Thesis Proposal:
A Case Study of the New York State Social Impact Bond

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November 30th 2014
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I. Introduction

Just over four years ago, in September 2010, the first social impact bond (SIB) was launched in the United Kingdom to address recidivism in Her Majesty’s Prison (HMP) Peterborough. As of this month, over twenty social impact bonds have been launched, in five countries, totaling more than $100 million in investment. This past June, the worlds' first development impact bond (DIB) was approved to address education for women in India. States, like Connecticut, have passed legislation, approving budgets for pay-for-success (PFS) financing programs, and as of this year, Congress is considering the bipartisan Social Impact Bond Act, which would allow the US government to appropriate over $300 million to SIBs.

Less than five years old, the social impact bond is being explored as a new way to source funding for social programs while also satisfying the growing demand from investors for impact investments, those which blend financial and social returns. A recent study by Baron asserted that for seven out of ten millennials, the top criteria for choosing an investment is the social return generated. This increased focus on “blended returns” as well as the flow of wealth into the millennial generation, has led to the involvement of major banks, like Goldman Sachs and Bank of America Merrill Lynch (BAML), as investors in two of the first US SIBs. These two social impact bonds, launched in New York, both aim to reduce re-incarceration rates in different state prison populations.

The purpose of this proposal is to further investigate and outline the landscape for social impact bonds. It will explore the definition of these instruments, highlighting the value they offer to each participant as well as their brief history and previous academic work on the subject. Ultimately, though, this paper aims to propose a thesis, a piece of work, which will hopefully contribute to and inform this growing field. Specifically, this report highlights a question that has emerged in numerous articles, “Are social impact bonds financially viable?”

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1 "PRESS RELEASE: Payment by Results Prison Pilot Continues to Show Falls in Reoffending." GOV.UK. UK Ministry of Justice, 24 Apr. 2014.
II. Research Question

As mentioned, the focus of this proposal is on the viability of social impact bonds (SIBs). There has been some research, which will be discussed in depth later in this article, which has looked at that question. However, those papers have analyzed viability at the issue level or in the context of a hypothetical situation. McKinsey & Company wrote a paper in 2012, which identified homelessness and recidivism as two social issues, which may be suitable for the application of a social impact bond. A year later, Maryland state government conducted a study that looked at the cost-benefit analysis to the government for a proposed PFS program to address recidivism rates, introducing the financial dimension of viability. This proposal, however, suggests looking at a single social impact bond, currently issued, and analyzing the financial viability for all relevant participants in the SIB. And in particular, this report identifies the NY State SIB for Increasing Employment and Improving Public Safety (henceforth referred to as the NYS SIB) as the ideal candidate for analyzing this question.

III. Background & Key Terms

General Background

Social impact bonds (SIBs) also called “Pay for Success” (PFS) programs are a type of Public-Private Partnership (PPP), which takes funds from private investors and gives them to an intermediary. That intermediary, usually a non-profit organization, provides funding to a non-profit service provider in order to implement some social program. For example, UK Social Finance acted as the intermediary in the Peterborough SIB, mentioned above and explored in depth below. They acted as the holding company for the funds, and were responsible for disseminating those funds to non-profits with proven programs for reducing recidivism. Data is collected and validated by a third party, and if certain social goals are achieved, the government pays the private investors their original investment as well as a scalable return. Usually, those returns are capped, and they are paid out with the savings accumulated by the payor from the program. If the social goal is not met, the government doesn’t

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pay anything. By nature, SIBs focus exclusively on those social issues for which there are established, successful models for intervention and for which there are measureable impacts with quantifiable savings.\(^8\)

SIBs were first developed as a solution to the increased demand for social programs, and the reduced government budget for such programs. However, despite their complexity, social impact bonds provide some key benefits or value to each party. By engaging the private sector, social impact bonds provide investors with new opportunities that may align with their values, diversify their portfolios and provide risk-adjusted returns. For the government, the SIB model shifts the risk of social programs off the government as well as taxpayers, pays based on outcomes rather than just outputs, and improves the lives of the relevant constituents. The non-profit service providers have access to more capital as well as greater flexibility in how they use that capital to scale their

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programs. The important piece to note here is that SIBs are built for issues with a proven method for addressing them. Funds from an SIB are used to scale that method after it has been successful.

Historical Context

As mentioned, the first social impact bond was launched in the UK in 2010. The Peterborough pilot SIB aimed at reducing reoffending by prisoners in Her Majesty’s Prison (HMP) after serving a sentence of 12 months or less. In this case, and in the case of most pilot SIB’s the investors were mostly charitable trusts because they are required by law to invest a certain portion of their endowment, and more willing to take on the risk of a new financial instrument. In total, investors allocated approximately £5 million. At start of the program, 60% of the 40,200 adult short-term offenders would reoffend. For the purposes of the SIB, three samples of 1,000 prisoners were selected and their recidivism rates were measured against three control groups who did not participate in the intervention program. Over the course of the SIB, recidivism fell 11%, while nationally rates rose over 10%. Government officials described the program as a success; however, the third phase, the third sample, was not run due to larger changes in government prison programs, which would provide the same services outlined in the SIB. Since the pilot was discontinued, ten more social impact bonds have been launched in the UK alone.

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10 "PRESS RELEASE: Payment by Results Prison Pilot Continues to Show Falls in Reoffending."
The New York State (NYS) Social Impact Bond: In Depth

To give some context on the issue addressed by the social impact bond, recidivism of repeat offenders, in the 2013-2014 NY state budget, the Department of Corrections and Community Supervision (DOCCS) was allocated $3.1 billion. The average annual cost of incarceration in NYS is $60,000 per prisoner. Of those formerly incarcerated individuals, over 40% will reoffend within three years of their release, and the average high-risk prisoner spends another 460 days in jail post-release. Behind Medicaid, prison spending is the fastest growing expenditure nationally.\textsuperscript{12} At the same time, The Center for Employment Opportunities (CEO) has an established, evidence-based program for providing employment services, including job placement and training, to recently released prisoners. Given this backdrop of rising, identifiable cost and established intervention forms, the re-incarceration of high-risk offenders appeared to be a strong candidate for social impact bond funding, and in December 2013 New York State announced the state’s, and the nation’s, first social impact bond—a partnership between the New York state government, CEO, Bank of America Merrill Lynch (BAML), and US Social Finance.

The NYS SIB is structured similarly to the Peterborough SIB, except for a few key differences. First, the investor in this case is not another foundation but rather Bank of America Merrill Lynch, who pooled together $13.5 million from 40 private and institutional clients, and which will be allocated to the bond.\textsuperscript{13} At the time, this was the largest investment in an SIB. Second, for this social impact bond (and similarly for the second New York SIB), foundations are insuring portions of the initial investment. In this case, the Rockefeller Foundation is insuring $1.3 million or approximately 10% of the initial investment. For comparison, in the second New York social impact bond, Bloomberg Philanthropies is insuring $7.2 million of the $9.6 million invested by Goldman Sachs.\textsuperscript{14} This limits the losses incurred by investors, and highlights another way in which foundations are catalyzing the market.

\textsuperscript{13} Milburn, Robert. "‘Pay for Success Bonds’ Drum Up Interest." Barron’s 13 Jan. 2014.
\textsuperscript{14} "Fact Sheet: The NYC ABLE Project for Incarcerated Youth" 2 Aug. 2012. Print.
In total the NYS social impact bond will run five and a half years; however, the SIB will breakdown into two phases. During each phase CEO will provide services to approx. 1,000 inmates who voluntarily agree to participate in the program. Throughout each phase data will be collected by the DOCCS and validated by Chesapeake Research Associates, and this data will determine the payouts to investors at each phase. The relevant metrics, which the service provider will be measured against and which are explained in the table below, are: Employment, Recidivism, and Transitional Jobs.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Definition</th>
<th>Threshold</th>
<th>Payout per Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Percentage point difference between treatment and control group members with positive income</td>
<td>5% Increase (over control group)</td>
<td>Phase I: $6,000/person Phase II: $6,360/person</td>
</tr>
<tr>
<td>Recidivism</td>
<td>Difference between treatment and control group’s average number of days incarcerated</td>
<td>36.8 days reduction (over the control group)</td>
<td>Phase I: $85/day Phase II: $90.1/day</td>
</tr>
<tr>
<td>Transitional Jobs</td>
<td>Number of treatment group members who start a CEO transitional job in the observed period</td>
<td>Same as Recidivism</td>
<td>Varies based on the average number of hours worked*</td>
</tr>
</tbody>
</table>

*If average hours worked is greater than 111 than the payout is $3,120/$3,307 per person, if below its done as an hourly rate applied to the hours worked.
Again, the data collected is measured against the thresholds above, and the payouts are calculated on a metric-by-metric basis. This means that if the service provider misses the threshold for Employment but meets Recidivism and Transitional Jobs, then they will still receive a payout based on those metrics they have met. In the case of the NYS SIB, the payout by the government is capped at a Phase I + Phase II total of $21,543,843 to the intermediary, in this case Social Finance US. This payout is net of some state administrative costs as well as costs to the data validator. Also outlined in the contract are accelerated and early outcome payment processes, which will be explored in-depth during the Research Methods and Data Requirements section.

IV. Importance of Proposed Research

As touched upon earlier, in Section II, there have been some viability studies conducted; however, none of this specific nature, which focuses on the financial viability from each participants perspective. Even case studies, which have centered on the Peterborough SIB, focused primarily on definitions and on a structural analysis. The goal of this research is to build off of those previous case studies and to add the financial lens, by applying traditional frameworks to the cash flows in the SIB model. The idea is that this information may provide a framework which can be loosely applied to future social impact bonds, and which may help to inform investors. A similar line of thought is that such a contribution might spark further discussion around this fledgling instrument and support the growth of the field. The format for the research, a case study, will be discussed later on; however, it is worth mentioning that an added benefit of this format is the way it lends itself to educational settings, serving as a tool to inform investors or possibly even students. This smaller, almost consequential contribution is important given, again, the growing trend in millennials’ interests around social impact and blended financial/social returns.

V. Significant Prior Research

Despite the early stage of the social impact bond market, there has been considerable investment into research, especially from foundations and other government or policy-related institutions. The previous literature review highlighted some larger “buckets” or themes that seem to apply to most

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current research: viability studies, case studies, performance relative to other types of financing, and market analysis. For the purposes of this report, this section will zoom in and focus on some of the key articles that drove the development of this proposal.

Two articles have been mentioned or cited previously in this article, which shaped the development of this thesis. The first was a case study, conducted by the University of Oxford, on the Peterborough pilot social impact bond. This case study served as a practical application of the social finance theory behind the SIB, and it’s structure serves as a foundation for both this proposal and the potential thesis. At a very high level, this paper explored the definition of a social impact bond, the historical context, the specific Peterborough SIB, and the model’s global applications. The second article was the viability study conducted by Maryland state government, which looked at whether or not the cost savings from a potential SIB would be able to offset the fixed costs and the risks associated with the model. This article introduced the idea of analyzing the financial viability of an SIB by comparing the fixed costs of the SIB with the potential cost savings under two different recidivism scenarios. This article is notably important because, while it only focuses on the perspective of the government, it introduces the idea of a scenario analysis, which will be explored later in the possible research methods for this thesis.

The third article, which shaped how this research question and thesis proposal would be framed, is a report on the investor landscape in the social impact bond market. Published in 2012, the paper follows a similar structure to the Peterborough case study; however, rather than applying the SIB model to a particular case, it looks at the model and identifies three potential investors: Foundations/Philanthropy, Community Development Financial Institutions, and Commercial Investors. For example, the report highlights the role that foundations, and specifically Program-Related Investing, can play as early investors in SIBs. It also proposes philanthropy’s role as an insurer for commercial investors. Most importantly, however, is that the article looks at the social impact bond from the perspective of a private equity investment. It proposes different tranches of investment, similar to the tranches of debt typically found in a PE investment. While these ideas

16 Nicholls, Alex, “The Peterborough Pilot Social Impact Bond.”
haven’t been applied yet in the market, they introduced the broader idea of applying the PE model, the DCF model for valuation, to social impact bonds. This idea serves as the cornerstone for the analysis presented in the next section. On a more personal and less academic note, this report compares the investment opportunity of SIBs to that of Low-Income Housing Tax Credits (LIHTC), citing that if banks develop the capabilities to underwrite these investments and if early SIBS establish a proven track record of success, they could become a more common investment option. This notion, this degree of optimism surrounding SIBs, is why this research is important.

VI. Possible Research Methods

Looking at the precedent literature, a case study seemed the best format for exploring the proposed research question. There have been such a small sample of initiated social impact bonds, that a large sample study would not be possible; however, as is evident in both the New York social impact bonds and the Peterborough pilot SIB, the larger SIB framework is fairly fixed. This means that a case analysis, despite focusing on a unique occurrence, can have greater implications.

Like the Peterborough SIB case study, this proposed case study will begin with information on social impact bonds, including the general structure, roles within an SIB, and the history of the SIB market, similar to the presentation of this material in this proposal. The case would also introduce specific background on the relevant parties of the NYS SIB and the recidivism issue in New York. As indicated in previous sections, this proposal differentiates itself from previous case studies because of the financial lens through which it will examine the social impact bond. Specifically, the report will look at the financial returns from the point of view of the investors as well as the government. The reason for the focus on these parties, as opposed to all of them, is that the payments to those other parties are largely fixed. The interest of this report is on calculating returns as adjusted for scenarios, which capture different success rates for the project.

Before proceeding, it its helpful to outline the general structure of a discounted cash flow, and to build a shell, which will be used to visualize the cash inflows and outflows. On the following page is a general model for measuring uneven cash flows, where each inflow is discounted back and then
compared to the initial investment to calculate a return on investment, as well as the NYS SIB timeline.\textsuperscript{19}

Figure 4 (left) shows the general cash flow model, which will be applied to the SIB model for both the government and the investors.

Figure 5 (below) marks the timeline for the project, used to adapt the general Cf model in Figure 4 to the NYS SIB.

\begin{center}
\includegraphics[width=\textwidth]{figure4.png}
\end{center}

\begin{center}
\includegraphics[width=\textwidth]{figure5.png}
\end{center}

Government Perspective

In the case of the government, cash flows are derived from the costs savings reaped from the intervention program. In this case, those cost savings are tied to the cost of housing and supporting those inmates who reoffend. In the contract, these cash flows are calculated using the payout formula identified in Section II of this report and sets the cost benefit equal to that payout, without the payment cap. This method assumes that the social benefit is directly related to the investor payout, and would require further research into the development of those payout rates. The cost, or

\textsuperscript{19} Investing In What Works: NYS "Pay for Success" Project Fact Sheet." 1 Mar. 2014
the investment, associated with these cash flows would payouts made to the investors, assuming they meet the specified thresholds. Below is an example cash flow diagram, assuming those thresholds were met.

![Diagram showing potential cash flows](image)

**Figure 6 visualizes the potential cash flows for the NYS government assuming a successful intervention.**

Again, this is just one scenario, and the thesis proposed in this paper would take into account the spread of possible outcomes, including early outcome payments assuming that the contract ended prior to the 5.5 year deadline. Fortunately, these eventualities and their effect on payments were explored in the intermediary contract. One idea also explored in that contract, and not reflected in the model above, is the role of federal government funding. In the case of the NYS SIB, the state government applied for a federal grant to cover the payments. If the grant isn’t received, then the New York state government will cover the outcome payments; however, this will affect the ROI implied for the NY government. This idea can best be understood when considering the following hypothetical: if the federal grant thresholds for performance are stricter than those outlined in the contract. In this case, payments to investors could be a combination of state and federal funds, again affecting the adjusted return for the state government. Theoretically, the amount invested is still the same, and it may be best to take a conservative stance and assume no federal funds are granted (lowest return for the NY govt.). However, considering current legislation to create a federal budget for SIB programs, the idea was worth noting and potentially exploring in this model as it may affect the government attitude towards these instruments.

**Investor Perspective**

Similar to the government, cash flows to investors are calculated as a function of the quantifiable social benefits of this CEO program. However, for the investors, the cash flows come only after the completion of the each phase and assume that minimum thresholds are met. And while government
savings can’t be capped, the amount paid to investors is limited to a Phase I/Phase II total of $21,543,843, and this doesn’t include the Intermediary Success fee. This also caps the return on their initial investment of $13.5 million.

![Diagram](image)

**Figure 7 visualizes the potential cash flows for investors assuming a successful intervention.**

Again, the above figure only reflects one possible scenario. The next section will explore potential ways to weight those scenarios, but first, it is important to briefly revisit how those cash flows are calculated. Thresholds have been identified, and if any one threshold is met, then a payout is calculated. The total applicable payouts cannot exceed the predetermined max payouts for either phase, and the minimum payout is $0. However, again, if investors do realize a loss on their investment, up to $1.3 million will be recovered from the Rockefeller foundation. The other piece, that will eventually affect the cash flows to investors, is taxation. In the U.K. investors are granted a tax relief equal to 30% of their investment in the SIB. In the United States, tax-exempt status has been proposed for the Special Purpose Vehicles (SPV) that constitutes a social impact bond. Until these details are decided, they are best mentioned but not included in the actual model.

**Scenario Analysis**

Ultimately the series of cash flows in the NYS social impact bond will depend on the performance of the service provider, CEO. The success of the project/probability of realizing the minimum

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thresholds then can be calculated using the historical success rate of the intervention program plus an adjustment for scaling risk. In this case, a range of risk premiums would be applied to give us a range of probabilities. NPV analysis would be conducted across the scenarios, for both parties.

VII. Data Availability & Limitations

Most of the data from this report has been taken directly from the intermediary contract, and the sheer availability of information was a contributing factor to choosing this SIB as the subject of the case study. Other required information, such as the project success rates and the supporting research for the outcome payouts can be gathered from the list of contacts included in the contract. The only limit to that information would be confidentiality agreements built into the contract. Even without that information, however, there should be enough data to run the models if some simplifying assumptions are made in regards to those two unknowns. Other limitations include those inherent to the case study format—primarily that results may not be applicable to other SIB models because of unique intricacies. However, design of this potential study has been organized to minimize that risk.
VIII. Bibliography


