool intervention programs are positively reinforced by the continuing intervention in later grades. This indicates that after school programs are likely to have positive effects that are independent of early childhood interventions. Given these factors, we review the existing literature in an attempt to estimate the qualitative nature and the quantitative magnitudes of the benefits that may accrue to society as a result of the Act. Throughout the analysis, we attempt to qualify these results by noting the minimum required impact of after school programs on youth behavior and outcomes needed to make the program cost effective. These baseline estimates indicate that after school programs are likely to be cost effective, even if they only have a small success rate relative to other intervention programs.

## **SECTION II:** The California Experience: The Existing State After-School Program and The Act

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Current State law allocates at least \$85 million for the “Before and After School Learning and Safe Neighborhoods Partnership Program” each year. This program provides funding for *both* before *and* after school programs at selected locations. The most recent appropriation for the program was \$117.5 million in the *2001-02 State Budget*. This program provides competitive grants for schools to offer educational enrichment, tutoring and homework assistance to students. The program requires a local match and gives priority to schools with at least 50 percent of enrolled students eligible for free or reduced-price meals.<sup>1</sup> Under existing law, after school grants generally do not exceed \$75,000 for elementary schools and \$100,000 for middle and junior high schools. However, schools with high enrollment can apply for additional funding.

The Act requires that the State provide each participating school \$5 per child per day for participation in after school programs up to a maximum of \$50,000 per elementary school and \$75,000 for junior high schools. The program applies to all children in grades K-9. Funding is contingent upon the receipt of sufficient additional revenues to cover the cost the program.<sup>2</sup> In other words, the program will not be funded until the economy improves sufficiently to provide the state with enough additional revenue to fund the program. When fully funded, the program will provide \$433 million in additional funding for a total state funding for after school programs of \$550 million.

Each participating school is required to provide a 50% match for all state funding. At \$900 per student per year and \$550 million per year in total grants, the program would be able to serve roughly 610,000 students. This is approximately 10% of the students enrolled in California public schools and represents an increase of approximately 485,000 students from the 125,000 students currently served by state supported after school programs.

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<sup>1</sup> In addition, participating schools are eligible to receive a supplemental grant to operate a program during summer, intersession, or vacation periods. Source: Legislative Analyst Office, January 16, 2002.

<sup>2</sup> The complete details of The Act are available at the California Attorney General’s website: <http://www.caag.state.ca.us/initiatives/activeindex.htm>.

The Act also makes some small changes to the existing program. Existing law permits a school to conduct a before or after school program at a community park or recreational area adjacent to the school site. This measure eliminates the requirement that the offsite location be adjacent to the school and allows a program to occur at any non-school site approved by the State Department of Education (SDE). The Act also makes it possible for schools to offer computer training, fine arts, or physical fitness activities to meet the educational enrichment requirements. Current before and after school programs are planned in collaboration with parents, youth, representatives of participating school sites, governmental agencies, community organizations, and the private sector. The Act expands the planning process to include local law enforcement agencies in order to maximize the potential crime prevention benefits of after school programs.

### **SECTION III : Review of Existing Literature.**

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#### **A: Overview of Literature on At-Risk Youth.**

Cohen (1998) made the most comprehensive attempt to measure the benefits of preventing a high risk youth from participating in future activities that are costly to the individual and to society. Using extensive data about the direct and indirect impact of crime, drug abuse and dropping out of high school, Cohen estimates the present value of the costs imposed upon society by the average career criminal, the average heavy drug user and the average high school dropout. Table 1 presents Cohen's estimates, adjusted to reflect 2001 dollar values. These numbers represent the current value of the lifetime costs of these behaviors. It is clear that the cost to society from the individuals' bad social outcomes is very high, and this suggests that society might be willing to pay a substantial amount to avoid these costs.

	Low Estimate	High Estimate
Career Criminal	\$1,434,455	\$1,655,140
Career Drug Abuser	\$408,268	\$1,070,324
High School Dropout	\$268,133	\$428,130

Source: Cohen, 1998. Estimates adjusted to reflect 2001 dollar values.

Any program that can prevent such behavior at a lower cost would be cost effective from society's perspective. Ideally, we would have data from a random sample of participants and non-participants in after school programs that follow the participants over their lifetimes. We could then determine the impact of after school programs on criminal behavior and estimate the cost savings with these cost figures. Instead we are forced to rely on crime reduction figures from other studies of intervention programs.

However, we can use the Cohen (1998) numbers to draw some useful insights. We estimated in Section II above that the *After School and Education Safety Act of 2002* would allow after school programs to serve approximately 485,000 additional students at

an additional cost of \$433 million per year. *If the program prevented just 0.5% or 2,425 of the additional participants from becoming career criminals each year, the benefits would be between \$3.5 billion and \$4.0 billion per year. This is a return of over eight times the total annual expenditures on the program.*

**B. The California Studies of After-School Programs**

**1. Bissell (2000): University of California, Irvine Evaluation of the Existing State Pilot After School Program**

Bissell (2002) provides an overview of the existing studies of the After School Learning and Safe Neighborhoods Partnerships Program (ASLSNPP) that has operated statewide since 1998. While there is a discussion regarding the broad range of potential benefits of after school programs, the report focuses on educational benefits. The primary limitation of the ASLSNPP study is the lack of longitudinal data that would allow evaluation of the full impact of the program over time.

<b>Table 2: Achievement Gains by ASLSNPP Participants</b>				
	Increase in Students Scoring above 25th Percentile			
	Reading		Math	
	2000	2001	2000	2001
Program Participants	4.2%	7.3%	2.5%	3.8%
Statewide	1.9%	2.7%	1.9%	2.6%
Source: Bissell, 2002.				

Bissell (2002) finds that students who participate in the after school programs have test score gains in reading and math that exceed those of the statewide average. These test score gains are particularly impressive for reading, as noted in Table 2. Bissell also finds that school attendance of program participants increases by 1% the first year of the program but shows no subsequent change in the following year. In analyzing the statewide results for program participants, Bissell also examined matched pair

comparison group evaluations at the same schools. The matched pair results indicate similar patterns of improved relative performance and attendance by program participants.

The improvement in performance is in part the result of better attendance. However, state funding to local school districts is based in part on average daily attendance. Thus, better attendance increases the State's cost. The paradox is that, by improving student outcomes, the after school program may lead to higher education costs. For example, if after school programs reduce high school dropout rates, then the state will be fiscally responsible for educating more students. Likewise, if college attendance increases as a result of after school programs, then the state will face increased higher education costs. This is not a bad outcome; the students who complete high school and attend college will earn higher incomes, pay more taxes and use fewer social programs. However, it should be clear that the primary savings from after school programs do not come from lower educational costs. The benefits come from producing more productive members of the community.

Bissell also found that after school programs reduce grade retention (repeating a grade).<sup>3</sup> Data were collected on 9,408 students in grades 2 through 8 who scored below the 25<sup>th</sup> percentile on the SAT-9 Reading test in Spring 2000. Of these students, 1,195, or 12.7% of the total, were in after school programs in one of the 20 districts participating in the study. The districts reported significant differences between the participants versus non-participants during the time period from Spring 2000 to Spring 2001.

Most of the improvements in grade retention reported by Bissell were found at the primary level. In grade 3, retentions dropped from 7.6% for non-participants to 2.4% for participants – an improvement of 53.4%. Overall, the program prevented 2.1% of student retention in grades 2 through 5. This means that, when applied to the 120,000 students

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<sup>3</sup> Grade retention hurts self-esteem, does not improve achievement, and thus is a useless expense that the State is anxious to avoid. Some \$20 million dollars could be saved if less than 3,000 students of the 176,000 in after school programs did not have to repeat a grade. This savings is expected to increase each year as students are in after school programs for longer periods of time. See Bissell (2002), page 29.

participating in the program, some 2,520 students (2.1% of 120,000) did not repeat a grade. Applied to a cost of \$7,058/student statewide, this generates ( $\$7,058 \times 2,520$ ) almost \$18 million in “savings” (potential costs avoided). There were only slight improvements in middle schools for “savings” of about \$3 million. Yet, the cost avoidance of a projected \$21 million still resulted in a recovery of almost 25% of the ASLSNPP cost.

Overall, the Bissell report confirms that after school programs have a positive effect on students’ educational outcomes. The potential net educational cost savings are not large with after school programs because the most desired positive educational outcome is increased consumption of education through better attendance, higher graduation rates and increased college attendance. However, Bissell indicates that savings from reduced grade retention may offset some of the State’s costs for the increased consumption of education.

## **2. Huang (2000): Evaluation LA’s BEST After School Program**

The Huang, et al. (2000) study is a longitudinal study of LA’s BEST, a “comprehensive intervention” after school program that has been in operation for 12 years. There is no financial cost to the parents and the key benefit is that students are safe and occupied until 6 PM Monday through Friday. The Huang et al. study is the only longitudinal study of the longer term effects of participation. However, the study focuses on student and parental attitudes and not outcomes, which limits its usefulness for estimating potential cost savings.

LA’s BEST is unique both in the length of its evaluation period and in the large number of students involved. The Huang report summarizes findings of five evaluations conducted at UCLA between March 1990 and 1995. The research follows students over a five-year period, 1994-98, and compares them with students not in the program. Some 19,322 students were included: 4,312 in the program and 15,010 as non-participants. Eighty percent of the participants were in the federal lunch program and 60 percent were

classified as Limited English Proficient. Although outcome improvements as measured by test results were modest, there was a marked attitudinal change in the students attending after school programs. The overwhelming (83%) majority said they liked regular school better.

Huang et al. found that, controlling for gender, ethnicity, income and language status, students who had long-term involvement (at least 4 years) in the program experienced increases in achievement. The study found that participation in the program was related to better attendance. Attendance, in turn, was related to higher achievement. The attitudinal effects in students may be of greatest importance over the long term:

*“Such effects (better relationships with adults, higher aspirations regarding finishing school, etc.) can result in significant later dividends. The positive student attitudes associated with the program and the program students’ greater trust of adults in their school environment, for example, may well create students who later in their adolescence find it easier to apply themselves academically, finish high school and pursue higher education.”* (Huang, et al. 2000 p. 15)

The Huang et al. study indicates that after school programs can have positive impacts on student performance and attitudes. The important question that remains is whether these improved attitudes translate into better student outcomes later in life.

### **3. Lee (2001): Crime Prevention**

The Lee (2001) study provides a review of both formal studies and anecdotal evidence that participation in after school programs reduces crime. The disadvantage of the study is that it does not provide a longitudinal analysis of the long run impacts of the programs on crime. In addition, much of the evidence comes during a period in which the overall crime rate is falling, making it difficult to separate out the exact impact of participation in the program. While the study often lacks detailed data, it helps to confirm that one of the most important potential benefits of after school programs is their impact of such programs on crime rates.

The most important result of the study is the anecdotal evidence from community leaders and law enforcement officers indicating that the number of crimes committed by juveniles and against juveniles decreases with the creation of after school programs. That alone could result in large cost savings. If the reduced participation in criminal behavior also continues during participants' later life, then the potential cost savings are further increased. Crime avoidance is a source of major savings in police and other law enforcement, court, prison and victim costs.

### **Summary of the Existing Literature on After School Programs in California**

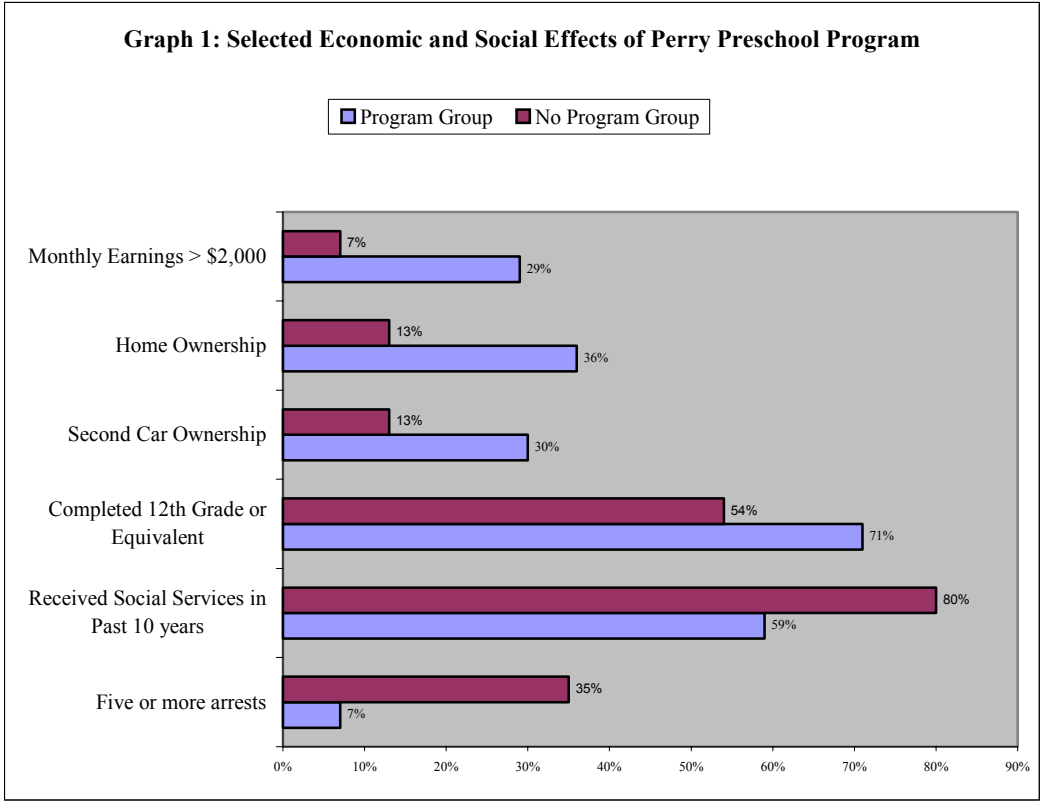
The implementation of large scale after school intervention programs is a recent phenomenon. There are limited data and analysis of the effects of such programs in California and the overall lack of quality data makes it difficult to make accurate quantitative predictions about the effects of participation on the participants' future lives. The limited inferences that can be drawn from the existing studies of the impacts of after school programs in California are consistent with the results from studies concerning other intervention programs. The preliminary studies indicate that after school programs have the potential to improve student performance, increase student attendance, improve student attitudes toward school and reduce juvenile crime. The results also indicate that the greatest potential for cost savings is likely to come from crime prevention and improved educational outcomes. The studies that focus solely on after school programs are limited because the history of the programs is short, which makes it difficult to determine the long run impact on the lives of the participants. In order to provide greater insights into the longer run impacts, we must rely on more detailed longitudinal studies of alternative intervention programs. We turn to these studies now.

## **C. Effects of Intervention Programs Outside of California**

### **1. The High/Scope Perry Preschool Project**

Schweinhart, Barnes and Weikart's (1993) study of the High/Scope Perry Preschool Project in Ypsilanti, Michigan is the most comprehensive longitudinal study of the impact of an early childhood intervention program. The project involved 123 African American families in the community of the Perry Elementary School. Preschool age children in the community were randomly assigned into either the high quality preschool program or the no preschool program group in the early 1960s. The students have since been followed through their school careers and adult lives in order to examine the differences in outcomes and the possible impact of participating in the program. Graph 1 provides an overview of some of the important differences between the two groups at age 27.

The impact of the Perry Preschool project on economic and social outcomes is impressive. Participants in the project are less likely to be arrested, less likely to receive social services, more likely to graduate from high school and have much better economic outcomes.



Source: Schweinhart, et al. 1993.

Table 3 provides an overview of the value of the benefits that Schweinhart et al (1993) estimate accrue to the individuals and society as a result of the Perry Preschool Project. The total benefits of the program are \$108,002 per participant, with costs of \$12,356 per participant, for a total net benefit of \$95,646 per participant. For each \$1 spent on the program, \$8.74 in benefits is created. The bulk of these benefits come from crime prevention. However, excluding the benefits from crime prevention still results in over \$3 in benefits for every dollar spent.

<b>Table 3: Present Value of Preschool Programs Estimated Effects (1992 Dollars)</b>			
Effect	For Participant Only	For Taxpayers/ Crime Victims	Total
<b>Measured Effect</b>			
Child care	\$738	\$0	\$738
K-12 education	\$0	\$6,872	\$6,872
Adult education	\$0	\$283	\$283
College	\$0	-\$868	-\$868
Total Compensation	\$10,270	\$4,228	\$14,498
Crime	\$0	\$49,044	\$49,044
Welfare	-\$2,193	\$2,412	\$219
Total	\$8,815	\$61,971	\$70,786
<b>Projected Effect</b>			
Total Compensation	\$11,215	\$4,618	\$15,833
Crime	\$0	\$21,337	\$21,337
Welfare	-\$460	\$506	\$46
Total	\$10,755	\$26,461	\$37,216
Total Measured/Projected	\$19,570	\$88,432	\$108,002
Cost of Program	\$0	-\$12,356	-\$12,356
Net Benefit per participant	\$19,570	\$76,076	\$95,646
Source: Schweinhart, et al. 1993			

While the Perry Preschool project is not an after school program, the quality of the data provided by the program and the extensive studies of the data make it an important resource in attempting to estimate the potential benefits from all intervention programs. The results of the Perry Preschool Project are clear: Childhood intervention programs can have an important positive impact on the educational and social outcomes of the participating individuals. In addition, the programs are cost effective. If preschool interventions can have such dramatic effects, it is likely that longer term continuing interventions through after school programs will also have positive effects. It is also important to note that, even with the positive effects of the preschool interventions, there

is still much room for improvement in the educational and social outcomes of the participants. It should be noted that the Perry Preschool Program did not suffer from the weaknesses of many other studies because the participants in the Perry Program were randomly chosen.

## **2. The Rand Institute Study**

The Rand Institute (Karoly, et al. 1998) examines multiple studies of early childhood intervention programs. Only two of these programs, the Perry Preschool Project and the Elmira, NY, Prenatal Infancy Program, had sufficient histories and data collection that allowed for a cost benefit analysis. The Rand analysis of the Perry Preschool Project provides similar results to those discussed in the above section. There are estimated net cost savings of \$13,289 per participant. The Rand estimates of the net benefits do not include the intangible costs to crime victims. As a result the numbers are not directly comparable to Schweinhart, et al. (1993).

The Elmira program was estimated to save taxpayers \$18,611 for each high risk youth in the program. The Elmira project also served a group of students who were not defined as high risk. For these students, the program, with a net cost of \$2307 per participant, was not cost effective. The results from the Elmira study suggest that interventions not targeted at high-risk students are less effective. Alternatively, the nature of the program may need to be adjusted to achieve the maximum net benefits for different types of students. However, the benefit estimates from the Elmira study only followed youth through age 15. Additional benefits would be expected to accrue over the life of the participants while the costs of the program have already been incurred. For example, if the study's results are adjusted to include projected impacts that occur after age 15, then the net benefits will be larger and the program would probably be more cost effective for each group.

### **3. Other Studies**

Currie and Thomas (1995) focus on the impact of Head Start programs. They find that Head Start participation has a significant lasting effect on test scores for white children but not for African-American children. The authors conclude that the program is cost effective for white children but not for African-American children. However, Currie and Thomas focus only on test scores. Barnett (1992) examines several studies of preschool education programs including Head Start and the Perry Preschool project. Barnett notes that while most studies find only short-term effects on test scores or IQ scores, the programs are much more likely to have longer-term impacts on social and economic outcomes including employment, teen pregnancy rates and welfare assistance costs. Barnett's main point is that longer-term benefits of intervention programs come in a variety of forms that may differ across different groups of students.

There is some evidence that after school programs are already working to improve graduation rates. For example, Lattimore, Mihalic, Grotmeter, Taggart (1998) compared the Quantum Opportunities Program (QOP) participants to a control group demonstrated that QOP members were more likely to be high school graduates. A full 63% of QOP members graduated from high school compared to 42% of the control group. In addition 42% of QOP members went on to postsecondary schools while only 16% of the control group did so. While 50% of the control group dropped out of high school, only 23% of QOP members dropped out of high school at some point. The Quantum Opportunities Program differs from California after school programs in that each QOP participant had an adult mentor over a four-year period in addition to personal tutoring, and the services covered grades 9 to 12 rather than grades 1 to 9. But the basic concept of an after school program for disadvantaged youth (all participants were from poor families on public assistance) makes comparison reasonable, if not exact.

Critics could argue that California's after school program may have a somewhat reduced impact on increasing high school graduation rates because it serves students at younger ages. But starting with young children also gives California some advantages. Programs are most effective when participants start at a young age. The drop in grade retention

benefits for middle school students discussed by Bissell (2002) in the section above, for example, is typical of findings from other after school programs. Students respond better if they are reached early in development, before serious problems such as illiteracy and alienation take firm root. The evidence from the Perry Preschool project and other early intervention programs is that such programs do have a positive effect on graduation rates. This would indicate that The Act will likely provide individual and social gains through higher graduation rates.

### **Summary: Results of Programs Outside California**

The existing literature on intervention programs indicates that early childhood intervention programs have significant impacts on student performance, future economic outcomes and future social outcomes. After school programs have the potential to affect high risk students in many positive ways. Intervention programs should have sufficient flexibility to work with students with different needs. Some of the benefits, such as higher test scores for high risk students, may be temporary. This suggests that continuing intervention programs beyond the preschool years may be valuable. The most important conclusion from the existing studies is that intervention programs show great promise as being cost effective ways to improve outcomes for at-risk students.

## **SECTION IV: The Cost and Benefits of the After School and Education Safety Act of 2002**

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### A. Estimated Costs of The Act

The direct costs of The Act include the amounts that will be spent directly on the after school programs supported and created by The Act. Every school will be eligible for a grant of \$5.00 per child per day. However, there is annual per school maximum of \$50,000 for elementary schools and \$75,000 for junior high schools. As a result, the costs per student of the program will fall as the program expands within a given school. Those schools that serve primarily low-income students will be eligible for up to \$200,000 in additional funding depending on total school enrollments. Each school must provide a 50% cash or in-kind subsidy matching funding so that the total expenditures on after school programs will equal one and one-half the times of the amount provided for by State grants.

Our analysis will be focused on the costs and benefits of the program expressed in dollars per student. The \$5 per day grant and the 50% matching funds results in a total cost of \$7.50 per student. With a 180 day school year this results in a total annual cost of \$1,350 per student.<sup>4</sup> The state will provide \$900 per student and the local program will contribute \$450.

The costs of the program are spread out over nine years.<sup>5</sup> In this analysis, we compare the lifetime costs of the program with the lifetime benefits. Since the costs and benefits occur over multiple periods and at different times, adjustments must be made so that the numbers are comparable. This requires the calculation of present values and corrects for the time value of money. Present values discount all future dollar costs and benefits by a constant discount or interest rate in order to give them the same time value. Our analysis

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<sup>4</sup> There are approximately 125,000 students currently served by after school programs supported by \$117 million in state funding for an average of \$936 per student in state funding.

<sup>5</sup> Once the program is fully up and running a student could potentially participate in the program from kindergarten through grade 9. However, our calculations in this analysis are based on nine years, grade 1 through grade 9. We focus on these grades because there are many extant early childhood/kindergarten programs, and therefore we were unable to accurately disentangle the benefits of The Act to kindergarten students from the benefits provided by these other early childhood programs

discounts all costs and benefits back to year zero, or the beginning of the program. In the case of the \$1,350 per child per year, we discount these numbers back to year zero to calculate a single lifetime cost per participant. This results in a current dollar cost over the child's nine year participation of \$10,038.<sup>6</sup>

As noted above, there are maximum amounts that a school can receive for after school programs. This is a reflection of the economies of scale associated with such programs. Many fixed (i.e. administrative and overhead costs) should remain constant as the number of participants increase. This would result in lower per student costs and the potential to serve even more students at the current level of funding. Throughout the analysis we use the \$900 per student average annual cost number. Depending on the economies of scale this number could be lower; given the method of allocating funding incorporated in the initiative, the per-student expenditures are not likely to be higher than \$900. As a result, if our costs estimates exhibit any bias, the bias is toward the high side.

#### **Calculation Summary of the Cost of the After School Program**

State:	\$5/day
Local Match:	<u>\$2.50/day</u>
Total	\$7.50/day x 180 days = \$1,350 for one year

***\$1,350 @ 4% for 9 years = \$10,038.***

#### ***B. Estimated Effects of The Act***

The six effects of The Act are summarized in Table 4 below. The narrative that follows explains the derivation of each of these figures in the order presented in Table 4. (Please note: all of the effects are positive numbers with the exception of Effect #2, "Increased Schooling Costs". This single item is shown in negative figures because one estimated effect of The Act is a small increase in schooling costs).

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<sup>6</sup> The current yield on long term inflation protected instruments is approximately 3.25% but this number is low relative to the previous thirty years. The use of a higher rate of 4% will overweight current benefits and costs and underweight future costs and benefits. Given that most of the costs of the program occur early and the benefits occur in the future, our approach provides a conservative estimate of the net benefits of the program.

<b>Table 4: After School Programs Estimated Effects</b>		
Effect	Total Benefits	
	Lower Estimates	Higher Estimates
<b>Estimated Effects</b>		
1. Reduced Child Care Costs	\$889	\$1,777
2. Increased Schooling Costs	-\$989	-\$742
3. Improved School Performance	\$447	\$809
4. Increased Compensation	\$29,415	\$38,284
5. Reduced Crime Costs	\$59,425	\$88,835
6. Reduced Welfare Costs	\$335	\$502
<b>Total</b>	<b>\$89,522</b>	<b>\$129,465</b>
<b>Cost of Program</b>	<b>\$10,038</b>	<b>\$10,038</b>
<b>Net Benefit</b>	<b>\$79,484</b>	<b>\$119,427</b>
Source: Authors' Calculations. All values are current dollar present values calculated using a discount rate of 4%.		

### 1. Reduced Child Care Costs

Capizzano, Tout and Adams (2000) estimate that 28% of parents of students ages 6-12 pay for outside after school child care services. The Census Bureau's 1993 Survey of Income and Program Participation (SIPP) indicates that employed mothers with children younger than five years of age spend, on average, \$79 per week for child care. Assuming that expenditure (\$79) provides 50 hours per week of child care, and assuming that after school care would require only 15 hrs per week, the after school programs costs an average of \$23.70 per week. If 28% of the participants had paid for child care, this would result in an average spending per participant of \$6.64 per week or \$239 annually over a 180 day school year. The school based after school programs would therefore save the average participant's family \$1,777 over the life of the program. For a conservative lower bound estimate of child care savings we assume savings of \$889 per participant or one-

half the higher estimate. This lower bound estimate is consistent with a lower reliance on child care providers as the participants become older.

### **Calculation Summary of Effect 1: Child Care Costs**

*Low estimate:*

The Perry Preschool program saved **\$889** per participant. This figure is adopted as the low end savings estimate.

Source: Authors' calculations; Schweinhart, et al., 1993

*High estimate:*

After school programs reduce consumer need to purchase child care from 50 hours to 15 hours per week. This means that after school program recipients pay only 15/50th or 30% of the typical \$79 per week that employed mothers with children otherwise would pay in expenses per week:

$$\$79 \times 30\% = \$23.7 \text{ per week}$$

Surveys indicate that 28% of participants pay for childcare:

$$\$23.7 \times 28\% = \$6.64 \text{ per week or } \$239 \text{ for a 180 day school year (about 36 weeks).}$$

A \$239 payment over nine years at 4% interest has a present value of **\$1,777**.

Source: Authors' calculations; Capizzano, et al. 2000.

## **2. Increased Schooling Costs**

Paradoxically, the increase in schools costs results from the projected success of the program. For every year that an after school program is effective at keeping an at-risk student enrolled in school, the state is responsible for the cost of educating the student for an additional year. Legal restrictions prevent students from dropping out of school before the age of 16. Most students reach this age in the 10<sup>th</sup> or 11<sup>th</sup> grade. However, due to grade repetition, it is not uncommon for students to be able to drop out as early as the ninth grade. This implies that preventing a student from dropping out of high school will result in the State being responsible for educating the student for an additional one to four years, depending on when the student would otherwise have dropped out of school. The central question, then, is how effectively the after school program curtails the number of high school dropouts.

According to the California Department of Education, the Class of 2000 graduated 309,866 students after starting the ninth grade with 450,820 students.<sup>7</sup> This represents a graduation rate of 68.7%, which is similar to rates in earlier years. This number is for the entire school population. As discussed below, the graduation rates among minority students, urban students and other high risk groups are even lower. A graduation rate of 68.7% does not necessarily imply a dropout rate of 31.3% because some students move to locations outside the state, graduate in the years following their class or obtain the equivalent of a high school degree. The California Department of Education estimates the drop out rate at approximately 11.1% for the same period. Again, the rate is considerably higher for at-risk students. Table 5 below indicates the difficulty of graduating from an urban school district in California as either an African American or Latino. While these low rates of graduation have been blamed on the poor quality of urban public schools [Burtless (1996), Miller (1995), Hill et al (1997), Hess (1998)], after school programs have the potential to mitigate some of these shortcomings.

<b>Table 5: Graduation Rates for Selected Student Groups</b>			
	Graduation Rates		
	All Students	African American Students	Latino Students
California – Statewide	68%	59%	55%
Los Angeles Unified School District	56%	56%	48%

Source: Greene, 2001.

The Quantum Opportunities after school program found that non-program participants had a drop out rate of 50% while program participants dropped out at a rate of 23% (Lattimore, et al., 1998). Studies of the Perry Preschool Program discussed above found that 29% of participants failed to complete high school or the equivalent while the same number for non-participants was 46%. For our purposes, we assume that participants in

<sup>7</sup> California Department of Education ([www.cde.ca.gov](http://www.cde.ca.gov)).

the after school program would drop out at a rate of 48% without participation and that participation reduces the drop out rate to 26%. These numbers fall in the middle of the ranges of the two comparison studies. Our analysis assumes that individuals who participate in after school programs are 22% less likely to drop out than non-participants with similar backgrounds.

The California Department of Education shows a similar annual drop out rate across grades. As a result, we assume that 1/3 of the students would have dropped out in each of the 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> grades and that the average student who does not drop out spends an additional 1.5 years in school. The state will incur additional expenditures in the future as a result. The California average expenditure per student in 2002-2003 is projected at \$7,058 (Bissell, 2002). We estimate that on a per student basis, preventing the average high school drop out costs the state the current dollar equivalent of approximately \$2,247 in additional education costs per year. If after school program participation increases the likelihood of graduation by 22% for the average student, then the cost per program participant is \$742 ( $\$2,247 \text{ per year} \times 22\% \times 1.5 \text{ years}$ ) assuming the individual consumes an additional 1.5 years of education. If the average student who did not drop out consumed 2 additional years in school, the cost would be \$989 ( $\$2,247 \text{ per year} \times 22\% \times 2 \text{ years}$ ).<sup>8</sup>

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<sup>8</sup> There may also be additional costs from college attendance, vocational education and adult education that we have not estimated here. In general, these costs are much lower than the costs from additional secondary education because so few of the participants will pursue these options.

### Calculation Summary of Effect 2: Increased Schooling Costs

*High estimate:*

Cost of one year of education: = \$7,058.00

Marginal cost of educating one child: 50% of \$7,058 = \$3,529.00

A Future Value of \$3,529 discounted for 11.5 years at 4% interest gives a Present Value of \$2,247.

Figuring a 22% increased likelihood of graduation, the additional cost of education for an extra year and a half:

$$\$2,247/\text{year} \times 22\% \times 1.5 \text{ years} = \mathbf{(\$742)}$$

*Low estimate:*

For a full two years of education:

$$\$2,247 \times 22\% \times 2 \text{ years} = \mathbf{(\$989)}$$

Source: Authors' calculations; Bissell, 2002.

### **3. Improved School Performance (Lower Remediation Costs plus Reduced Grade Repetition Costs)**

The review of the impact of after school programs in California and the review of other studies from outside of California indicate that school intervention programs have a positive impact on student performance. Student attendance and test scores improve significantly for those students in after school programs. Thus, not only are students more likely to graduate, but they also perform better in school. Much of the dollar value-added shows up in the graduation rates. However, there are still other benefits not directly tied to graduation rates. Students who participate in intervention programs are likely to perform more closely to grade level and less likely to be placed in remedial and special education courses that have higher costs per student. For example, limited English proficient students have shown marked improvements in language skills as the result of after school programs (Huang, 2001).

Estimating cost saving resulting from better school performance is challenging. Schweinhart et al. (1993) had a chance to examine the detailed placement history and district costs of remediation for each of the participants of the Perry Preschool Program. This allowed for the development of detailed cost estimates. They found the present value of these benefits averaged to \$8,674 per participant.<sup>9</sup> This works out to an average present value of \$722 for each of 12 years of schooling. These costs included reductions in remediation and counseling costs. If comparable dollar values were applied to California, this would represent an approximate reduction of 10% of the average per pupil expenditures. If we assumed a more modest 5% reduction, the cost savings would be approximately \$366 per pupil.

In addition to reduced remediation and counseling costs, after school programs may lead to less grade repetition. The earlier discussion of the Bissell (2002) study indicated that grade repetition was reduced by 2.1% for grades 2-5 and 0.6% for grades 6-9. We conservatively estimate participating in an after school program reduces a student's likelihood of repeating one grade by 2.1%. We estimate the reduction in the marginal

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<sup>9</sup> The dollar values are adjusted to 2001 values by the authors.

cost of education at 50% of the average cost of \$7,058 per student. This results in savings of \$70 per participant in after school programs for our low estimate.

If we also include the 0.6% reduction in the possibility of repeating a grade during grades 6-9, the benefits increase to \$86 per participant for our high estimate.<sup>10</sup> The benefit of improved school performance is estimated between \$447 and \$809 per participant.

There are also other intangible benefits such as children being more enthusiastic about school, having higher self esteem as the result of improved performance, etc. to which we do not assign a dollar value.

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<sup>10</sup> These values are calculated using a savings of \$3,529 per year not repeated, a discount rate of 4%. The savings are expected to occur 1.5 years in future for low grades and 7.5 years in future for higher grades and the probabilities listed for each group.

### Calculation Summary of Effect 3: Improved School Performance

#### a) Reduced Remediation Costs

*High estimate:*

Perry Preschool estimate of  
\$8,674 over 12 years of schooling or  $\$8674/12 = \$ 723$  per year

*Low estimate*

$\$723/\text{year @}50\%$  = \$361 per year

#### b) Decreased Grade Repetition (applies to both High and Low Estimates)

Savings estimate:  $\$7,058 @50\% = \$3,529$  as marginal cost of educating one student.

2.1% is the grade repetition reduction rate applied to grades 2-5.

0.6% is the grade repetition reduction rate applied grades 6-9.

Source: Bissell, 2002.

$\$3,529 \times 2.1\% = \$74.11$  (grades 2-5)

$\$74.11$  is discounted @4% for 1.5 years= 69.86 or \$70/participant.

$\$3,529 \times 0.6\% = \$21.17$  (grades 6-9)

$\$21.17$  is discounted @4% for 7.5 years= 15.77 or \$16/participant

$\$70 + \$16 = \$86$  total benefits per participant.

#### Savings from improved school performance:

<i>High estimate:</i>	Grade repetition:	\$ 86
	Remediation:	<u>\$723</u>
	High estimate:	<b>\$809</b>

<i>Low estimate:</i>	Grade repetition:	\$ 86
	Remediation:	<u>\$ 361</u>
	Low estimate:	<b>\$447</b>

Source: Authors' calculations; Schweinhart, et al. 1993; Bissell, 2002.

#### 4. Increased Compensation

Students who fail to graduate from high school face a very bleak future. Because the basic skills conveyed in high school and higher education are essential for success in today's economy, students who do not obtain these skills are likely to suffer with significantly reduced earnings and employment prospects. Among those over 25 years old who failed to complete high school or receive a GED, 55% report no earnings in the 1999 Current Population Survey of the U.S. Census compared to 25% of those with at least a high school degree or GED.

The median income for those who left school without a high school diploma or GED is \$15,334 compared to a median income of \$29,294 for people with at least a high school degree or GED. Students who fail to graduate from high school are also significantly more likely to become single parents and have children at young ages, to rely upon public assistance or to be in prison. In short, high school graduation is a very important predictor of young people's life prospects. If improved school performance can translate into higher graduation rates, then individuals can look forward to better economic outcomes. The state's return on investment comes in the form of higher taxes and a reduced reliance on social programs.

Again, Cohen (1998) has produced the most comprehensive estimates of the benefits to society of keeping a student from dropping out. His estimates, adjusted to 2001 dollar values, indicate that a high school dropout costs the individual and society between \$268,133 and \$428,130 over his or her lifetime. However, these costs include some intangible or non-monetary social costs. To be conservative, we focus only on the monetary costs. This gives us an estimate of \$133,704 as the value of preventing a high school drop out.<sup>11</sup> This estimate is the result of worse economic outcomes for the individual and higher future social costs on the part of society. Given our estimate of a 22% percent reduction in the drop out rates, this would imply cost savings of \$29,415 (22%\* \$133,704) per student. Schweinhart et al. (1993) estimate that the Perry Preschool

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<sup>11</sup> Cohen (1998) estimates the present value at age 18. For consistency, we have discounted this value back to when the participant enters the program.

Program produces \$38,284 in future earnings. We take these numbers, \$29,415 and \$38,284, as the high and low range of estimates for the benefits of preventing a high school drop out.

**Calculation Summary of Effect 4: Increased Compensation**

Preventing a high school drop-out: = \$133,704

Given a 22% reduction in drop-out rates:

**Low benefit:** \$133,704 x 22% = **\$29,415**

Source: Authors' calculations; Cohen (1998) pp 5-33. Figures are adjusted to exclude non-monetary costs and discounted back to when participant enters program.

**High benefit (Future earnings estimate):** = **\$38,284**  
**(Perry Preschool estimate)**

Source: Authors' calculations adjusted for inflation from 1992 dollars to 2001 dollars; Schweinhart, et al. 1993.

## 5. Reduced Crime

As noted above, crime prevention provides the biggest potential cost saving from intervention programs. The state of Washington commissioned the *Washington State Institute for Public Policy* to analyze the existing evidence on which types of crime prevention policies reduce crime in an economically efficient manner. The Institute's researchers, Aos, Phipps, Barnoski, and Lieb (2001), conducted a comprehensive and exhaustive meta-analysis of 400 research studies conducted in the United States and Canada in the last 25 years, considering only those studies that used sound research methods. The goal of the study was to produce a comparative economic rating of each study that allowed policy makers to assess return on investment from crime reduction on a standard metric, in much the same way that private investors evaluate the return on stocks and mutual funds.

Of interest to our purposes, the Institute's analysis included all existing studies on the impact of early childhood intervention programs. The comparisons found that, on average, these programs yielded \$5.92 in crime reduction benefits for every \$1 spent. Given our estimates of a total cost of \$10,038 per participant, this suggests that the benefits of crime reduction are expected to be \$59,425 (\$5.92 times \$10,038) per participant (Aos, et al., 2001).

Schweinhart et al (1993) estimate that the Perry Preschool Program results in a present value of total crime reduction costs of \$70,381 per participant in 1992 dollars. Converting this number to 2001 values results in a value of \$88,835. The subcomponents of these savings are \$72,684 in victim costs and \$16,151 in criminal justice system costs. The Washington State study and the Perry preschool program provide us with a range of estimates of cost saving for crime reduction of between \$59,425 and \$88,835 per participant.

Under the literature review above, Cohen (1998) suggests that the benefits of crime reduction are higher than the estimates we have presented. Unfortunately, we have no measure by which to apply Cohen's overall work on high-risk youth to the task of

generating an estimate of specific dollar benefits from after school programs. Therefore, we have adopted conservative estimates from the sources cited.

**Calculation Summary of Effect 5: Reduced Crime Costs**

*Low estimate:*

Cost of \$10,038/participant x \$5.92 benefits= **\$59,425/participant**

Source: Aos, et al, (2001).

*High estimate*

Total Perry Preschool benefit/participant =	\$70,381
Add inflation adjustment of 20.8% =	<u>\$18,454</u>
\$70,381 adjusted to 2001 dollars	<b>\$88,835/participant</b>

Source: Schweinhart, et al. 1993.

## 6. Reduced Welfare Participation

Individuals who earn higher incomes as a result of graduating from high school are much less likely to need assistance from social programs. Schweinhart et al. (1993) estimate that the average participant in the Perry Preschool Program receives approximately \$3,349 less in welfare benefits over his or her lifetime. However, welfare payments are transfer payments. There is no real gain from preventing their occurrence other than administrative savings. These typically run at 10% to 15% of total program costs. The \$3,349 that the government saves comes from the individual who does not receive it. Assuming a 10% administrative cost, the net gain to society is \$335 (10%\*\$3,349). Assuming a 15% administrative cost, the net gain to society is \$502 (15%\*\$3,349).

### Calculation Summary for Effect 6: Welfare Benefits

Low estimate:	\$3,349 payment @10% administrative savings = <b>\$335</b>
High estimate:	\$3,349 payment @ 15% administrative savings = <b>\$502</b>

Source: Schweinhart, et al. 1993 (Perry Preschool) and authors' calculation.

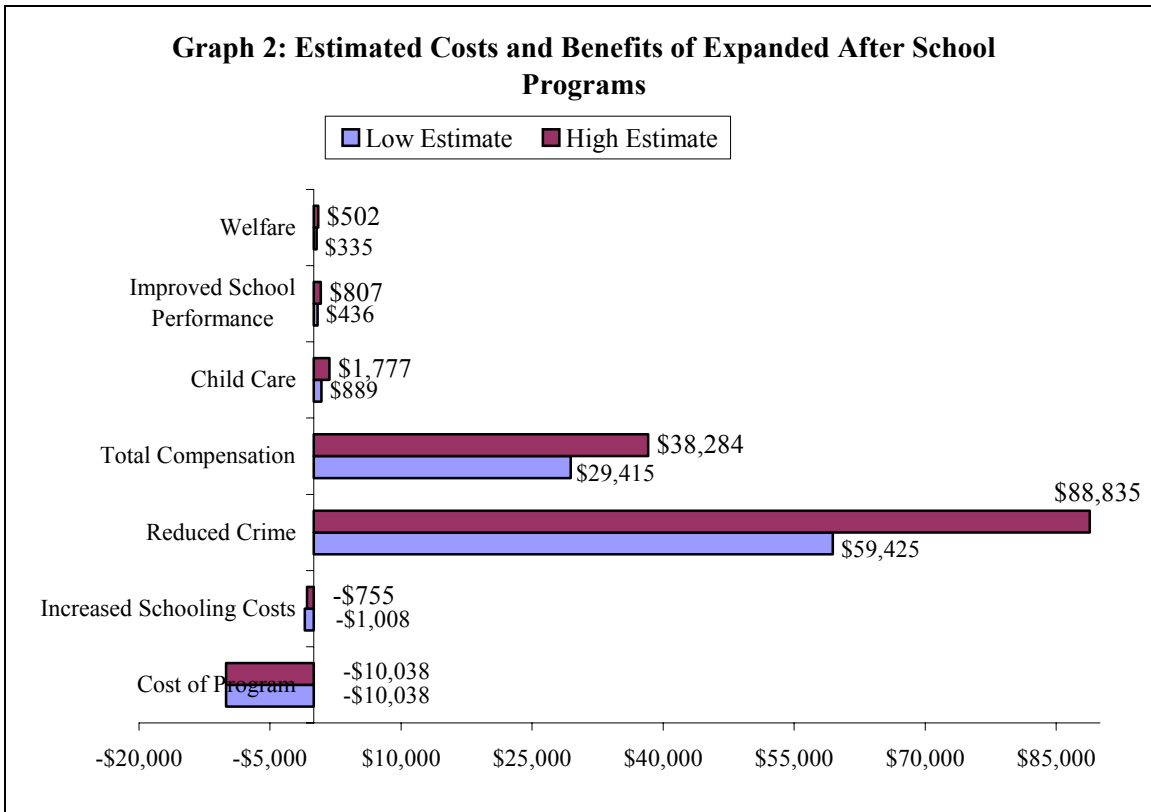
**Summary: Discussion of the Effects of The Act**

We have presented the estimates of the net costs and benefits of the *After School Education and Safety Program Act of 2002* by category as calculated above in Sections A and B. These benefits are estimated on a per participant basis and have been estimated for a low and high benefit scenario. The total per participant costs are estimated at \$10,038. The total benefits are estimated to be between \$89,522 per participant and \$129,465 per participant. This results in a net benefit (total benefit minus total cost) of between \$79,484 and \$119,427 per participant. It is important to remember that the estimates represent the gains for the average participant and not any given individual. The payoffs come from keeping a small subset of the most at-risk children from experiencing the most negative outcomes. Many individual participants will gain a great deal from participating in after school programs while other individual participants will see few gains from participating in the program.

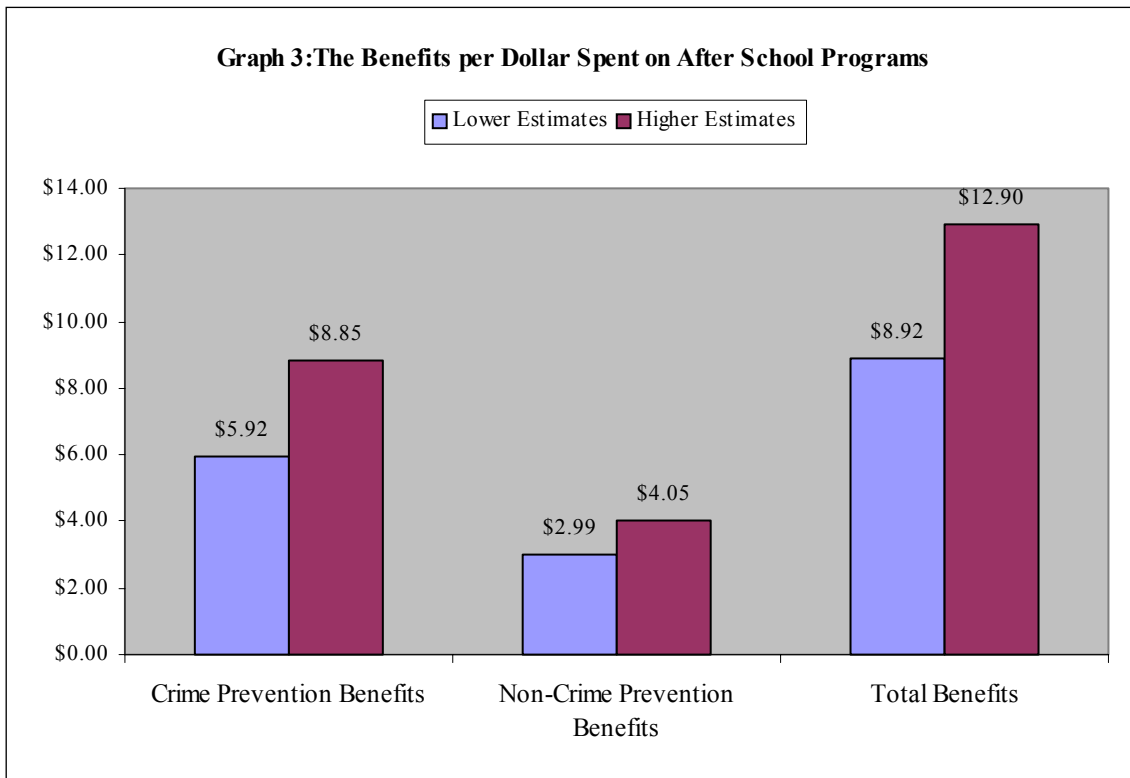
**SECTION V: Sensitivity Analysis: Benefits by Category**

**A. Why Do a Sensitivity Analysis?**

Given that our estimates are based on other studies, it is important to conduct a sensitivity analysis to ensure that our results are not driven primarily by a single effect of The Act discussed above under our lower benefits estimate. Graph 2 shows the total costs and benefits from each category. Both the benefits from crime prevention and higher earnings are enough to justify the costs of the program several times over.



In order to provide a better overview of the cost effectiveness of the program, we calculate the benefits per dollar spent for the total benefits and the subcategories of benefits. This involves dividing the benefits by the total cost of the program. For example, we estimate that implementation of The Act will result in total benefits of \$8.92 to \$12.90 for each \$1 dollar spent. These values are obtained by dividing the \$89,522 per participant and \$129,465 per participant benefit estimates by the \$10,038 per participant cost estimate are shown in the Graph 3.



As expected, crime prevention provides the greatest benefit when we break our estimates down by category. The estimated crime prevention benefits are in the range of \$5.92 to \$8.85 for every \$1 spent. What if we have overestimated the benefits from crime reduction? Even if the crime reduction benefits were only 20% of those estimated here, the program would be cost effective. Crime is costly because of the direct costs to the victims, which include the costs of pain and suffering. Generally, the criminal justice costs account for 20% to 30% of the costs of crime (Schweinhart et al. 1993). Even if we exclude the costs to the victim, the after school program is estimated to be cost effective when considering criminal justice costs alone as evidenced by Graph 3. Even if we ignore all of benefits of crime reduction, the estimate of total net benefits of \$2.99 to \$4.05 for every \$1 spent alone would make the program cost effective.

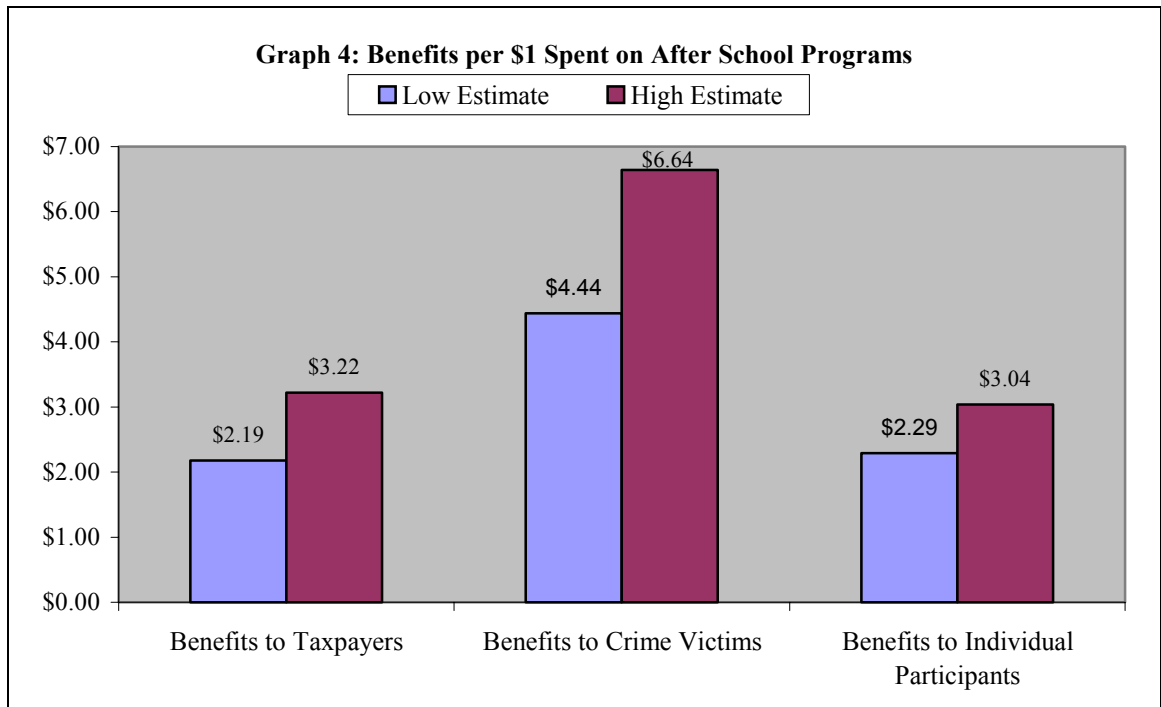
The increased compensation that the participants receive is the result of increased high school graduation rates. Our lower estimates assume that participants were 22% more likely to graduate than their non-participant counterparts. These numbers are based on

existing studies, but it is possible that they are too optimistic. If graduation rates increase by only 11%, then the increased schooling benefits alone would still be in the range of \$1.47 to \$1.91 for every \$1 spent.

The range of estimates of benefits is likely to be high for any new program. As a result, one should interpret our numbers with some caution. The actual magnitudes of the numbers may be smaller or larger. Positive net benefits do not hinge critically on one set of positive outcomes. Absent any one of the positive net benefits, the outcomes will still be positive.

### **B. Benefits to Participants, Taxpayers and Crime Victims**

In addition, we break the benefit estimates into three categories of beneficiaries: the individual participant, the taxpayer and the crime victim. The total return to taxpayers is in the range of \$2.19 to \$3.22 for every \$1 dollar spent. The return for crime victims is in the range of \$4.44 to \$6.64 for every \$1 spent, and the benefit estimates for participants are in the range of \$2.29 to \$3.04 for each \$1 spent. The program is not only expected to be cost effective across all categories of benefits, but also cost effective for each particular category.



This pattern of benefits is not uncommon with expenditures on education for high-risk youth. In these cases, both the individual and society stand to make significant gains if the lifecycle of crime and poverty can be broken by increased formal education and better lifestyle choices. The benefits for crime victims are based on pain, suffering and other emotional costs. A more conservative approach would exclude the potential benefits to crime victims. Doing so would result in a total benefit of \$4.48 to \$6.26 per every dollar spent as the total only includes the gains to the participant and to the taxpayer.

## Calculation Summary of Benefits to Participants, Taxpayers and Crime Victims

### Benefits to Taxpayers

#### *High Estimate*

Increased Schooling Costs	(\$742)
Improved Performance	\$809
Increased Compensation	\$9,571 <sup>12</sup>
Reduced Crime	\$22,209 <sup>13</sup>
Welfare Benefits	<u>\$502</u>
Total Benefit	\$32,349

Total Benefit to Taxpayer per participant for every dollar spent:  
 $\$32,349 / \$10,038 = \mathbf{\$3.22}$

#### *Low Estimate*

Increased Schooling Costs	(\$989)
Improved Performance	\$447
Increased Compensation	\$7,354 <sup>14</sup>
Reduced Crime	\$14,856 <sup>15</sup>
Welfare Benefits	<u>\$335</u>
Total Benefit	\$22,003

Total Benefit to Taxpayer per participant for every dollar spent:  
 $\$22,003 / \$10,038 = \mathbf{\$2.19}$

### Benefits to Crime Victims

#### *High Estimate*

Reduced Crime	\$66,626 <sup>16</sup>
Total Benefit to Crime Victim for every \$1 spent:	
	$\$66,626 / \$10,038 = \mathbf{\$6.64}$

<sup>12</sup> Based on a 25% income tax rate.

<sup>13</sup> Based on 25% of total crime benefits, from Schweinhart, et al. 1993.

<sup>14</sup> Based on a 25% income tax rate.

<sup>15</sup> Based on 25% of total crime benefits, from Schweinhart, et al. 1993.

<sup>16</sup> Based on 75% of total crime benefits, from Schweinhart, et al. 1993.

Calculation Summary of Benefits to Participants, Taxpayers and Crime Victims (cont'd)

*Low Estimate*

Reduced Crime                      \$44,569  
Total Benefit to Crime Victim for every \$1 spent:  
\$44,569/\$10,038 = **\$4.44**

**Benefits to Individual Participants**

*High Estimate*

Child Care                              \$1,777  
Increased Compensation        \$28,713<sup>17</sup>  
Total Benefit                            \$30,490

Total Benefit to Participant for every \$1 spent:  
\$30,490/\$10,038 = **\$3.04**

*Low Estimate*

Child Care                              \$889  
Increased Compensation        \$22,061<sup>18</sup>  
Total Benefit                            \$22,950

Total Benefit to Participant for every \$1 spent:  
\$22,950/\$10,038 = **\$2.29**

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<sup>17</sup> Based on 75% net income after 25% tax.

<sup>18</sup> *Ibid.*

### **C. Points to Consider when Interpreting the Estimates**

It should be noted that these estimates are based primarily on numbers from early childhood intervention programs and preliminary estimates of the impacts of after school programs. The actual effects of the expansion of after school programs may be smaller or larger. The accuracy of our estimates is dependent on how closely the actual effects mirror the effects found by the existing studies. In order to more accurately determine the effects of the program, a detailed longitudinal study of participants and non-participants of similar backgrounds is needed.

The costs of the *After School Education and Safety Program Act of 2002* are borne exclusively by the taxpayers. The benefits, on the other hand, accrue to the individual and to society, and occur over the individual's lifetime. We have calculated current dollar equivalents or present values for these costs and benefits. Our estimates indicate that the programs pay for themselves.

**In the later years, these programs provide returns in the form of higher incomes, higher taxes and lower crime rates. These benefits are divided between the participants, taxpayers and crime victims. State government and local school districts will only receive a portion of the benefits. Based on our estimates, however, the State government and local school districts are likely to receive enough lifetime benefits to cover their initial outlays. Even if this is not the case, the total net benefits to society are likely to be positive.**

## **SECTION VI: Conclusion**

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The analysis conducted in this paper has examined existing school age intervention programs and provided estimates of the potential net benefits of the *After School Education and Safety Program Act of 2002*. The results suggest that the program will likely yield significant total benefits that range from nearly \$9 to nearly \$13 for every \$1 in program cost. The calculations demonstrate clearly that even moderate success in affecting the at-risk participant's future social and economic outcomes yields significant benefits to taxpayers, crime victims and program participants.

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