

Social Impact “Pay for Success” Finance: A PKSE Bond Example

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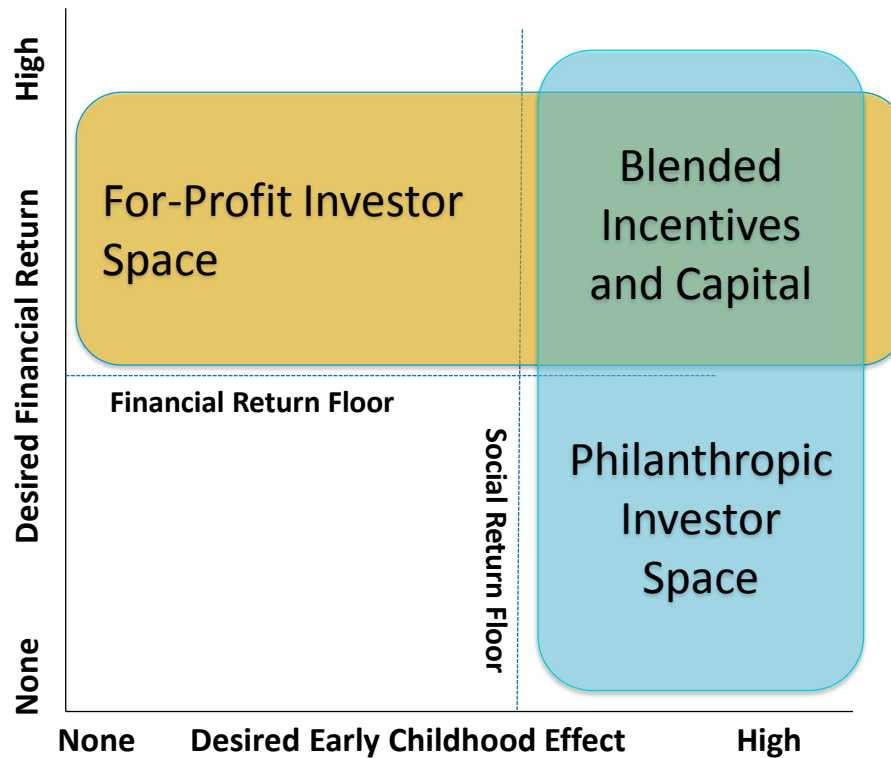
State and Federal Budgets Are Under Pressure and Education Is Being Cut at Every Age Level

Spending is being cut at the same time the importance of an educated American workforce is clearer than ever.

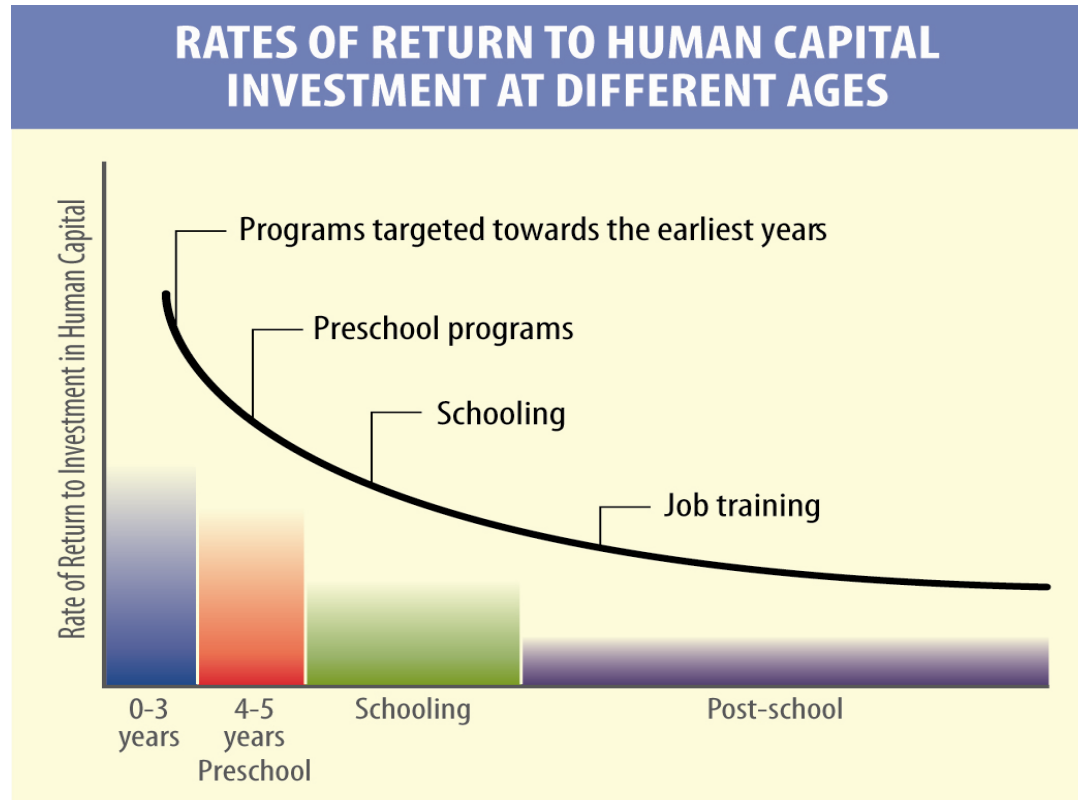
One answer is “pay for success” social impact finance.

Social Impact Finance Captures the Intersection of For-Profit and Not-for-Profit Investor Incentives

Segments of Social Impact Investors



PKSE Bonds Capture the Difference Between the Return on Preschool and the Return on K-12 Schooling



SOURCE: J.J. Heckman, "Skill formation and the economics of investing in disadvantaged children." *Science*, 312(5782):1900-2, (June 2006).

PKSE Bonds provide Triple Bottom Line investment returns

Societal – Creation of coalitions of hundreds of business leaders in every state who know which early child programs work, and who can shape state and federal policy.

Economic -- Higher third-grade reading and math scores, higher graduation rates, lower involvement in crime, fewer teen pregnancies, less drug use, higher rates of employment and future earnings, improved parent productivity, and stronger regional economic and per capita income growth.

Financial – Competitive interest rates. Principle repayment. First round, special-ed savings as a percent of philanthropic investment are almost 100%. Including returns from successive rounds increases first-round philanthropic returns significantly.

Kauffman-ReadyNation Working Group finds Social Impact Bonds can help finance early childhood programs*

Social Impact Bond (SIB) programs will be able to --

- ✓ Reduce pressures on state and federal budgets
- ✓ Improve early child development and education
- ✓ Strengthen K-12 education and workforce competitiveness

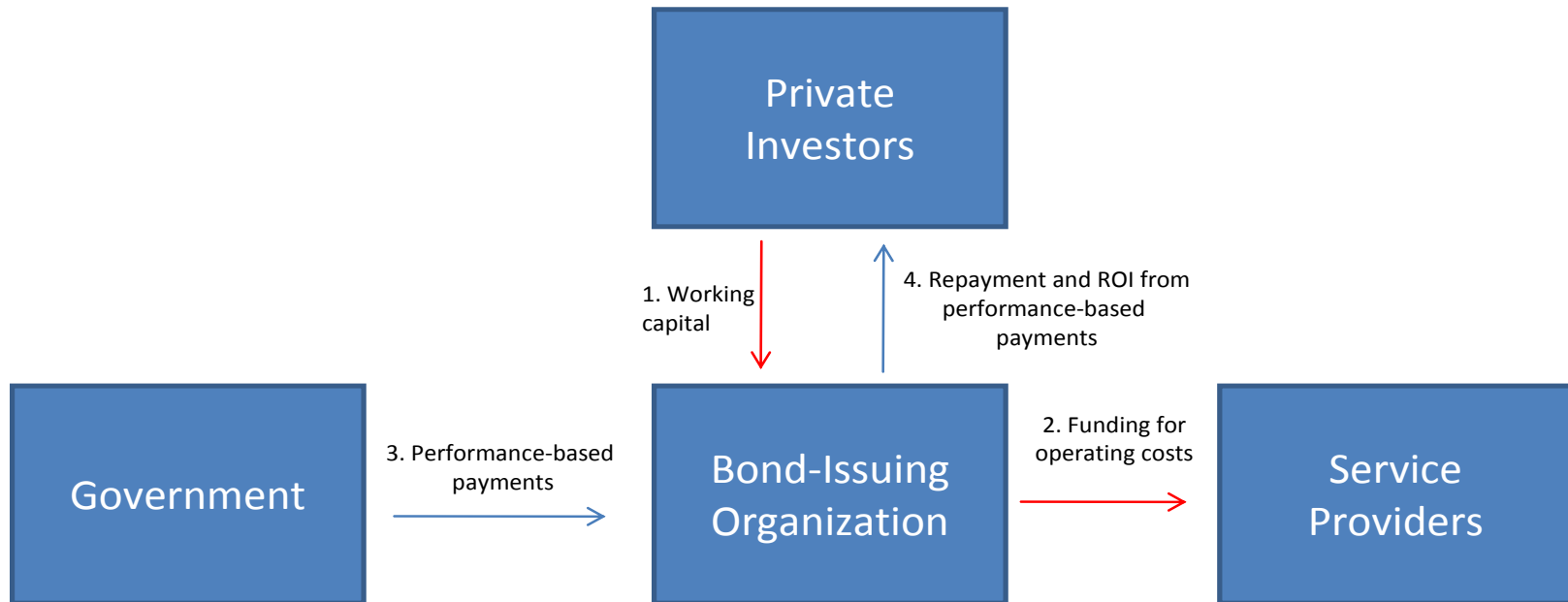
SIB assets will be able to be --

- ✓ Bought by for-profit and non-profit investors
- ✓ Traded among investors worldwide and
- ✓ Aggregated in asset-backed securities

*Robert Dugger and Robert Litan, *Early Childhood “Pay-For-Success” Social Impact Finance: A PKSE Bond Example to Increase School Readiness and Reduce Special Education Costs*, Kauffman-ReadyNation Working Group on Early Childhood Finance Innovation, March 2012

Social Impact Bonds* --

- ✓ Generate government cost savings
- ✓ Pay interest on invested capital to investors
- ✓ Repay invested capital
- ✓ Government savings cover full cost of services



*See Jeffrey Liebman, *Social Impact Bonds: A Promising New Financing Model to Accelerate Social Innovation and Improve Government Performance*, Center for American Progress, February 2011. http://www.americanprogress.org/issues/2011/02/social_impact_bonds.html.

PKSE (“peek see”) Social Impact Bonds (SIBs)

A PKSE bond is a kind of SIB used to pay for quality Pre-K to reduce Special-Ed Costs

1. Regional Business Leaders and Philanthropists -- Establish a School Readiness Capital Partnership (SRCP)
2. SRCP -- Conducts a study of regional preschool effects on regional k-12 special-ed costs and enters into contracts with school districts
3. SRCP -- Pays set-up, operations, parent mentoring and child monitoring costs of PKSE bond program
4. State Governments -- Provide statutory recognition and possibly incentive funding and PKSE bond tax exemption
5. PKSE fund providers – SRCP sells bonds or borrows from banks. Bond buyers or bank lenders provide funds for pre-k scholarships so at-risk kids get quality preschool and reduce special-ed costs
6. School Districts -- Rebate annual special-ed cost savings to the SRCP
7. SRCP -- Pays interest and principle due on PKSE bonds or loans out of the special-ed savings and reinvests special-ed savings gains in further rounds of PKSE scholarships

From the standpoint of investors, PKSE Social Impact Bonds must to have:

- ✓ Strong state and local business, philanthropic and government support
- ✓ Rigorous statistical demonstrations of projected benefits
- ✓ Sound legal foundations for the PKSE bond issuing organization
- ✓ Clear enforceable contracts among PKSE participating entities
- ✓ Bonds or other PKSE assets with terms familiar to investors
- ✓ Good working relationships with the investment underwriting, institutional and foundation investor sectors

All Major Early Childhood Research Shows Quality Pre-K Reduces Public School Special-Ed Costs

- ❑ Randomized Control Trials such as the Abecedarian and Perry Preschool studies
- ❑ Case Control Trials such as the Chicago Child-Parent Centers studies and the Louisiana LA 4 evaluation
- ❑ And Statistical Projection Trials such as the Pennsylvania Pre-K Counts and the Granite School District studies

All show that quality pre-kindergarten for three and four year-old children is associated with very significant reductions in special education costs when the children are in K-12 public school education.

A Simplified PKSE Bond Program Example Based on the Pennsylvania Pre-K Counts Study*

The sample program shows the performance results from providing regional preschool services to 100 pre-k students per year.

Each year is one “financing round”.

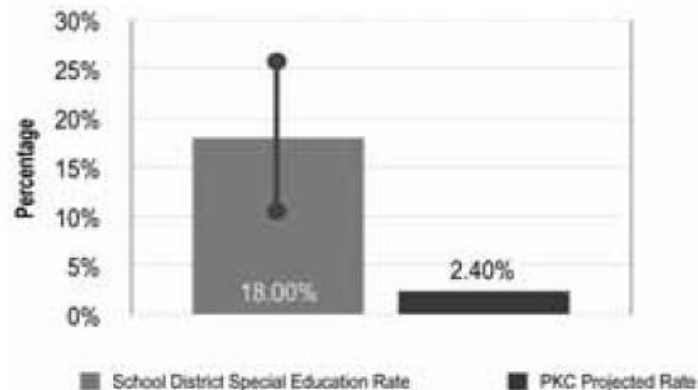
Over ten years, pre-k services are provided to 1000 children.

*The operating results of this PKSE bond program example are generated by an Excel spreadsheet model. The spreadsheet is available on request.

Statistical Projection Trial (Pennsylvania)

A comparison of statistically predicted results with actual special-ed assignment results was used to estimate the effects of PA's Pre-K Counts (PKC) program in reducing special-ed costs. 80% of 10,000 PKC children met critical early school success competencies in the Pennsylvania Early Learning Standards (OCDEL, PAELS, 2005) at transition to kindergarten. The gains of PKC children exceeded the kindergarten transition skills of same-aged peers on the BSSI-3 national norms in spoken language, reading, math, classroom behavior, and daily living skills. The projected PKC special education placement rate was 2.4%, significantly lower than the 18% historical special-ed placement rate of PA school districts.

Exhibit 5-29: Historical Pennsylvania school district special education placement rate vs. PKC rate at K-transition (2008)



PKSE Program on One Page

Special-ed assignment without PKSE preschool	18% (Equal to PA PKC) <u>18 kids out of 100</u>
Special-ed assignment with PKSE preschool	7.5% (Three times PKC) <u>between 7 and 8 kids per 100</u>
Cost of prekindergarten per child per year	\$7,850 (Equal to PKC)
Special-ed cost (adjusted) per child per year	\$8,499 (PA school data)
Present value of k-12 special-ed for 100 children without PKSE preschool	\$1,224,215
Present value of k-12 special-ed for 100 children with PKSE preschool	\$ 736,146
Present value of k-12 special-ed cost savings	\$ 488,068

PKSE Program Parameters (1)

Special-ed assignment without PKSE preschool	18% (Equal to PA Pre-K Counts)
Special-ed assignment with PKSE preschool	7.5% (Three times Pre-K Counts)
Cost of prekindergarten per child per year	\$7,850 (Equal to Pre-K Counts)
Cost of special-ed per child per year	\$12,141 (PA school district data)
Percent of spec-ed disabilities ameliorated by pre-k	70%
Special-ed cost adjusted by amelioration rate	\$8,499 (30% less than PA data)
Number of years in special-ed	Based on national distribution*
Discount rate used to calculate present values	5%
Migration out of the school district per year	2%**

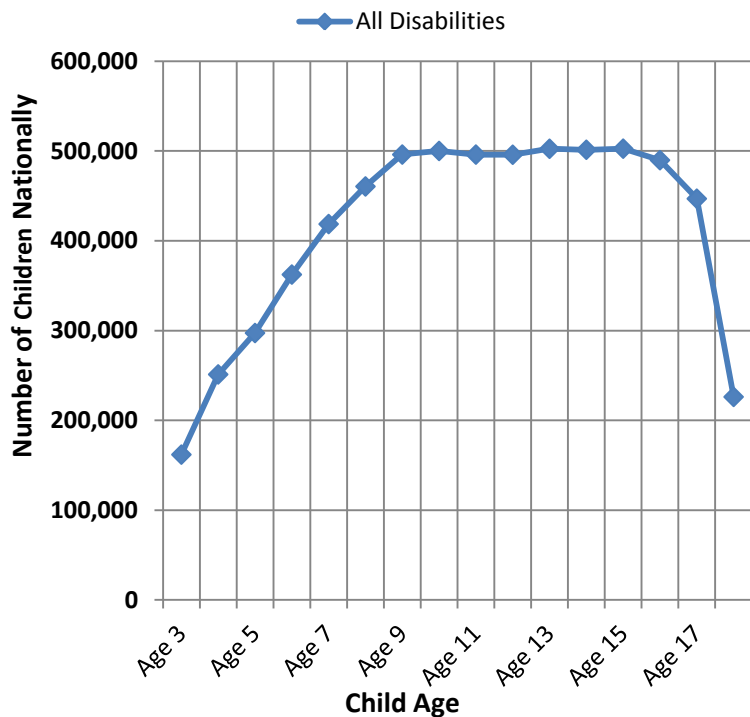
* The distribution of students in special-ed described in U.S. Department of Education, Office of Special Education Programs, Data Analysis System (DANS), OMB #1820-0043: "Children with Disabilities Receiving Special Education Under Part B of the Individuals with Disabilities Education Act," 2007. Data updated as of July 15, 2008.

** 2% is an initial estimate of outmigration the seven county Northern Virginia area and is included in this PKSE example because it needs to be included in any analysis of SIB effectiveness.

PKSE Program Parameters (2)

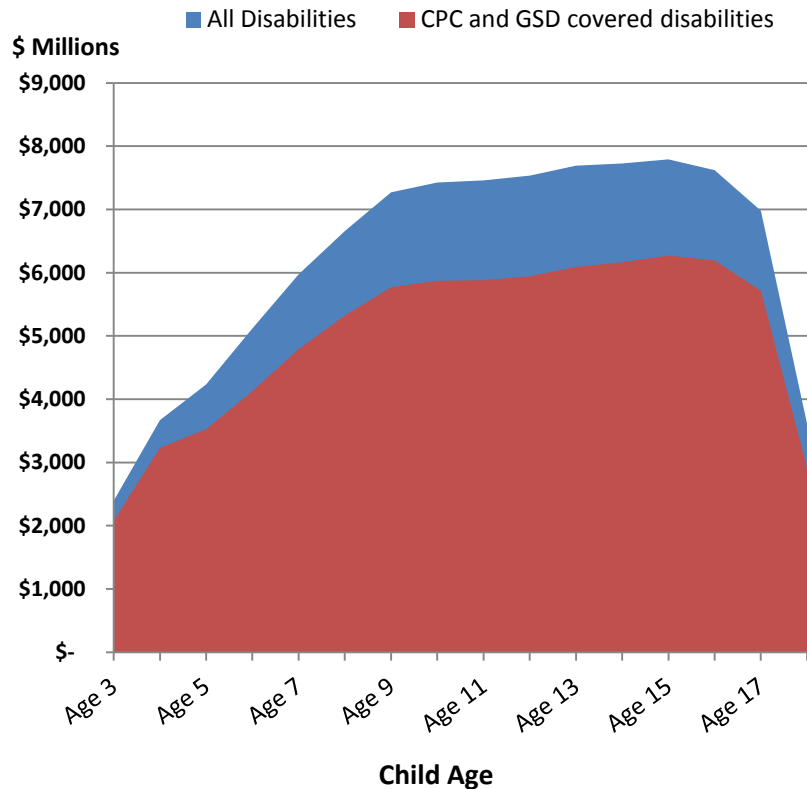
National Distribution and Amelioration Rate Assumptions

Number of Children Receiving Special Education Services Under IDEA Part B, 2007



Source: U.S. Department of Education, Office of Special Education Programs, Data Analysis System (DANS), OMB #1820-0043: "Children with Disabilities Receiving Special Education Under Part B of the Individuals with Disabilities Education Act," 2007. Data updated as of July 15, 2008.

Comparison of All IDEA Disabilities and Those Reported to be Ameliorated by Special-Ed and Included in the CPC and GSD Studies



PKSE Program Parameters (3)

Number of Children: Scholarships for 50 three year-old, and 50 four year-old children

Program set-up and operating costs: \$500,000 Paid by School
Readiness Capital Partnership (3 years)

PKSE student mentoring per child per year: \$ 1000 Paid by SRCP (2 years)

PKSE graduate monitoring per child per year: \$ 100 Paid by SRCP
(ongoing)

PKSE Program Parameters (4)

Business leader philanthropists:
costs and are not repaid

Pay for set-up and operating

Special-ed cost savings:
difference between special-ed costs with and without PKSE

School cost savings from

Special-ed cost savings gain rate
investing special-ed cost savings not used to pay for PKSE bond interest or principle repayment)

3% (Gains earned from

PKSE bonds: Simple interest-bearing 10-year bonds

PKSE bond interest rate: 3% Paid from special-ed cost savings gains

PKSE bonds repayment: Paid from accumulated savings gains

PKSE Program Parameters (5)

PRI philanthropists: Purchase PRI bonds to cover negative cash flow during PKSE bond repayment.

PRI bonds: Simple interest-bearing 20-year bonds

PRI bond interest rate 3% Paid from special-ed cost savings gains

PRI bond repayment Once program effectiveness is demonstrated, PRIs are repaid over 20 years from special-ed net savings gains from future PKSE financing rounds

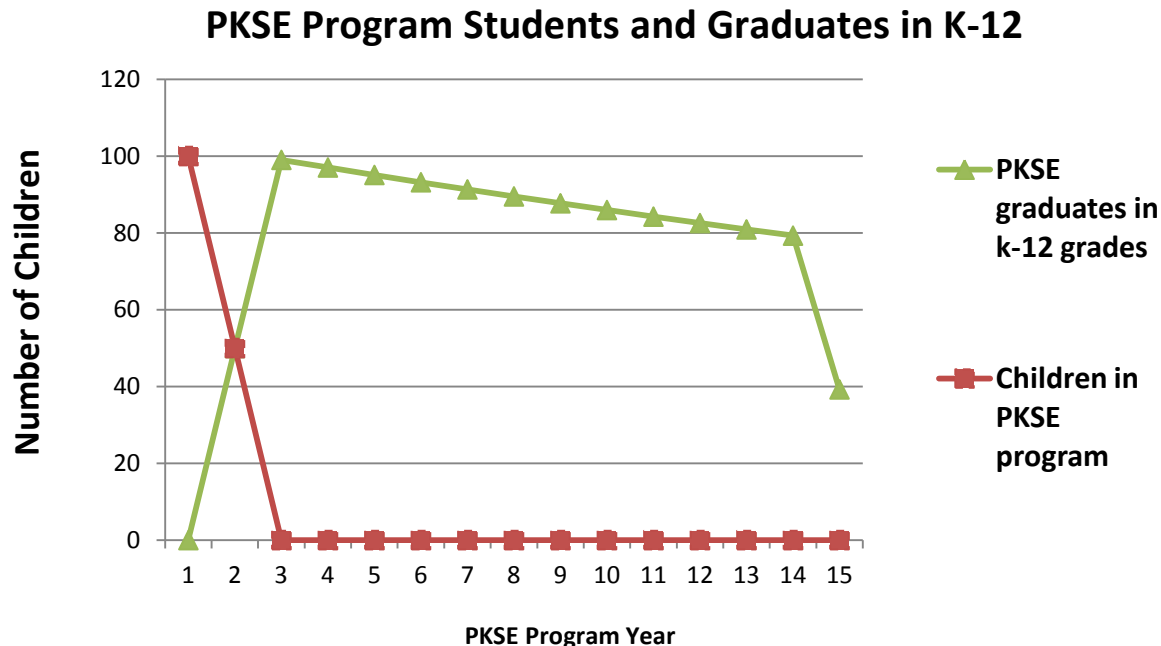
PKSE Program Parameters (6)

Length of PKSE Program Financing Round

- 2 years of Pre-k for three year-old children and 1 year for four year-olds
- 13 years of Kindergarten through 12th grade public school education
- Special-ed cost savings begin to accumulate in Kindergarten and continue to accumulate through 12th grade in line with national special-ed entry and exit data.
- 12th grade is the 15th and final year of a PKSE program. This is the year in which the three year-old PKSE scholarship recipients graduate from high school.

Number of PKSE Students and Graduates

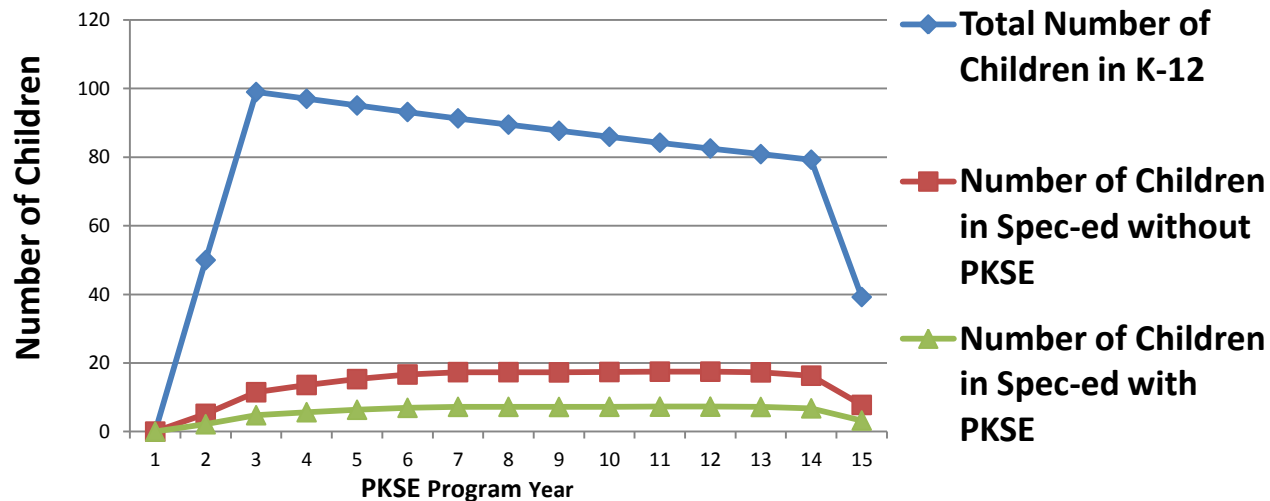
In the first year, 100 three and four year-old PKSE scholars enroll in new PKSE preschool spaces. In the second year, the four year-olds enter kindergarten and the three year-olds move up to the second year of preschool. By the third year, all the first round PKSE scholars are now PKSE graduates in the K-12 system. Two percent of them are assumed to migrate out of the region each year.



Number of Children in Special-Ed With, and Without, the PKSE Program

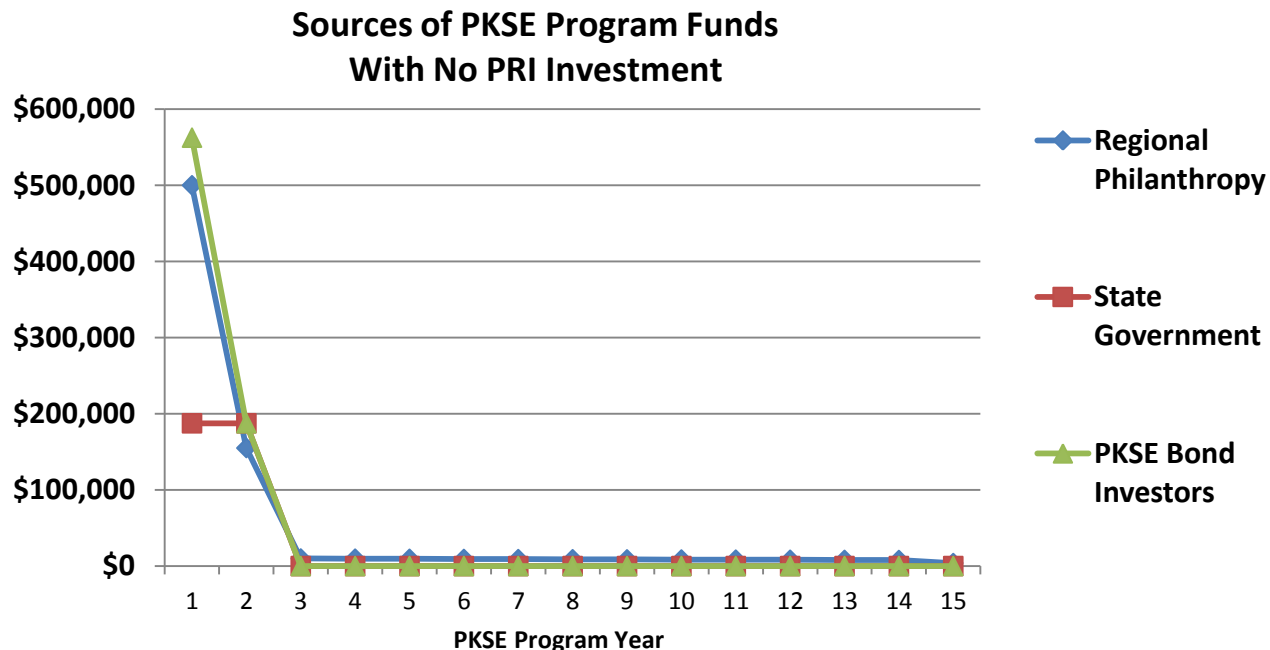
Of the 100 children in the PKSE program, the number assigned to special-ed is not the red-square line, reflecting the PKC study's 18% projection. Instead, it is the barely visible green-triangle line at the bottom corresponding the sample PKSE 7.5% assumption. The curved shape of the red-square and blue-diamond lines reflects national data on when children enter and exit special-ed. Entries usually occur in the first four years of elementary school, and exits in high school, frequently as a result of dropping out of school. This pattern is contained in all calculations and charts.

Comparison of Number of At-Risk Children in Special Education with and Without PKSE Program



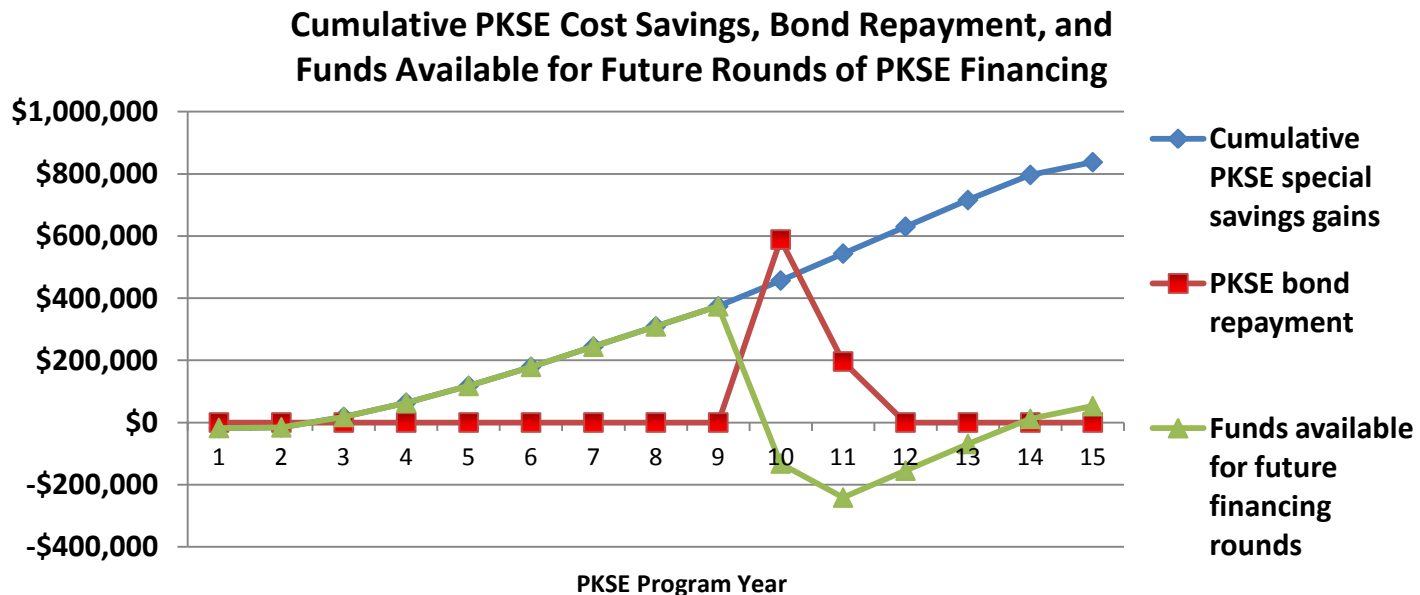
Sources of PKSE Program Funds

The financing costs of a PKSE program round are greatest in the first year when scholarship funds are needed for 50 three year-olds and 50 four year olds. In the second year, scholarship funds are needed only for the 50 children who were three year olds in the first year. Thereafter, as PKSE graduates move through elementary, middle and high school, they generate special education savings.



Negative Cash Flow and Sustainability

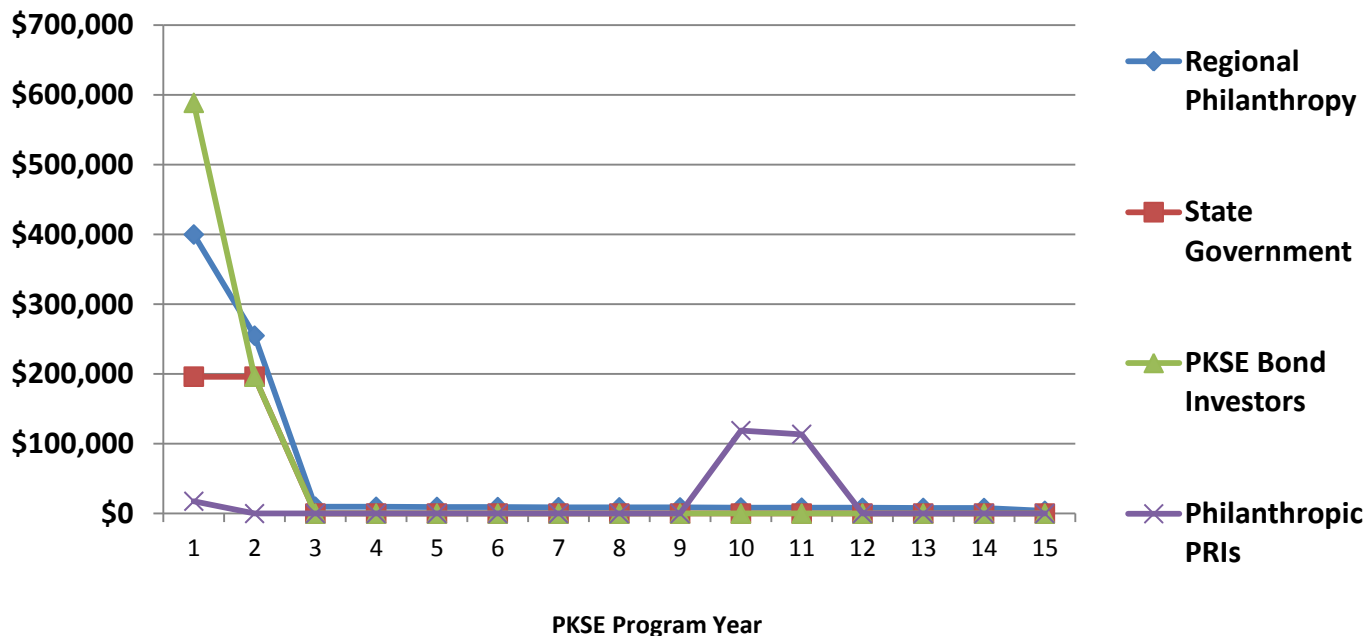
Because PKSE programs are very sensitive to parameter differences, the most important measure of PKSE program success is the amount of money a round of PKSE financing generates for re-investment in the next round of financing. The blue-diamond line shows the accumulation of special-ed savings gains. The green-triangle line shows the amount of “funds available for future financing rounds”. In year ten when the PKSE bonds need to be repaid, there is not enough special-ed savings to repay the bonds, and the green-triangle line goes below zero -- cash flow negative. A way has to be found to finance the gap.



PRI Contributions to Deal with Negative Cash Flows to Assure Sustainability

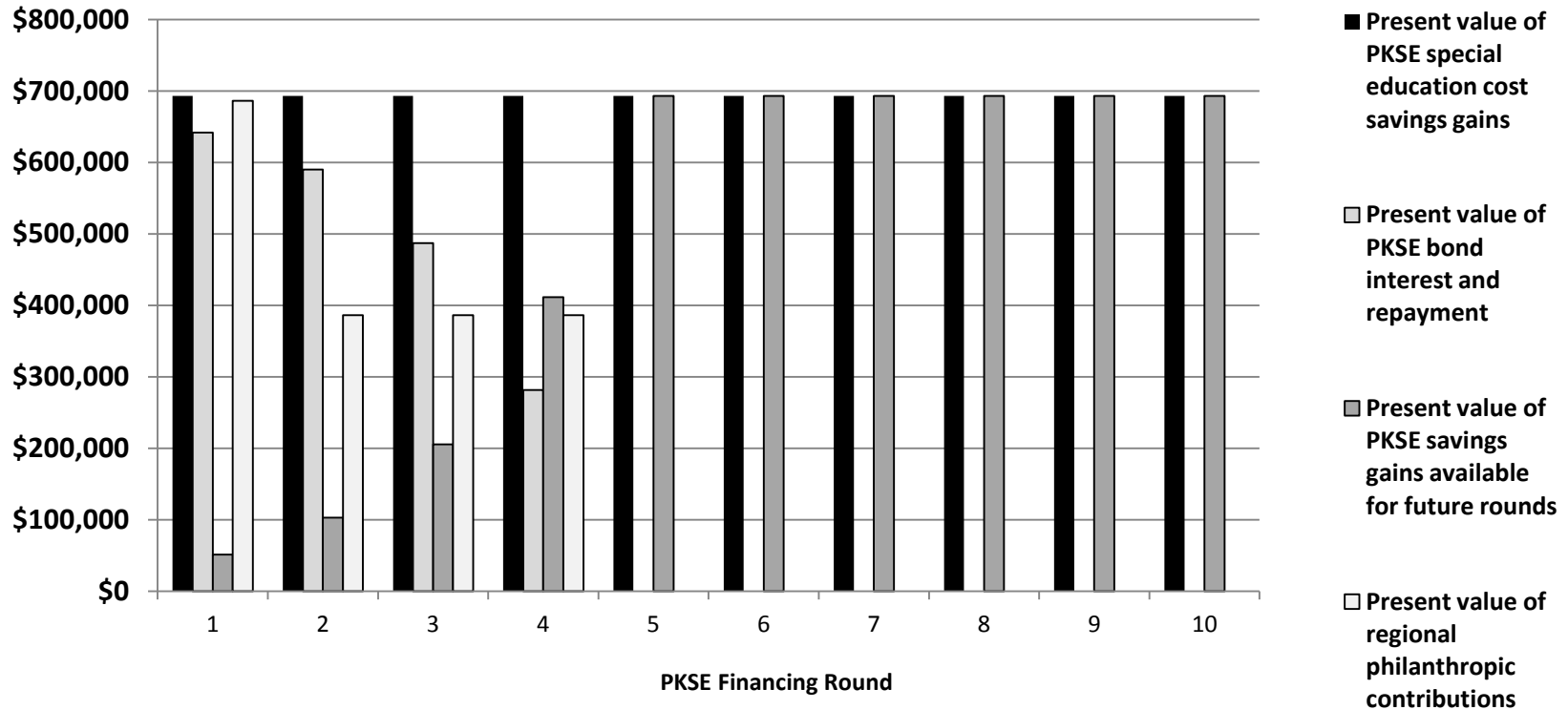
One way to finance the gap is program-related investments (PRIs). PRIs, the blue x line, are loans and equity investments, authorized under tax laws, which foundations can provide at favorable rates to support activities that have direct charitable purposes.

Sources of PKSE Program Funds
With PRI Investment



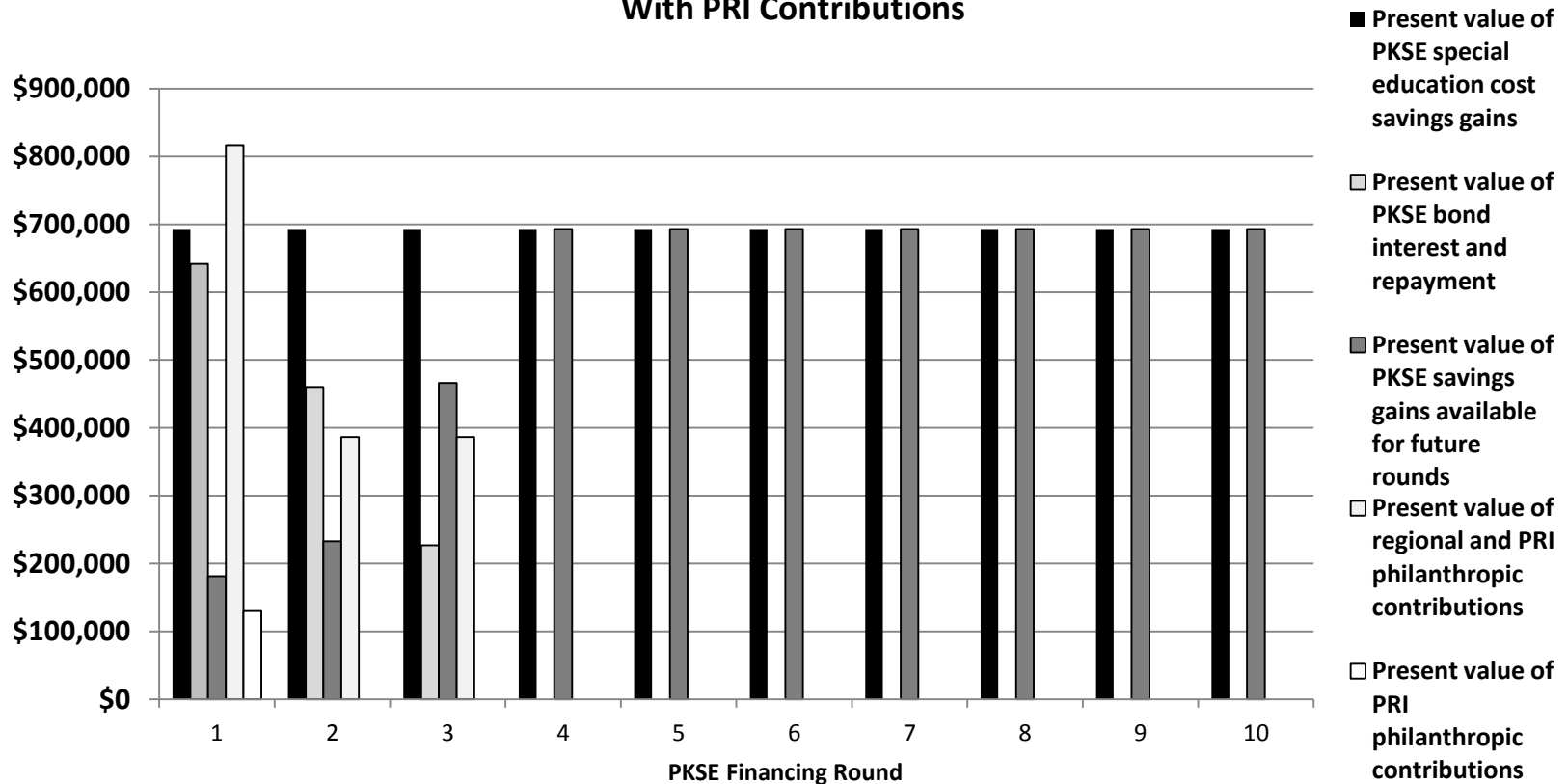
Ten PKSE Financing Rounds Without PRIs – Sustainability in Five Years

Comparison of PKSE Spec-ed Savings Gains, Bond Interest and Principle Payments, Savings Gains Available for Future Financing Rounds, and Regional Philanthropic Contributions



Ten PKSE Financing Rounds With PRIs – Sustainability in Three Years

Comparison of PKSE Spec-ed Savings Gains, Bond Interest and Principle Payments, Savings Gains Available to Future Financing Rounds, and Regional Philanthropic Contributions With PRI Contributions



Next steps. What you can do...

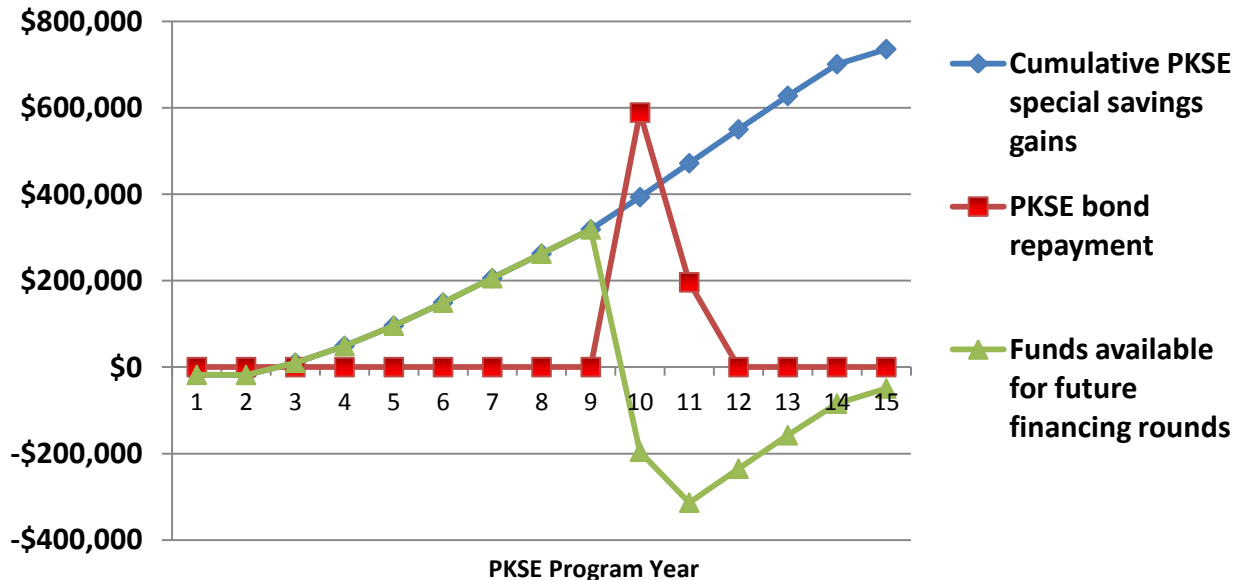
1. Convene meetings of key regional business, philanthropic, and preschool and k-12 education leaders
2. Discuss special education, grade retention and English language learner costs in regional public schools
3. Establish a business-philanthropic leadership coalition
4. Commission a study of the effectiveness of at least one regional quality-rated preschool in reducing k-12 special-ed, grade retention and ELL
5. Set up a PKSE School-Readiness Capital Partnership and get going..!!

Appendix

PKSE Program Sensitivity to Parameter Changes

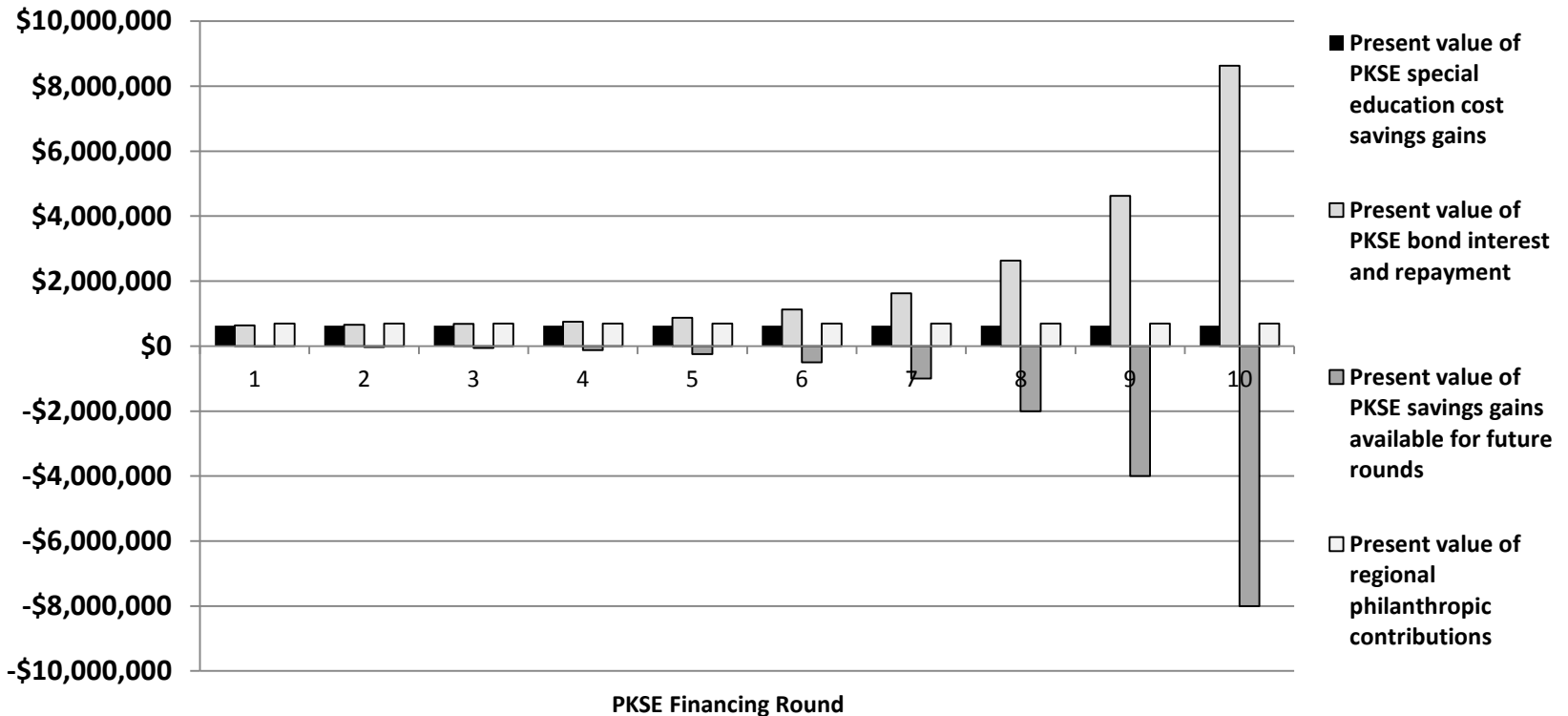
PKSEs are sensitive to parameter values such as the special-ed assignment rate for PKSE graduates. As shown below, the critical “funds available for future financing rounds” in this example goes negative if the special-ed assignment rate for PKSE graduates is just 1 percent higher than the assumed 7.5% rate.

Cumulative PKSE Cost Savings, Bond Repayment, and Funds Available for Future Rounds of PKSE Financing, Assuming an 8.5% PKSE Student Special-Ed Assignment Rate



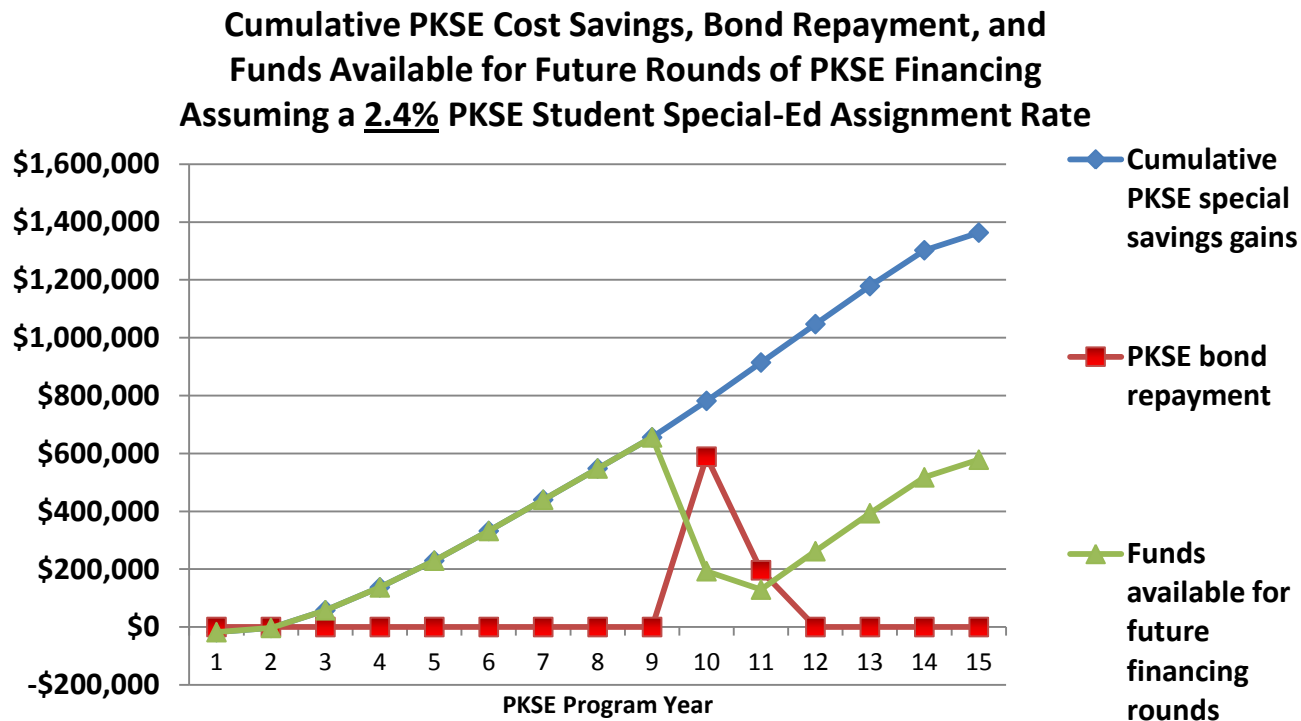
PKSE Program Sensitivity Through Ten Financing Rounds with 8.5% PKSE Assignment Rate

Comparison of PKSE Spec-ed Savings Gains, Bond Interest and Principle Payments, Savings Gains Available for Future Financing Rounds, and Regional Philanthropic Contributions, Assuming an 8.5% PKSE Student Special-Ed Assignment Rate



PKSE Program Sensitivity With 2.4% Assignment Rate

What do the operating results look like if the PKC study's projected 2.4 percent rate is used? They are impressive. The program generates ample funds for future financing rounds and needs no PRI financing because there is no negative cash flow, that is, the PKSE bonds can be fully repaid out of special-ed savings gains.



PKSE Program Sensitivity Through Ten Financing Rounds with 2.4% PKSE Assignment Rate

Comparison of PKSE Spec-ed Savings Gains, Bond Interest and Principle Payments, Savings Gains Available for Future Financing Rounds, and Regional Philanthropic Contributions Assuming a 2.4% PKSE Student Special-Ed Assignment Rate

