



Monetizing the value of social investments

THE LOW INCOME INVESTMENT FUND'S APPROACH TO IMPACT ASSESSMENT

OVER THE PAST 30 YEARS, LIIF has invested \$1.5 billion dollars and served 1.7 million people. In the last 10 years, we have doubled our capital impact and tripled our human impact, but we want to measure our social impact as well.

LIIF is committed to expressing the social value of the projects that we support. In most cases, however, we are not in the position to collect longitudinal data to track outcomes, let alone determine impact (i.e., answering the counterfactual question of what would have happened “but for” the intervention that LIIF supported). Still, high quality social science research exists that can help address many of the “but for” questions in the program areas where LIIF invests.

Our approach relies on leveraging the best available academic research in a common-sense manner. We use this evidence to estimate impact and monetized value based on output proxies that we *can* collect in the normal course of our business. We periodically update our approach to account for advances in research and our evolving understanding of the value of the projects that we support. LIIF focuses on social impact indicators that are central to our mission of poverty alleviation, and relate to our “impact pathways” or program areas: **affordable housing, early learning, education, health, and equitable transit oriented development**. As shown in the table on page 2, we organize the results in three major categories: *income boosts, health value, and societal benefits*. Please see Appendix A for sample calculations.

As a mission-oriented community development financial institution, we are committed to expressing the social value of our investments—not just their financial return. We fully recognize that our approach monetizing impact “by proxy” is imprecise and falls short of rigorous evaluation. In addition, most of our monetary estimates do not account for the time value of money. However, we think it is important to take a first step toward measuring the social value of community investments. Our approach is simple, but it is practical given our institutional setting and limitations. At the portfolio and sector level, we believe it is directionally accurate. We are making the calculator and its methodology fully accessible or “open source” so that they are transparent and available for comment and improvements by others. Please visit www.liifund.org/calculator to learn more.

IMPACT CATEGORY**MONETIZED SOCIAL VALUE**

(as of 08/14)

INCOME BOOSTS

Affordable housing: increased discretionary income*	\$8,356,485,958
High-performing schools: lifetime earnings increases**	\$2,028,650,000
Subtotal	\$10,385,135,958

HEALTH VALUE

Buying healthy locations: reductions in diabetes and extreme obesity**	\$412,319,566
Increased food expenditures from affordable housing**	\$2,812,953,972
Housing as a vaccine: permanent supportive housing for the homeless**	\$1,274,521,176
Equitable TOD: weight loss and increased physical activity**	\$10,800,284
Early childhood education: improvements in adult health	\$72,380,487
Economic value of community health centers	\$1,140,100,500
Subtotal	\$5,723,075,985

SOCIETAL BENEFITS

Early childhood education	\$13,182,527,996
High-performing schools**	\$811,460,000
Subtotal	\$13,993,987,996

Grand Total	\$30,102,199,939
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* \$2.8 billion in increased food expenditures from housing income boosts included in Health Value category

** Category does not include pre-2005 data

INCOME BOOSTS

We estimate income boosts to families and individuals in the following LIIF program areas: affordable housing, K-12 schools, and early care and education.

Income Boosts from Affordable Housing. The high cost of housing is one of the most pressing challenges facing low- and moderate-income households today. More than half of households earning less than \$30,000 per year spend over half their income on rent, forcing painful tradeoffs and leaving little for other basic necessities such as food, medical care, and transportation.¹ Further, overheated markets lead families to sacrifice safer, more resource-rich neighborhoods for cheaper housing. Conversely, research shows that safe, decent affordable housing in resource-rich neighborhoods not only relieves financial pressure, but also reduces stress, improves health and creates a platform for other social investments to take root.

LIIF calculates the social value of affordable housing in numerous ways. Here, we focus on income boosts generated by LIIF-supported affordable housing projects—a measure that directly responds to our mission of poverty alleviation.² We calculate the boost in discretionary income generated by housing affordability as the difference between market and affordable rents of the properties we finance. We assume that this impact holds for the project’s affordability restriction period.

Lifetime Earnings Boosts from High Performing Schools. Nothing is more important to future life chances than a good education. Education unlocks better jobs, higher wages, and improved health. The evidence suggests that boosting high school graduation rates translates to around \$500,000 in lifetime earnings.³ We use this figure to estimate lifetime earnings boosts generated by LIIF-supported schools that achieve higher high school graduation rates and 3rd grade reading scores—which are a proxy for graduation rates⁴—relative to district averages. We calculate four years of impact (four graduating classes) for each school that we support—a conservative assumption, since these schools operate for much longer periods. As LIIF gains access to longer-term capital to help finance K-12 schools, we will be able to assume longer periods of social impact.

¹ Joint Center for Housing Studies of Harvard University. 2013. “The State of the Nation’s Housing 2013.” JCHS tabulations of US Census Bureau, American Community Surveys.

² Although income boosts translate to economic spillover effects on the local and regional economy, we do not track these impacts because they are less directly relevant to our mission.

³ This figure is at about the midpoint of available estimates of earnings differences between high school graduates with no additional post-secondary education and those who drop out. In addition, we assume that at least some of the boost in graduation rates generated by high-performing schools translates to increased years of post-secondary education, which correspond to even higher earnings. See, for example: Haskins, Ron and Bloom, Dan. 2010. “Helping High School Dropouts Improve their Prospects.” *The Future of Children*. Princeton University. Levin, et al. 2007. “The Costs and Benefits of an Excellent Education for All of America’s Children.” Columbia University Teacher’s College. And Carnevale, et al. 2011. “The College Payoff: Education, Occupations, Lifetime Earnings.” Georgetown University Center on Education and the Workforce. August.

⁴ Hernandez, Donald. 2012. “Double Jeopardy: How Third Grade Reading Skills and Poverty Influence High School Graduation.” The Annie E. Casey Foundation.



Photo by Ethan Pines Photography

HEALTH VALUE

We estimate the value of improved health in the following LIIF program areas: affordable housing (including transit-oriented development), early care and education, and community health centers.

Buying a Healthy Location: Valuing Diabetes and Extreme Obesity Improvements from Opportunity-Rich Neighborhoods.

We draw on evidence from the U.S. Department of Housing and Urban Development's Moving to Opportunity (MTO) experiment to estimate the health value of housing's *location*—in particular, the finding that moving from public housing in a high-poverty area to a relatively low-poverty neighborhood generated large reductions in diabetes and extreme obesity among women.⁵ We use this evidence to model health improvements by increasing access to low-poverty, “healthy” communities—specifically, those in areas that meet the same criteria for “opportunity” neighborhoods that MTO used. We draw on evidence on annual medical costs associated with diabetes and extreme obesity to estimate medical cost savings generated over a project's affordability restriction term.

⁵ Ludwig, et al. 2011. “Neighborhoods, Obesity, and Diabetes—A Randomized Social Experiment.” *New England Journal of Medicine*. October 20.

Mitigating Food Insecurity through Affordable Housing. Children who do not have adequate nutrition are less healthy, suffer developmental impairments, and have lower educational achievement.⁶ Recent studies have uncovered a strong correlation between housing costs and food insecurity.⁷ To estimate the impact of LIIF-supported affordable housing on food expenditures, we draw from Bureau of Labor Statistics Consumer Expenditure Survey (CES) data, reported in the 2013 “State of the Nation’s Housing” by the Joint Center for Housing Studies of Harvard University.⁸ This report shows that families in the bottom expenditure quartile (a very conservative proxy for low-income) who live in housing that is affordable to them spend significantly more—around \$123 per month more for families with children, and around \$88 more for all renters—on food when compared to their counterparts who are more burdened by housing costs.⁹ We model this incremental increase in food expenditures over the term of each project’s affordability restrictions.

Housing as a Vaccine: Improved Health Outcomes and Medical Cost Savings from Permanent Supportive Housing for the Homeless. Permanent supportive housing is well known as an effective strategy for improving life outcomes for the chronically homeless—particularly those with chronic and complex illnesses. This intervention also generates significant public cost savings, primarily from reduced health services. We draw from a 2009 study¹⁰ by the Economic Roundtable to estimate medical cost savings.¹¹ The study specifically found that incremental cost savings to public agencies (e.g., County health services outpatient clinics) and agency sub-departments (e.g., corrections medical services)¹² providing physical and mental health services were \$1,853 per month, or \$22,242 per year, for the chronically homeless living in permanently supportive housing. We use this figure to estimate medical cost savings over the course of a project’s affordability restriction term.

Healthier Commutes: Housing Near Transit as a Strategy to Increase Physical Activity and Boost Health. Transit-oriented development (TOD) has been shown to generate positive human health outcomes through multiple pathways—for example, by increasing physical activity, or by improving access to health-promoting services and amenities. Further, *equitable* TOD—which incorporates housing

⁶ Cook, John, and Karen Jeng. 2009. “Child Food Insecurity: The Economic Impact on our Nation. A report on research on the impact of food insecurity and hunger on child health, growth and development commissioned by Feeding America and the ConAgra Foods Foundation.”

⁷ See, for example: Fletcher, et al. 2009. “Assessing the effect of changes in housing costs on food insecurity.” *Journal of Children and Poverty*: Vol. 15, No. 2, 79–93.

⁸ Joint Center for Housing Studies of Harvard University. 2013. “The State of the Nation’s Housing 2013.” Joint Center for Housing Studies tabulations of US Census Bureau, American Community Surveys; Bureau of Labor Statistics. 2011. Consumer Expenditure Survey.

⁹ *Ibid.*

¹⁰ Economic Roundtable. 2009. “Where We Sleep: Costs when Homeless and Housed in Los Angeles.”

¹¹ We chose this study based quality of the data available to the authors, the comprehensiveness (across multiple risk factors such as mental health status, substance abuse problems, and HIV/AIDS) and size of the study population, and the fact that its savings figure falls somewhere in the middle of the ranges in medical cost savings quoted in other studies. As such, it seemed to be a reasonable but conservative estimate to apply to the LIIF portfolio of permanent supportive housing projects.

¹² A nominal percentage of health-related costs for this population (2–3 percent) was tracked to private hospitals.

and services targeted to lower- and moderate-income households—can create and preserve access to these health benefits for these populations, and thus can serve as a critical platform for addressing health disparities and inequality.

To estimate health improvements from our equitable TOD investments, we draw from the only available experimental evidence demonstrating that increasing access to transit generates measurable health improvements—a 2010 longitudinal study of people living near the South Corridor Light Rail line in Charlotte, North Carolina before and after it became operational, setting the stage for a “natural experiment.” To estimate medical cost savings generated by LIIF-supported TOD projects, we pair this study’s findings on weight loss associated with commuting by transit with evidence on ridership near transit and medical costs associated with losing weight. We assume an impact period equivalent to the project’s affordability restriction term.

Buying Adult Health with Early Childhood Education. Early care and education helps children develop the cognitive functions and skills necessary to lead successful, healthy lives. A path breaking study published in 2014 by Nobel Laureate James Heckman, Frances Campbell, and colleagues provides compelling evidence, based on a randomized control trial, that high quality early care can deliver substantial health benefits that persist into adulthood—in particular, dramatic reductions in the prevalence of metabolic syndrome, which is associated with greater risk of heart disease, stroke, and type 2 diabetes.¹³ We use these findings to estimate similar impacts for children in LIIF-supported early care and education centers, making appropriate assumptions about the level of impact that these centers realistically deliver. Leveraging evidence on medical costs associated with metabolic syndrome, we then calculate cost savings associated with reduced prevalence of metabolic syndrome over a conservative time frame.

Economic Value of Community Health Centers. Community Health Centers (CHCs) generate health system cost savings by producing better health outcomes, delivering more efficient forms of care, and preventing costly downstream hospitalizations and emergency room visits. The best available evidence suggests that patients who access care at CHCs generate at least \$1,000 less in health care expenditures relative to people who do not use CHCs.¹⁴ To estimate monetary value, we assume that the clinic is providing services to the same number of people each year, irrespective of whether they are the same individuals. We multiply the value of the CHC savings by the term of LIIF’s capital, because we are confident that the clinic will remain in service at least for this period.

¹³ Campbell, et al. 2014. “Early Childhood Investments Substantially Boost Adult Health.” *Science*. Vol 343. March. The study’s authors plan to publish a follow-up study on the actual medical cost savings associated with long-term health impacts from the Carolina Abecedarian Project. Once these results become available to us, we will revise our impact methodology accordingly.

¹⁴ Ku, et al. 2009. “Using Primary Care to Bend the Curve: Estimating the Impact of Health Care Expansion on Health Care Costs.” The George Washington University School of Public Health and Health Services.

SOCIETAL BENEFITS

This section describes our approach to estimating the value of societal benefits in the following LIIF program areas: early care and education and K-12 schools.

Societal Benefits from Early Care and Education. Several recent studies have used data from multiple random assignment experiments to propose estimates for early care and education's long-term societal benefits—ranging from \$7 to \$20 in societal returns per dollar invested. We take a conservative approach and assume \$7 in returns per dollar invested—the figure that President Obama cited in his State of the Union address in 2013—generated by a combination of increased family income, educational attainment, and reduced societal costs such as incarceration and special education. This figure is roughly in line with Nobel Laureate James Heckman's calculations that the Perry Preschool program and the Chicago Child-Parent Centers had benefit-cost ratios of 9:1 and 8:1, respectively, and that the Perry Preschool program's return on investment was in the range of 7–10 percent.¹⁵ We calculate impact over the term of LIIF's grant to the early care and education center—a conservative assumption, since the centers usually continue to serve children from low- and moderate-income families for many years after our grant term ends.

Societal Benefits from High Performing Schools. To estimate societal benefits of high performing K-12 schools other than increased earnings potential for students, we again rely on evidence around the impact of boosting high school graduation rates—as well as 3rd grade reading scores, as proxies for graduation rates. Multiple estimations exist for lifetime avoided social costs to taxpayers (e.g., higher tax revenues, lower incarceration rates, lower government medical expenditures) of graduating high school as opposed to dropping out. Studies place this value in the range of \$200,000, so this is the figure we use.¹⁶ We calculate four years of impact (four graduating classes) for each school that we support—a conservative assumption, since these schools operate for much longer periods.

¹⁵ Heckman, James, and Dimitriv Masterov. 2007. "The Productivity Argument for Investing in Young Children." Lecture given as the T.W. Schultz Award Lecture at the Allied Social Sciences Association annual meeting, Chicago, January 5–7; see also: Heckman, et al. 2009. "The Rate of Return to the High/Scope Perry Preschool Program." National Bureau of Economic Research Working Paper No. 15471.

¹⁶ Levin, et al. 2007. See also Sum, et al. 2009. "The Consequences of Dropping Out of High School: Joblessness and Jailing for High School Dropouts and the High Cost for Taxpayers." Northeastern University Center for Labor Market Studies." October.

APPENDIX A: SAMPLE CALCULATIONS

Mitigating food insecurity through affordable housing. Here is how we model the incremental increase in food expenditures generated by LIIF-supported affordable housing projects:

1. Determine the number of family-oriented (FU) and elderly or homeless-oriented (EHU) affordable units restricted to low- and very low-income households in a given housing project
2. Assume monthly per-FU increase in food expenditures of \$123, and monthly per-EHU increased in food expenditures of \$88
3. Determine the affordability Restriction Term (RT) or the term of LIIF's loan, whichever is longer
4. Estimate the boost in food expenditures with this formula: $RT \times (FU \times \$123 \times 12) + RT \times (EHU \times \$88 \times 12)$

Lifetime earnings boosts from high performing schools. Here is how we estimate the extent to which a LIIF-supported high school increases lifetime earnings for its students:

1. We assume that an incremental boost in high school graduation rates translates to an average of \$500,000 of increased lifetime earnings per student.
2. Determine the graduation rate of the supported charter high school (GRC)
3. Determine the district average high school graduation rate (GRD)
4. Determine the number of graduating students over the assumed four-year term of impact (S)
5. With the inputs from Steps 1-4, we can estimate the monetary value of increased lifetime earnings using this formula: $(GRC - GRD) \times \$500,000 \times S$

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