U.S. Department of Education

Applying Human Capital Performance Bonds to Career and Technical Education

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Applying Human Capital Performance Bonds to Career and Technical Education

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U.S. Department of Education
Office of Career, Technical, and Adult Education

NATIONAL CENTER FOR INNOVATION IN CAREER AND TECHNICAL EDUCATION

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INVEST IN OUTCOMES

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LIST OF EXHIBITS

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ABBREVIATIONS

Act	Minnesota's *Pay-for-Performance Act of 2011*
CTE	career and technical education
DEED	Minnesota Department of Employment and Economic Development
HUCAP	Human Capital Performance Bonds
k–12	kindergarten through grade 12
MNDOC	Minnesota Department of Corrections
munis	municipal bonds
ROI	return on investment
SIBs	social impact bonds

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EXECUTIVE SUMMARY

Profound demographic and technological changes are upon us, changes that pose new and evolving challenges requiring fresh approaches from virtually every sector and system. Education is no exception. As fiscal pressures grow, federal, state, and local governments are cutting back where they can, often in human service budgets. Ironically, these same human services, funded appropriately, could help remedy public budget imbalances over the long run and produce social change.

Social impact investing answers the question, "How can we identify and fund those human services that contribute to the health of our people and communities over time?" It is rooted in the recognition that we under-invest in prevention and services designed to promote general health and well-being; we pay instead to treat the far more costly aftereffects.

The concept of social impact investing is simple. Human service providers generate economic value to society, and that value can be used to fund their services. Among the many social and financial benefits created, a subset exists that can be measured and that has actual cash value to the public sector (or other entities, such as health care organizations). These future cash savings can be used to finance the up-front services that providers deliver.

Social impact investments, often referred to as "social impact bonds" (SIBs), have two components: (1) a pay-for-performance payment system, and (2) a financing mechanism. Both can be, and are, used separately. Pay-for-performance shifts the focus from paying for activities to paying for specified results, bringing about increased accountability in contracting and/or payment systems. The financing mechanism adds the element of time, recognizing that value on the investment often requires time to materialize. In this way we can finance high-return programs that fall outside of a normal budgeting cycle.

Most SIBs, like those in place in New York City and the United Kingdom, are not really bonds at all but a form of equity investing. The state of Minnesota authorized a pilot of a different financing structure known as "Human Capital Performance Bonds" (HUCAP). The two key design features that distinguish HUCAP from other social impact investing models are (1) bond funds that are used for capital; and (2) payments to nonprofits that vary with their performance. These design features are intended to provide a number of incentives considered important to the long-term success of HUCAP by (1) shifting the focus from cost to value; (2) paying providers for the value they create, which encourages them to continually strive to improve performance; and (3) diminishing the common

problem of "cherry-picking" (choosing to serve only the easiest cases because the payment does not vary). Because providers are paid for their value added, they will be compensated more for good results with harder-to-serve clients.

HUCAP is designed with state bonds for one primary reason — to encourage the infusion of private capital into human services. HUCAP is designed to attract market-rate investors, a much larger market (trillions of dollars), rather than the much smaller, albeit developing, social investor market that SIBs rely on (hundreds of millions). This also makes HUCAP less risky than SIBs for investors.

Although HUCAP has the potential for widespread replication and great scale, not all services are good candidates for HUCAP. At its heart, HUCAP is a set of contracts, which together comprise the deal. The deal can be transacted only if a set of key conditions are met. Those conditions are (1) a tested and proven program; (2) a sufficient stream of financial benefits; (3) the means and willingness to capture financial savings; (4) the means to collect valid and reliable data; and (5) a stream of benefits that accrue over time.

To illustrate how HUCAP might apply to career and technical education (CTE), two examples are given here. These examples highlight the key conditions in different ways.

INTRODUCTION

Profound demographic and technological changes are upon us, changes that pose new and evolving challenges requiring fresh approaches from virtually every sector and system. Education is no exception.

An aging population will need higher levels of services, especially costly health services. Our youngest generation is increasingly nonwhite, a population that has historically suffered persistent disparities in education attainment, health access and outcomes, and income and poverty. At the same time, growth in the labor force is stagnating, so the "dependency ratio" — the number of elderly and young people compared to the number of people in the workforce (i.e., those who provide tax dollars) — is growing. Technology might provide some answers, but it is also profoundly changing the nature of work. Jobs that once helped sustain a large middle class are disappearing. And access to well-paying jobs now requires a greater investment—two in three American jobs will require some form of postsecondary education to attain one.

As fiscal pressures grow, federal, state, and local governments are cutting back where they can, often in human service budgets. Ironically, these same human services, funded appropriately, could help remedy public budget imbalances over time and produce social change. Numerous studies (for example, see meta-analyses by Drake 2013, and Kay and Pennucci 2014) have shown that the best human services deliver more in benefits than they cost, for example, early childhood learning, workforce training, post-incarceration programs, chemical dependency treatment, supportive housing, and counseling for long-term care givers.

Social impact investing provides an answer to the question, "How can we identify and fund those human services that contribute to the benefit of our people and communities over time?" Like traditional investing, it recognizes that certain activities provide financial gains. Unlike traditional investing, the ultimate goal is not growth in a financial portfolio but growth in the societal portfolio of effective human services.

A number of social impact investing projects are in the planning stages, but only a handful have actually been implemented so far. The United Kingdom launched the first effort in 2010 with investments to reduce prisoner recidivism. New York City and Massachusetts have implemented similar pilots. Projects in the planning stages include those in Chicago and Utah for early childhood education; South Carolina for the Nurse Family Partnership; and Fresno, California to manage asthma.

This article focuses on Minnesota's unique social impact investment model, known as "Human Capital Performance Bonds" (HUCAP). It first briefly describes social impact investing and outlines HUCAP in greater detail. It then discusses how HUCAP could be applied to career and technical education (CTE) and some of the challenges that will need to be addressed to accomplish that.

WHAT IS SOCIAL IMPACT INVESTING?

Social impact investing is rooted in the recognition that we under-invest in prevention and services designed to promote general health and well-being, and that we pay instead to treat the far more costly aftereffects. An obvious example is failing to invest sufficiently in vaccine development (Ebola, for example) and then facing the enormous consequences of treatment and disease management. Social impact investing provides a source of funds to expand preventive services.

The concept of social impact investing is simple. Human service providers generate economic value to society, and that value can be used to fund their services. Among the many social and financial benefits created, there exists a measurable subset that has actual cash value to the public sector (or other entities, such as health care organizations). For example, when a workforce training provider helps an unemployed worker secure a good job, the government receives higher tax revenues, spends less in public benefits, and may spend less on services, such as incarceration or child protection. These future cash savings can be used to finance the up-front services.

Social impact investments, often referred to as "social impact bonds" (SIBs), have two components: (1) a pay-for-performance payment system, and (2) a financing mechanism. Both can be, and are, used separately.

PAY FOR PERFORMANCE

"Pay for performance," or "pay for success," are buzz terms these days, often loosely used. But in the social impact investing world, pay for performance recognizes that human services—such as workforce training, supportive housing, chemical dependency treatment, and education—create social value and, in many cases, financial value as well. By "paying for performance," the focus becomes the targeted, desired results to be achieved.

Pay for performance shifts the focus from paying for activities to paying for specified results, bringing about more accountable contracting and/or payment systems. Government budgets are traditionally cost-based. For example, kindergarten through grade 12 (k–12) budgets typically rely on per-pupil funding formulas—with assumptions about base costs and student factors that make it more or less costly to engage in the activity of educating a child (see, for example, Education Law Center 2013). These k–12 funding formulas typically are not based on outcomes

(e.g., how much do school children learn) but rather on the number of individuals who are enrolled. Part of the problem is that defining and measuring outcomes can be very difficult. It is no easy task, but must be done in order to monetize results.

In higher education, there is a trend to pay for performance. Twenty-five states have funding formulas in place that allocate some amount of funding based on performance indicators, such as course completion, time to degree, transfer rates, the number of degrees awarded, or the number of low-income and minority graduates.[1] Five more states are transitioning to some type of performance funding. The performance metrics vary by state, but a quick review of these figures shows that performance-based payment systems compel governing bodies to carefully articulate the types of results that are most important, and to define how much improvement merits payment (e.g., National Conference of State Legislatures 2014).[2]

FINANCING MECHANISM

Social impact investing takes performance-based payments and adds a financing element. Not only does it generate pay for performance, it creates another significant benefit: *Services are funded by the future savings they produce and increased tax revenue they generate*. In the context of these benefits, it should be noted that adding the financing element narrows the range of outcomes (and services) that are suitable for social impact investing. First, it is limited to those subsets of results that can be monetized. Second, the savings are captured over time, at best in the range of three to 10 years. In this way, high-return programs that fall outside of a typical one- or two-year government budgeting cycle can be financed.

Postsecondary education, for example, produces a trained workforce with better economic prospects. But it is also linked to many other benefits such as broader world views, better parenting, and more involved citizenship, to name a few. Yet it would be difficult, if not impossible, to claim that this last set of benefits produces cash savings for the public sector. Looking at the pay-for-performance systems in place in higher education, we see that few of the metrics pertain to outcomes, such as increased productivity. Even fewer have direct financial implications for the public sector, such as Florida's wages one year after graduation or Minnesota's 4 percent increase in employment. (Both of these result in higher taxes and, perhaps, reduced social welfare expenditures for the county, state, and federal governments.) Most of the metrics mark milestones, such as educational progress (e.g., completing 30 credits or the first full math course), or identify outputs (e.g., graduation rates) — metrics that have no direct monetary value.

[1] See http://www.ncsl.org/research/education/performance-funding.aspx.
[2] Ibid.

Social impact investing introduces the element of *extended* time in paying for human services. Using bonds to finance social services is an implicit recognition that benefits often accrue over a number of years. For example, 5-year-olds must go to school, but not because we hope they will be contributing members of society by age 7. Social impact investing assumes that governments under-invest in preventive human services, because budgeting rules tend to recognize short payback periods only.

In the United States today, public investments are commonly made to gain long-term benefits. This practice is confined mostly to infrastructure projects, which are funded through debt instruments known as "municipal bonds" (munis). Munis are a common form of debt instrument used by state and local government entities to raise money. They work much like a mortgage — an initial substantial amount of money is borrowed (in the case of a mortgage, to buy a house), and that loan is paid off over time in the form of principal plus interest. In the case of munis, the borrower is a government entity, and the lenders are investors who buy the bonds. Just as people are issued credit scores, government entities have credit ratings. The credit rating indicates how likely the issuer is to repay the bond. The issuer's credit rating therefore impacts the interest rate an issuer will need to pay in order to attract investors (i.e., the higher the risk of nonpayment, the higher the interest rate).

Projects such as school buildings, new roads and bridges, or sewer treatment plants are typically very expensive and their benefits last many years. By financing these projects through bonds that are repaid over time, governments are able to make the project affordable for today's taxpayers and spread the costs to future taxpayers. The United States market for munis was estimated at $3.7 trillion at the end of calendar year 2011 (U.S. Securities and Exchange Commission 2012).

Munis are an attractive source of financing. The interest paid to investors is tax exempt at the federal level and also at the state level if the investor lives in the state where the bond is issued. This means that investors usually accept lower interest payments than on other types of borrowing (assuming comparable risk), lowering the financing cost to the issuer.

HUMAN CAPITAL PERFORMANCE BONDS AS A FORM OF SOCIAL-IMPACT INVESTING

"Social-impact bond" (SIB) is the familiar term used to describe social-impact investing. However, these structures, in place in New York City, the United Kingdom, and elsewhere, are not really bonds at all, but rather a form of equity investing. In these models, investors provide the cash for services and are repaid by the municipality or state, depending on how well service providers perform. Service providers are paid a fixed payment, sometimes with a bonus for exceptional performance. Investors take most of the risk. Therefore, they demand a higher return on their investment than they do for investing in municipal bonds.

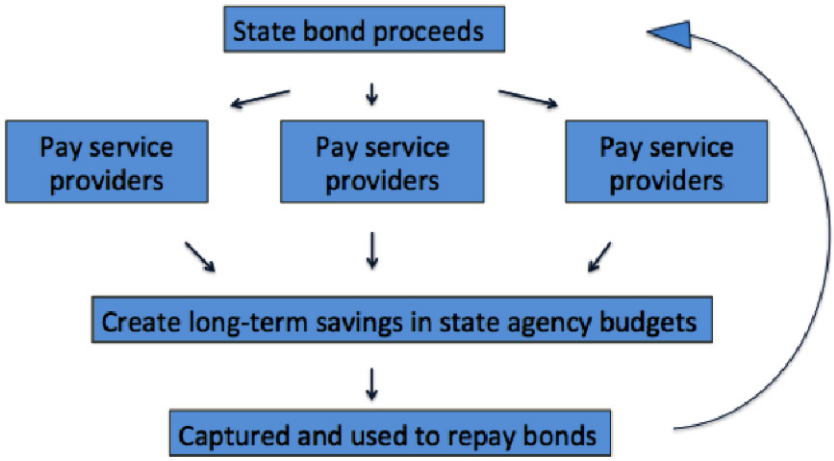
The state of Minnesota authorized a pilot of a different financing structure, Human Capital Performance Bonds (HUCAP). HUCAP has two key design features that distinguish it from other social impact investing models: (1) it uses bond funds for capital; and (2) payment to nonprofits varies with their performance.

In 2011, Minnesota passed the *Pay-for-Performance Act* (*Act*) (Minnesota Statutes 2011) establishing a HUCAP pilot and authorizing $10 million of bonds for that purpose. The *Act* authorized the issuance of a form of municipal bonds known as "appropriation bonds," a less common form of municipal bond that have been used by states for a variety of purposes. Compared to the more common "general obligation" bond (where the state has a legal obligation to repay the bonds) if appropriation bonds default, the state may appropriate funds to cure the default but is not legally bound to do so. In Minnesota, a question of the state constitutionality of appropriation bonds for such purposes was settled favorably, and the state was cleared to issue bonds for a HUCAP pilot.

With HUCAP, Minnesota enters into contracts with service providers (or an intermediary, who in turn contracts with service providers). The state issues bonds to create a pool of cash for paying the human service providers. That is, the state incurs debt which it promises to repay over time at specified interest rates; an underwriter, such as a brokerage house, buys the bonds from the state and resells them to investors, such as individuals, insurance companies, pension funds, and corporations. The bond pool funds are paid out to service providers once the savings from a positive intervention have been documented. In the meantime, the state accrues savings over time from reduced costs in human services, health care, incarceration, etc. These savings are

used to pay back the principal and interest on the bonds. The terms of the bonds, such as length and amortization schedule, can be tailored to the expected cash flow of the savings (see exhibit A).

Exhibit A: Human Capital Performance Bonds Cash Flow



The payment to service providers varies with the amount of savings they produce for the state. The more financial value they create, the more they are paid. The outcomes for each individual served are tracked and form the basis for payment. If an individual has a poor outcome, a provider might not be paid for that individual. If an individual has a stellar outcome, the provider might be compensated a great deal.

It is important to note that in HUCAP, as well as in other forms of social impact investing models, outcomes are measured through rigorous evaluation. Because the state is relying on cash savings to accrue so it can repay the bonds, it must have confidence that outcomes are created by the service in question, and not by some other set of services or by chance. In the case of human services, this can be a difficult task. In education, for example, students learn in the classroom, but they also learn elsewhere. Therefore, evaluations typically compare the outcomes of the group being served to those of a comparison or control group.

The process of documenting savings and evaluating results may take a few years. Many service providers lack the cash to finance services for which there will be no revenue for two or more years. If service providers need cash to fund their services, working capital can be arranged through organizations, such as Minnesota's Nonprofit Assistance Fund; banks disseminating funds to assist disadvantaged communities, pursuant to the *Community Reinvestment Act*[3]; or foundations. The terms for the working capital may vary, in an effort to reduce the risk taken by service providers. For example, the loans might be made at low or even zero interest rates. Or

[3] The *Community Reinvestment Act* was enacted by Congress in 1977 (12 U.S.C. 2901).

perhaps, if service providers' performance fails to earn them enough money to repay the loans, a portion of the loans could be forgivable.

INCENTIVES FOR PERFORMANCE

The design features of HUCAP are intended to provide a number of incentives considered important to their success. First, HUCAP shifts the focus from cost to value. There is a tendency to under-invest in more intensive services because they are more costly. Such budgetary decisions ignore the other side of the equation—the benefits and savings that are being created. Analyses of workforce training programs in Minnesota, for example, showed that programs offering more intensive services tended to produce superior outcomes (Chase, Da'ar, Diaz, and Valorose 2011). By measuring return on investment (ROI) instead of cost, the focus shifts to providing services with the highest returns to society and taxpayers.

Second, paying providers for the value they create encourages them to continually strive to improve performance. An analysis of workforce training providers in Minnesota showed a wide range of financial savings—the savings from some providers were almost negligible, while others saw returns of $40,000 or more per person served (Chase, Da'ar, Diaz, and Valorose 2011). The mere availability of a tool to measure ROI has led workforce training providers to ask, "*What's my ROI?"* Ideally, from this, best practices will become known and disseminated to help all providers improve their ability to serve their clients.

Third, the common problem of "cherry-picking" (choosing to serve only the easiest cases because the payment does not vary) is diminished. Because providers are paid for their value added, they will be compensated more for good results with harder-to-serve clients. In workforce training, for example, the outcomes are more dramatic for clients who have been out of the workforce longer, incarcerated, or heavily reliant on public benefits.

INFUSION OF CAPITAL INTO HUMAN SERVICES

HUCAP uses state bond funds for capital, instead of equity-like investments. HUCAP is designed with state bonds for one primary reason—to encourage the infusion of private capital into human services. HUCAP is designed to attract market-rate investors, a much larger market (trillions of dollars), rather than the much smaller, albeit developing, social investor market that SIBs rely on (hundreds of millions of dollars). This is important for scaling purposes. Real impact requires attracting large amounts of capital (in the billions of dollars, potentially) to make a meaningful difference in the opportunity areas where adequate financial and social returns can be generated.

HUCAP is less risky for investors than SIBs, a key distinction between the two. With SIBs, the return for investors is based on the performance of the service providers, requiring that investors thoroughly investigate and understand the nature of the related risk (e.g., the effectiveness of the services, the reputation of the service providers, the performance measures, the methodology for evaluation), which will be different for every SIB. This process is complicated and costly. In HUCAP, investors are not investing in the performance of the service providers but in state bonds, which earn a rate of return based solely on the state's credit rating. This makes the transaction routine (e.g., underwriters, rating agencies) and keeps transaction costs low. The routine nature of the transaction broadens access to capital markets, with the hope that such financing could be scaled considerably in the future.

While HUCAP starts with municipal bonds, it is important to note that any sort of bonds could be used. Nonprofits and corporate entities can also issue bonds. Minnesota's *Pay-for-Performance Act* specified the use of municipal bonds because it is the least costly, least risky way to pilot this new type of social impact investment.

If HUCAP is shown to be successful, it could be replicated in any jurisdiction or organization—public or not—willing to sell bonds for services that reduce future costs. This could include health plans seeking to reduce the costs of treating disease, counties seeking to reduce law enforcement or child protection costs, or school districts looking to reduce special education or remedial education costs. This avenue potentially opens up even greater sources of capital.

GOOD CANDIDATES FOR HUCAP: CONDITIONS OF THE DEAL

Although HUCAP has the potential for widespread replication and great scale, not all services are good candidates for HUCAP. At its heart, HUCAP is a set of contracts and agreements, which together comprise the deal. These may take various forms, such as service contracts between service providers and the state; bonds as a contract; loan agreements between the service providers and working capital providers; or data agreements between state agencies and evaluators and/or service providers. The deal can be transacted only if the following set of key conditions is met.

Condition 1: A Tested and Proven Program

Given that service providers expect to be paid, when issuing HUCAP, it is probably not a good time to experiment with an untested service or program model. In order to get service providers to the table and to agree to their contractual requirements, they must be able to answer the following questions with some certainty: How much can I expect to be paid? What are the risks?

If a service is new, there is no evidence on which to make those determinations. In Fresno, California, for example, before project organizers move to SIBs for financing, they are conducting a "proof-of-concept" trial to ensure that their services generate the anticipated level of financial returns.

The good news is that the focus on evidence-based practices has intensified, and thus an increasing number of high-quality studies quantify the costs, benefits and risks in many service areas, suggesting which might be good candidates for HUCAP (e.g., Washington State Institute for Public Policy 2015). Evidence-based data also enable those structuring the deal to develop the necessary cash flow and risk analyses to determine how best to structure the financial terms of the deal.

Condition 2: Evidence of Sufficient Financial Benefits

Most human services create an array of benefits, some of which are not monetary in nature. Pay-for-performance contracts can pay for nonmonetary outcomes, but social impact investing cannot as it captures future savings to pay for services today.

Minnesota's review of possible HUCAP pilots examined services for ex-offenders, in which the identifiable financial benefits to the state are reduced days in prison and higher tax revenues due to increased wages. But there is an entire host of other potential benefits: shorter jail terms; reduced court and law enforcement costs at the county level; reduced public assistance and child protective services at the state and federal levels; healthier families; improved academic achievement for children; reduced victims' costs; and better citizenship.

It is important to select a service for which there is evidence that the financial benefits are sufficient to cover the cost of service provision plus transaction and financing costs. The full set of costs comprises bond issuance, interest on the debt, and evaluation, legal, and administrative costs. Also, service providers might need to access working capital, since they will not be paid until well after they have incurred the costs of providing services. If there is not sufficient evidence that people can reasonably conclude that they will come out of the deal at least "whole," they will be reluctant to participate in the deal.

For example, the Minnesota Department of Corrections (MNDOC) conducted a rigorous evaluation of a pilot program called EMPLOY.[4] On the basis of this evaluation, it was determined that for every dollar spent on EMPLOY, the state saved $2.20 in correction costs and that the state collected higher taxes (MNDOC 2011). With this evidence, the state can be assured that its transaction and financing costs will be covered, and service providers can have confidence that payment will meet or exceed their costs.

[4] EMPLOY is the actual name of the program, not an acronym.

Condition 3: The Means and Willingness to Capture Savings

HUCAP requires public agencies to account for savings in their budgets and to use these savings to cover the debt service on the bonds. This is a significant departure from the way states typically budget. State agencies rarely take into account the costs of or benefits from their activities that accrue to other departments. Yet costs and benefits can be spread over many agencies. With conventional budgeting, the Minnesota Department of Employment and Economic Development pays for workforce training services. But the Department of Human Services and MNDOC see reductions in their spending as a result, and the state's coffers grow from increased tax revenue. HUCAP provides a way of accounting for all of these costs and benefits. It also requires public agencies to see and act upon the bigger-picture impact of human services.

Sometimes benefits are dispersed, making it difficult or impossible to capture them. In some cases, the benefits are private and broadly spread across the public. Consider victimization costs. Studies have attempted to quantify these (e.g., McCollister, French, and Fang 2010; and Drake, Aos, and Miller 2009), yet the question of how to access these savings remains. Higher education is another good example of a service area where important tangible benefits are realized but would be difficult to capture.

Often, financial benefits cross jurisdictional boundaries. Services for ex-offenders, for example, yield financial benefits to county law enforcement and courts that are real and tangible, as are the tax benefits to the federal government. And yet it is challenging enough to get state agencies to recognize costs and benefits across agency lines, much less bring another level of government to the table (which, after all, reaps the benefits at no costs or risk).

A major potential player in the use of HUCAP is the federal government because it finances so many local programs, including workforce training and education. Federal funding is especially prominent in health and human service programs. Federal partnerships are not necessary but could greatly enhance the savings being recognized, thereby reducing risk and fostering even greater capacity to finance projects. For example, Medicaid costs are split between the states and the federal government. If the federal government entered a contract with the state to share any of the savings it receives as a result of a state-level intervention, the added federal savings would considerably increase the return on investment, make transactions less risky, and thereby attract more investment. Another avenue for federal partnerships would be waivers that release federal funding restrictions when services are funded by SIBs or HUCAP.

Condition 4: The Means to Measure and Validate Results

In HUCAP, as in other social impact investing models, outcomes are usually measured by comparing the results of the treatment group to those of a comparison or control group. The

collection of valid and reliable data on the control and treatment groups, although challenging, is a key factor in the success of social impact investing. For example, in working with ex-offenders, some government agencies have an interest in "stable housing," but to measure outcomes it is necessary to know how "stable housing" is defined, measured, and validated. What, for example, does "stable" mean in this context? Even once defined, such an outcome can be difficult to track, measure, and validate because ex-offenders often lack stable housing and thus can be difficult to locate. There is no pre-existing database for determining where ex-offenders are living.

Condition 5: A Stream of Benefits Accrues Over Time, but Without Too Much Lag

If savings are sufficient to cover the costs of providing a service within one or two years, social impact investing is not needed. In this case, the transaction costs of structuring the deal and issuing the debt are best avoided. On the other hand, if the time lag between service provision and the capture of benefits is too long, say more than 10 years, it makes evaluation impractical and/or very costly.

APPLICATIONS TO CAREER AND TECHNICAL EDUCATION

To illustrate how HUCAP might apply to career and technical education (CTE), and some of the challenges that would be necessary to address, two examples are considered below. They were selected because some evaluation data exist on these programs and because the possibility of monetary savings ensues from each of them. The reader will also see that they highlight the key conditions set forth in the previous section but in different ways. To recap, those key conditions, illustrated by the examples below, are: (1) a tested and proven program; (2) a sufficient stream of financial benefits; (3) the means and willingness to capture financial savings; (4) the means to collect valid and reliable data; and (5) a stream of benefits that accrues over a time with limited lag.

EXAMPLE 1: CONTEXTUALIZED MATH

In the United States, 60 percent of recent high school graduates enter community college already behind the education level of their peers (Jaggars, Hodara, and Stacey 2013). These students are required to take remedial or developmental education courses before enrolling in college-level courses. In some cases, students are referred to two, three, or even four semesters of developmental education. This example is about a school district whose goal was to reduce its students' need for developmental education.

Proven program. A national evaluation of the Math-in-CTE model (Stone, Alfeld, Pearson, Lewis, and Jensen 2006) found that high school students in an experimental group performed significantly better on two tests of math ability—the TerraNova[5] and ACCUPLACER.[6] The researchers were interested in learning whether a math-enhanced CTE curriculum decreases students' likelihood of requiring postsecondary math remediation. The evidence suggests that contextualized math can help students attain this result

Financial benefits. If a school district wants to invest in the Math-in-CTE model but has no funds available to implement it, it can decide to use HUCAP. Recognizing that developmental education is a significant cost for the state's community colleges (as well as for students), the

[5] See http://www.ctb.com/ctb.com/control/productFamilyViewAction?productFamilyId=449&p=products.
[6] See https://www.accuplacer.org/cat.

district sees that the source of savings could thus be the state's community colleges themselves. Together, the district and the community colleges would then need to determine whether the expected savings are great enough to cover the implementation costs by agreeing on the answers to the following questions:

- How many of the Math-in-CTE students actually enroll in the state's community colleges?
- How many students can forego developmental math as a result of Math-in-CTE? Over what time period?
- What is the amount saved for each student who foregoes developmental math?
- What are the costs of implementing Math-in-CTE? How many successful students would be needed to cover the costs?

Means and willingness to capture savings. Note that following this path requires developing a cooperative working relationship between the school district and the local community colleges. It also requires determining if the community colleges are willing to recognize, capture, and return the savings to the school district? Given that the school district and community colleges are generally under the jurisdiction of different government agencies, it might be especially challenging to agree on a system of savings offsets. Furthermore, state standards may make it difficult to implement Math-in-CTE. The state may need to be a partner, perhaps through providing waivers or adopting legislation that allows Math-in-CTE to be expanded.

Data collection. In this hypothetical case, the school district and community college conduct financial and data analyses. They find that the savings for each student accrue in the first year of community college and that it will take about five graduating classes of high school students to yield enough savings to cover the implementation costs. So the district and college strike a five-year deal. The school district agrees to implement the program, and the community college agrees to capture all of the savings from the first five years and remit them to the school district. All of this assumes that they can track students (both in the experimental and control/comparison groups) from high school into postsecondary schools. If they have no way of doing this, then measuring and validating the results will not be possible.

Stream of benefits. The community college may or may not have to sell bonds to realize savings. If both parties agree to track enrolling students for each of the five cohorts of graduating students, then the community college can simply calculate the savings and remit them to the school district each year—if the school district is willing to wait for more than five years to get all of its investment back. If not, the school district might be able to strike a deal in which the results of the first year are assumed to carry into future years. In this case, the community college would sell bonds to make the full payment after one year, and use the savings in years one through five to pay off the bonds. Also, if the costs of implementing the program are one-time

in nature, say curriculum development and teacher training, the community college will continue to reap (and retain) the savings in years six and later, assuming that the program is successful and maintained by the high school.

EXAMPLE 2: CAREER ACADEMIES

Career academies are schools-within-schools or small learning communities that provide a postsecondary-preparatory curriculum with a career-related theme. They are a high school reform initiative that aims to keep students engaged in school and prepare them for successful transitions to postsecondary education and employment. There are estimated to be more than 2,500 career academies operating around the country (Kemple 2008).

Proven program. A review of the evidence of career academies describes them as "a proven" strategy (Stern, Dayton, and Raby 2010). Looking at results across numerous studies, the review suggests that students of career academies achieve higher graduation rates, better attendance and grades, more credits in high school, and higher participation and performance in postsecondary education than their peers in other types of high schools. The strongest and most pervasive differences were found among students at the highest risk of school failure. Compared to this group, there was also evidence of lower arrest rates.

Financial benefits. Any of these metrics could be used in a pay-for-performance scheme. Few, with the exception of the lower arrest rates, *directly* produce financial savings, although they lead to other outcomes, such as higher wages, that can be monetized. To fund career academies as HUCAP, alternative, measurable outcomes would need to be specified.

For example, one study found large, sustained, and statistically significant differences in labor market outcomes (Kemple 2008). Eight years after high school, students assigned to career academies had average monthly earnings of $2,112, compared with $1,896 for the control group. These increased wages translate to higher income and sales tax for state governments. The question is whether they generate enough to defray any incremental costs of implementing career academies.

An annual increase in wages of $2,600 generates only about $130 per year in higher sales and income taxes in Minnesota. But, looked at over a 10-year period, $1,300 per person might be considered to be enough to defray any extra costs of operating career academies. Alternatively, the program could be restricted to at-risk students if additional savings in law enforcement and/or public assistance could be added to the equation.

Means and willingness to capture savings. All of these aspects of the career academies program assume that the state agencies are willing parties to the deal—including willing to

provide data. Like the Math-in-CTE example, the situation is complicated by the fact that the costs occur at one level of government (school districts, while the savings occur at another (state agencies). Such a deal is unlikely to come about without significant commitment and leadership from a party, such as a governor's office, that can command the engagement of potential partners.

Data collection. HUCAP, or any SIB, is structured around just a small slice of the outcomes. Departments of education reap the educational outcomes, while the financial outcomes accrue to their partner state agencies: human services, revenue, and corrections. The more parties added to the contractual structure, the more tracking and data collection are needed, making the evaluation more complex and costly. But, ostensibly, all of the students could be tracked in state data systems using their social security numbers and student identification numbers.

Stream of benefits. A major challenge is time lags. If income gains occur eight years after high school graduation, at what point should monitoring for results start and for how long? At what point might it be assumed that the data that is captured today will carry forward into the future — i.e., that it is reasonable to project future results from today's data? Answers to these questions, based on the capacity for evaluation and the willingness to take on risk, will determine the structure of the contracts and indeed the appetite for structuring the deal in the first place.

CONCLUSION

Human Capital Performance Bonds (HUCAP) and the broader field of social impact investing are raising an important question: "How can we identify and fund those human services that contribute to the health of our people and communities over time?" Most government budgets increasingly struggle with the high costs of fixing "problems." While there is recognition that prevention is efficient, effective, and more humane, the cost of treatment overwhelms public budgets, leaving no money to prevent those problems in the first place. As a result, social problems persist.

HUCAP provides an opportunity to bring more preventive investment into human services. If these services truly reduce future costs, the savings themselves should be able to be used as the funding source. By issuing bonds to be repaid with future savings, a financing source is created for today's services. The bond amortization and interest payments, in effect, are paid by the cash benefits that are created.

The benefits of HUCAP do not end there. Structuring a workable transaction requires shifting the focus from activities to outcomes. It is no longer sufficient to merely provide services. The intended results of those services must be produced. This helps government refocus on ensuring that it's investing in services with the highest return to society, even if they may also be the highest-cost services.

Yet, not all human services are good candidates for HUCAP, or social impact investing more broadly. Many important programs produce a broad stream of benefits to individuals and the society as a whole, but financing through HUCAP relies on only that portion of benefits that can be monetized and captured as savings. To do so, there must be willing partners to sell bonds, track participants, capture the data needed to verify agreed-upon outcomes, and set aside the corresponding savings in their budgets to repay the bonds.

Figuring out and getting parties to agree to a deal are complicated and time-consuming. However, this is not unexpected for an innovative, new financing vehicle unfamiliar to providers and government alike. As additional pilots are created, many of these obstacles will disappear. So the question may be asked: Is it worth trying something new that has not yet been completely proven? But think for a moment of the alternative. In the absence of social impact investing, we chain ourselves to the costly treadmill of treating, rather than preventing, social ills. In the absence of social impact investing, we lack the resources to expand programs that we know can bring about social change. And, after all, isn't education in the business of social change?

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