

# Social Impact Investment: the challenge and opportunity of Social Impact Bonds

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Published November 2010

Revised March 2011

## About the Young Foundation

The Young Foundation combines creativity and entrepreneurship to tackle major social needs. We work on many different levels to achieve positive social change – including advocacy, research, and policy influence as well as creating new organisations and running practical projects. The Young Foundation benefits from a long history of social research, innovation and practical action by the late Michael Young, once described as the “world’s most successful social entrepreneur”, who created more than 60 ventures which address social needs. Over the last five years we have been involved in the design and launch of over forty successful new ventures, including charities, social enterprises, businesses and public organisations, as well as hosting SIX, the world’s leading network of organisations involved in social innovation.

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# Contents

<b>1. Introduction: why social impact investment? .....</b>	<b>4</b>
<b>2. What is a Social Impact Bond? .....</b>	<b>7</b>
Types of Social Impact Bonds.....	8
Alternative delivery structures.....	10
SIBs and the wider agenda of impact investing.....	13
SIBs and the wider agenda of commissioning for outcomes.....	14
<b>3. Advantages and challenges of SIBs .....</b>	<b>15</b>
Advantages.....	15
Challenges.....	17
<b>4. Applying SIBs to social need.....</b>	<b>20</b>
Common questions .....	20
7 essential criteria for a SIB .....	21
Case studies.....	23
<b>5. Next steps and future scenarios.....</b>	<b>28</b>
<b>Annex 1 – Modelling SIBs for Criminal Justice.....</b>	<b>29</b>
<b>Annex 2 – Modelling SIBs for Healthcare.....</b>	<b>32</b>
<b>Annex 3 – Modelling SIBs for Housing and Employment .....</b>	<b>34</b>
<b>Annex 4 – Risk management.....</b>	<b>35</b>
<b>Annex 5 – Sources of funding .....</b>	<b>36</b>
<b>Bibliography .....</b>	<b>38</b>

We welcome comment and practical suggestions on the development of the field. Please email any comments to the Programme Leader co-ordinating our Social Impact Investment and Social Impact Bond agenda, [Neil.Reeder@youngfoundation.org](mailto:Neil.Reeder@youngfoundation.org).

# 1. Introduction: why social impact investment?

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In the last few years, interest has grown in developing new investment approaches to social problems. There is extensive evidence on potential paybacks to investment in early years programmes, or preventive measures in crime or health. Turning these into propositions for investments has proved hard, but five developments accelerated thinking during the early 2000s:

- Greater interest on the part of investors and philanthropists in combining commercial and social returns (and the related interest in finding new methods for assessing and evaluating social and environmental impact alongside commercial returns).<sup>1</sup>
- Steady advances within government in methods for assessing the impact of public investments on human capital, and bringing more systematic analysis of the links between spending and social outcomes such as crime reduction or health improvements.<sup>2</sup>
- Widespread experience of private finance initiatives and public private partnerships, with growing knowledge on when these do and do not add value.
- The development of markets for carbon reduction, prompted by Kyoto and the EU. Despite many complexities in terms of pricing and measurement these have led to the creation of new asset classes, and substantial trading. They have encouraged greater confidence in the potential to invest in social gains.
- Experimentation in health around such initiatives as advanced market commitments, in which a payer guarantees a market will be available for breakthroughs such as vaccinations for malaria.

This paper builds on previous papers on Social Impact Bonds published by the Young Foundation in early 2008, and early 2010, and sets out our current thinking on their concept, their potential, as well as some of the challenges they face. We are optimistic about the potential of SIBs and we welcome the enthusiasm they have elicited. However, so far there has been relatively little serious analysis of the strengths and challenges of the SIB idea, and there is a risk that unrealistic aspirations will be projected onto the idea. Our hope is that SIBs can 'under-promise and over-deliver' rather than the opposite.

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<sup>1</sup> [http://www.ssireview.org/articles/entry/measuring\\_social\\_value/](http://www.ssireview.org/articles/entry/measuring_social_value/) provides an overview of the many methods for assessing value, as well as suggesting how these can be made more useful.

<sup>2</sup> For example see the recently launched journal Evidence & Policy: A Journal of Research, Debate and Practice

The current spending squeeze in the UK means that there is more interest than ever both in tools to achieve greater value, and in tools that can tap new sources of finance for social goals. Indeed, the Comprehensive Spending Review 2010 announced a reduction on public spending of £81bn by 2015, with particular effects for such realms as criminal justice and housing - the Ministry of Justice, for example, has the task of reducing spend by £2 billion, 23% of its budget by the end of 2015.

A family of different approaches to investment for social impact are likely to be tested out over the next few years. Some will be internal to the public sector – allowing either for investment within a public agency, with clear targeting of expected social outcomes and savings, or for contracts or arrangements linking different parts of the public sector, so that actions by one can deliver savings to another. Some will involve variants of payment by results and outcome-based commissioning. All will aim to better align incentives, so that public spending has a better chance of achieving desired outcomes.

Social Impact Bonds are one of the possible tools for achieving more for less. Work on their design and implementation has been in train since early 2008, when the City Leader's Group (led by banker and Young Foundation Chairman Peter Wheeler) began work to identify new types of investment vehicles for social outcomes. Some of this work was taken forward by a new organisation called Social Finance, which agreed the first SIB in the final days of the Labour government in early 2010. The Young Foundation coined the term 'Social Impact Bonds', and fed into Social Finance's work while also developing alternative models of SIBs, all of which shared the goal of turning social outcomes into investments to encourage ways of creating more good for less money.

Briefly speaking, under a SIB, a payer (usually Government, at a national, regional or local level) agrees to pay for measurable improved outcomes of social projects, and this prospective income is used to attract the necessary funds from commercial, public or social investors to offset the costs of the activity that will achieve those better results. This approach is possible where better outcomes lead to tangible public financial savings.

SIBs offer the potential to bring in fresh sources of financial capital, to focus attention on preventive action, to transfer risk on new interventions and to provide new funding for civil society which faces very sharp cuts in its funding from government. That said, SIBs are unlikely to be able to meet all of the expectations being placed on them, and they face important challenges, of which three stand out:

- The relative weakness of the evidence base (and resulting difficulties facing any investors or banks wanting to judge the risk of a particular set of interventions, and the bodies being funded to carry them out);
- Overlaps with existing public programmes. In a world with no public spending, SIBs would be relatively straightforward. However, they depend on demonstrating a causal link between additional spending and outcomes achieved. This is hard for target groups already in receipt of public support, such as young people under 18. To solve the problem, either contracts and measurement systems have to become complex – and require other public agencies not to cut or change existing programmes – or some form of partnership agreement is needed which ties in with other public providers;

- Issues of scale and transaction cost. Most PFIs under about £25m turned out to be uneconomic due to the high transaction costs. There may be a similar lower limit for SIBs, which is challenging given that any pilots are likely to be on a significantly smaller scale. In addition SIBs face the challenge that also faces all new financing tools around public services, namely that governments always have a significantly lower cost of capital than other bodies.

Hopefully over the next few years a range of different variants will be tested, and a market will develop with a range of competing providers. Past experience suggests that it is hard to predict which particular models, or providers, will come out best.

Pluralism, competition, and rigorous evaluation will be critical to ensuring that the right lessons are learned fast. As a charity, the Young Foundation sees its role as one of enabling. Our aim is not to raise bonds, or to become a financial intermediary, but rather to support the development and testing of a range of models, and to enable the field to learn as quickly as possible about what does and does not work.

We are working in the UK with several funders, councils and other agencies that deliver priority social policy outcomes. This practical experience of testing the SIB concept in particular localities, using local data and taking account of particular local circumstances, has informed the analysis and research that underpins this paper.

In the remainder of this paper:

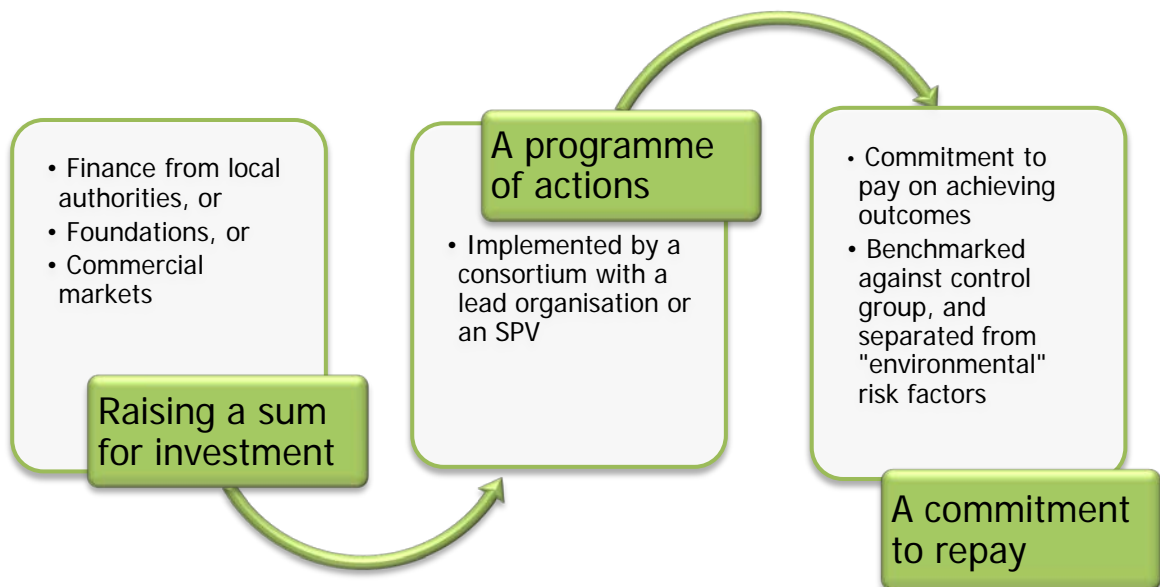
- Section 2 describes the concept of a SIB and their varying models;
- Section 3 discusses associated advantages and potential barriers to SIBs and how they can be overcome;
- Section 4 highlights criteria for successful SIBs and key areas for development; and
- Section 5 sets out next steps, and how the wider field of Social Impact Investment could evolve, going wider than SIBs.

## 2. What is a Social Impact Bond?

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SIBs are funding mechanisms which invest in social outcomes. They have three elements:

- Monetary investment (for example, £x million from local authorities, commercial investors, philanthropists or foundations);
- A programme of actions to improve the prospects of a group (for example a support and mentoring service to those leaving prison with the aim to reduce re-offending); and
- Commitments by national or local Government, or foundations, to make payments linked to improved social outcomes achieved by the group (for example, re-payment of the £x million original investment and an extra percentage agreed return, sustained by reduced costs for the Ministry of Justice through reducing re-offending and numbers in prison).



SIBs are generally likely to work best in situations where there are misaligned incentives to develop, fund and deliver preventative services that can save costs down the line and achieve a better result from the system as a whole.

The approaches to SIBs depend on the primary actors involved. In what follows we have set out some models to help understand the range of possibilities. In practice, hybrid models blending different sources of funding are most likely - but purely commercial models are possible in future, when well proven methods to fund have emerged and there is a widespread understanding amongst purchasers about how to work with payment for results regimes. Below we briefly describe key options: 'philanthropic social impact bond's; 'public sector social impact bonds'; 'commercial social impact bond's; and hybrid approaches harnessing finance from a range of sources. We then discuss options for underlying delivery structures of the bonds.

## Types of Social Impact Bonds

### Philanthropic Social Impact Bond

The first model raises funds from philanthropic sources; invests them through a special purpose vehicle<sup>3</sup>; sub-contracts to NGOs; and involves a contract with a central or local government to repay based on achieved outcomes. The Social Finance pilot in Peterborough was the first SIB of this kind, and targeted reducing the likelihood of one group of prisoners (with sentences of less than one year) reoffending. The advantage of adult offenders with sentences of under one year was that they were currently not receiving statutory provision related to their status as ex offenders; there was little overlap with other public sector bodies (such as local authorities); and there was a relatively simple metric for success.

The advantage of philanthropic funding for SIBs is that it leaves open considerable scope for experiment and innovation, rather than relying on proven models of delivery. It can also accept high levels of risk – much higher than commercial funding. Part of the appeal for philanthropists is that they are able to more directly finance outcomes, and to engage with large public systems in a strategic way, rather than just through funding individual charities on the edges of public systems. For government this is a particularly appealing route, since it allows risks to be transferred out to philanthropic funders and reduces the public sector's own capital requirements.

### Public sector Social Impact Bond

In the second variant of SIB, a Local Authority borrows on existing markets for a package of investment in a social impact programme, receiving a series of payments in the future from National Government if particular milestones are achieved (associated with lower costs for national government).

For example, an authority could borrow (or use existing revenues) to finance £5m for an intensive programme of work with those at risk of becoming NEET, and be paid by Government according to the numbers who entered employment, education or training as compared to becoming unemployed. The repayments represent a proportion of the lifetime savings to national government (primarily through tax and benefits). This model could be taken forward by an authority working on its own; or jointly with a key local partner; or in partnership with one or more other authorities.

Models of this kind are relatively easy to design and implement, involving relatively few players and transaction costs, though they do require clear protocols on design, establishment of baselines, success measures and so on. The capital costs and overheads will generally be low. This model is, however, more likely to suit high performing large scale authorities with experience of sophisticated funding mechanisms, than smaller entities.

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<sup>3</sup> This Special Purpose Vehicle would be the lead organisation responsible for ensuring the delivery of the intervention programme. For further information see page 12.



## Commercial Social Impact Bonds

The third model simply replaces philanthropic and public sector finance with commercial investment. In this way a new asset class is created which can be invested in by banks, pension funds and others. SIBs are then invested into a range of SPVs with contracts with public bodies involving payment by results, or payment linked to outcomes.

The premise is that methods of risk assessment become sufficiently mature to allow investment organisations to assess both the risks and returns of particular interventions and of the organisations carrying them out. Here the analogy is with the evolution of markets for carbon and for pollutants. Commercial SIBs are likely to be suitable where there are proven models of intervention and reliable delivery partners with strong track records. Most observers assume that it will take at least 5-10 years for an asset class to develop, even with optimistic assumptions about successes in earlier philanthropic and other pilots.

## Hybrid approaches

In practice, the sources of finance could well be from more than one sector. The challenge then will be to build trust between these different sectors which tend to have very different perspectives, aims and agendas.

Two key ways to build up such trust are:

- The development of a 'shared language'; and
- The construction of a Social Impact Bond that promotes the twin agendas of better outcomes and equitable financial returns.

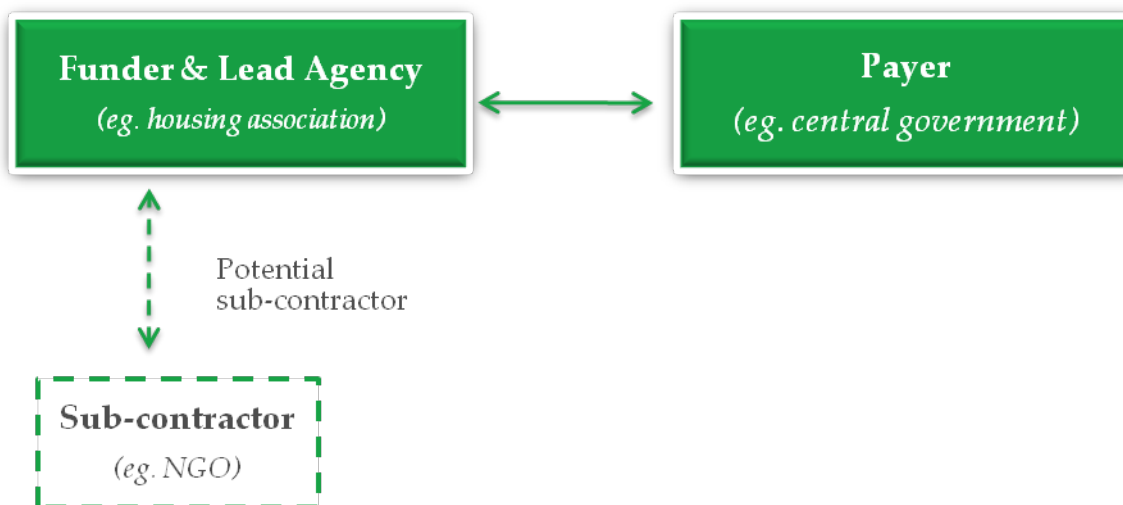
## Delivery structures

Cutting across all types of Social Impact Bond there are then three different delivery models, which are discussed in turn –

- Streamlined approach;
- Lead delivery agency approach; and
- Special Purpose Vehicle.

## Alternative delivery structures

### Streamlined

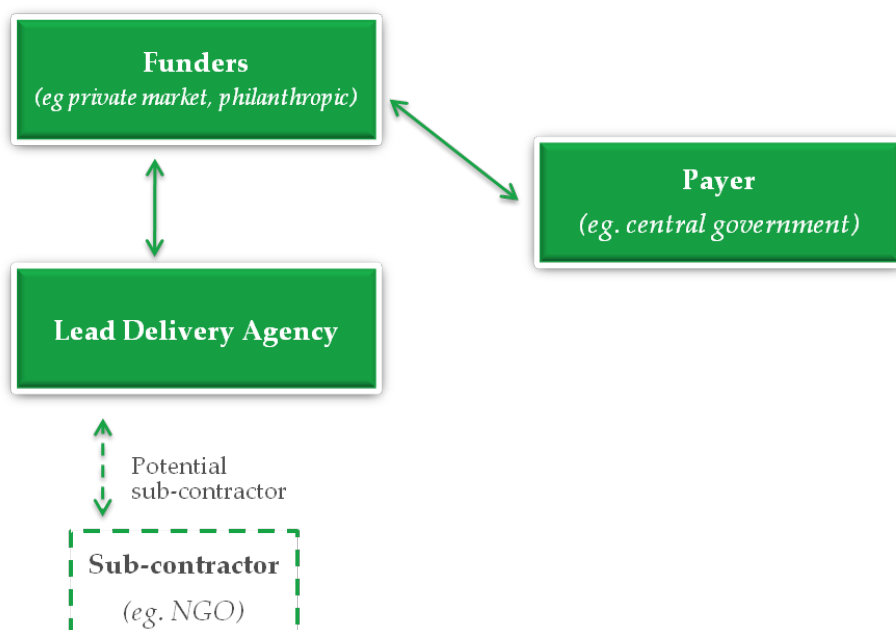


Description: An organisation uses its existing resources to fund a package of interventions designed to achieve a social impact. It would have an agreement with the government (local or national) to receive a series of payments in the future if particular milestones are achieved (associated with lower costs for government). If successful, the amount received from the payer would cover the costs of delivering the interventions plus an additional return.

Case study: A housing association uses its reserves to fund an initiative working to increase participation in the workforce or in training. The initiative reduces welfare costs for the central government as more people are in work and fewer are claiming unemployment benefits. Central government agrees to make a series of payments to the housing association based on the reduction in the number of people claiming unemployment benefits. These payments will cover the cost of delivering the program as well as provide a financial return to the housing association, if the targets are met.

Benefits	Constraints
<ul style="list-style-type: none"> <li>• Simple model with limited stakeholders</li> <li>• Easy to design and implement</li> <li>• Low transaction costs and overheads</li> <li>• Suits high performing organisations confident in their ability to deliver</li> </ul>	<ul style="list-style-type: none"> <li>• Lead agency must have its own reserves of funding to invest</li> <li>• The lead agency bears all the risk if the intervention is not successful</li> <li>• Lead Agency must have delivery capability</li> </ul>

## Lead Delivery Agency\*



Description: Funds are raised from philanthropic and private sources and transferred directly to a Lead Delivery Agency responsible for implementing a package of interventions. The Lead Delivery Agency may also be a part funder of the bond. The Lead Delivery Agency then implements a package of interventions – either directly or by sub-contracting to another agency. The payer would make payments directly to funders based on the impact of the interventions.

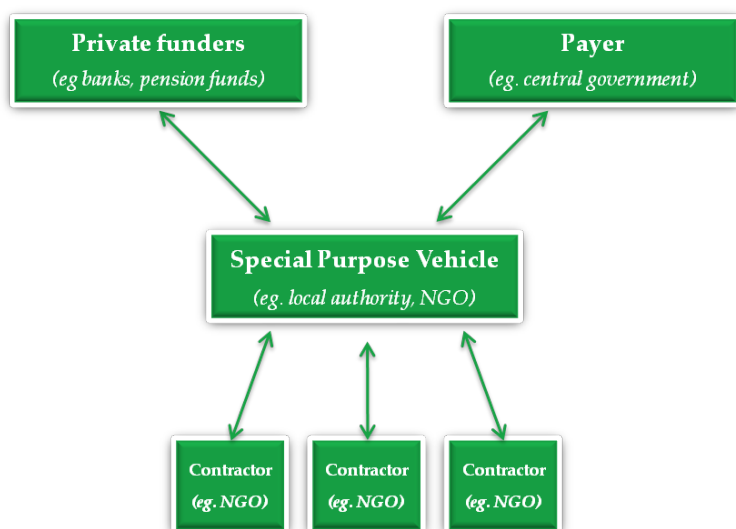
Case study: A local authority raises £2m of funding from a large philanthropic organisation which it then matches. This sustains a programme of work with young people at risk of becoming NEET. Central government agrees to make payments according to the numbers of young people who enter employment, education or training as compared to becoming unemployed. Payments are a proportion of national government's savings (primarily welfare benefits) and enable the original £2m loan to be repaid and deliver a return to the philanthropic organisation and local authority.

Benefits	Constraints
<ul style="list-style-type: none"> <li>• Risk is shared between multiple organisations</li> <li>• Potentially unlocks new funding streams for social interventions</li> <li>• Well aligned incentives if the Lead Delivery Agency is also a funder</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for conflicting views between Funders and Lead Delivery Agency (this may be prevented by agreeing clear protocols at the outset or by contracting with another agency to manage the programme).</li> </ul>

*\* A slight variant of this model is for the Payer to only have a direct relationship with the Lead Delivery Agency and make payments directly to the Lead Delivery Agency (ie. the Payer does not have a relationship with the Funders).*

*This SIB is relatively simple and low maintenance for Funders and for Government, however, depending on the contract, the Lead Delivery Agency would bear greater risk for the SIB's performance if it was required to repay Funders regardless of performance.*

## Special Purpose Vehicle



Description: A dedicated vehicle – a Special Purpose Vehicle (SPV) – is a legal entity (usually a limited company) created to fulfil specific objectives, and they are an integral part of public private partnerships common throughout Europe which rely on a project finance type structure.<sup>4</sup> In this case, the SPV would receive incoming investment from funders and act as the lead organisation responsible for ensuring the delivery of the intervention programme. It would pass the funding to contracted delivery agencies and manage the contracts with each agency to monitor their performance. It would also receive payments from the payer, based on the success of the interventions, and pass these back to funders. The SPV would not deliver any services itself.

Case study: The first SIB to use a SPV model was a pilot by Social Finance in Peterborough aiming to reduce the likelihood of prisoners reoffending. A SPV was established to manage the finances, contracting the St Giles Trust to provide intensive support to 3,000 short-term prisoners over a six year period. Investors will receive a share of the long term savings ranging from Government from 7.5% up to a maximum of 13% based on the SIBs impact (this repayment commitment has been substantially subsidised by the Big Lottery Fund).

Benefits	Constraints
<ul style="list-style-type: none"> <li>• Low engagement for Funders, Payers and Contractors (as SPV manages financing).</li> <li>• Clear role and incentives – with SPV managing performance</li> <li>• Options for many contractors – allowing for large SIBs or specialised delivery</li> </ul>	<ul style="list-style-type: none"> <li>• High transaction costs and overheads</li> </ul>

<sup>4</sup> As outlined, for example, in [www.eib.org/epec](http://www.eib.org/epec)

## SIBs and the wider agenda of impact investing

The idea of SIBs has evolved in parallel with the growth of interest in 'impact investing'. Over the last two decades a great deal of work has been done on developing new vehicles and new metrics to apply investment models to social needs:

Large foundations have been interested in finding ways to use their investment resources for social goals, with the spread of Mission Related Investment models.

Some commercial investors have been interested in demonstrating social impact as well as commercial impact, not least because of the likely growth of key social industries such as health, education and welfare.

Individual philanthropists, and the broader venture philanthropy field, have been seeking ways to invest more directly in outcomes.

A field of social venture intermediaries is taking shape, at different paces in different countries, providing finance at a range of different stages from start up to growth, with a range of different appetites for risk. A full overview of the UK SVI scene, including reference to many international examples, has been developed by the Young Foundation working in partnership with the field, and will be published in December.

Analysts have developed a range of tools for assessing blended value, and for creating shared metrics to guide investors, helped in particular by the Rockefeller-supported Global Impact Investing Network.<sup>5</sup>

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<sup>5</sup> For more information please see the Global Impact Investing Network, [www.thegiin.org/](http://www.thegiin.org/)

## SIBs and the wider agenda of commissioning for outcomes

The idea of SIBs has also evolved in parallel with the much longer experience of commissioning for outcomes. Many governments have wanted to be able to contract directly with private or third sector providers which could take the risk of achieving outcomes such as lower unemployment or reoffending.

There is now extensive global experience of how to do this, particularly in the field of welfare to work, but also in some areas of health. Any organisation taking on a contract for payment by results or outcomes faces a challenge of raising working capital. This is generally solved in one of three ways:

- Through large private firms raising money through normal capital markets (for example, firms like Serco or Capita in the UK);
- Through NGOs raising funds from existing lenders using property as security, or in some cases borrowing against contracts (though here they run into the lack of exemplars for this approach in the banking world);
- Through commissioning agencies paying part of contracts upfront so as to minimise the cash flow risk.

A future Big Society Bank could provide loans to third sector providers tied to contracts (and good tools for assessing the credit worthiness of the providers). If this was done in a reasonably simple way it might significantly reduce the need for Social Impact Bonds.

With the prospect of such an institutional resource, some see SIBs as merely a transitional device towards more extensive outcome-based commissioning or payment by results, since these avoid the need to pay for an additional intermediary with the associated transactions costs. However, others doubt whether new institutions will provide loan finance of this kind, and the risk of current developments in commissioning (such as the promotion of prime contractors which are then left with the task of organising supply chains and partnerships) is that these tend to leave the voluntary sector in a weak position, and with low margins.

## 3. Advantages and challenges of SIBs

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As a new financing tool, SIBs offer enormous potential for increasing the magnitude and quality of investment in improving social wellbeing. However SIBs are not without their challenges – some of which are inherent in the SIBs and some which will require trialling and testing to overcome. This section describes some key advantages and challenges associated with SIBs.

### Advantages

#### ***Saving public money***

SIBs are able to save money for the public purse even at a time of intense pressure on public resources. They are able to achieve this result by acting to correct poor incentives and attain new sources of funding, by promoting evidence based action, by allocating resources to where it can achieve greatest impact and achieving real risk transfer.

#### ***Correcting poor incentives***

In many fields of public policy, incentives are poorly aligned, with those who have the ability to improve social outcomes lacking the incentive to act. For example, Local Authorities responsible for providing services to young people that divert them away from crime or worklessness do not share the savings from reduced prison numbers or reduced benefit bills. SIBs can help to align activities in a systematic way.

#### ***Unlocking new funding***

From homelessness to health, it has often proved difficult to secure funding for initiatives that set out to prevent undesirable outcomes. Against the current backdrop of public sector funding, these activities are likely to be even more difficult to fund. The analytic rigour of the SIB framework offers a potential way of funding these activities.

#### ***Promoting evidence based action***

SIBs put evidence at the heart of the process, strengthening the evidence base for 'what works' – and what does not work. In addition, SIBs encourage commissioners and providers to think in terms of investment and returns. SIBs encourage greater investment in evaluation of impact – an issue that delivery agencies (especially in the voluntary sector) often find difficult to resource sufficiently – and offer prospects of turning the rhetoric of 'investing in people' into action.

### ***Real risk transfer***

If a scheme fails to demonstrate results the government will not pay out. A legitimate criticism of PPP/PFI has been that if they went wrong, the government landed up absorbing a large proportion of the losses. SIBs involve genuine risk transfer, which has both financial and political advantages.

### ***Allocating to greatest impact***

Charitable funding often does not flow to the areas of greatest social need. More emotionally appealing areas attract greater funding levels. Equally, political considerations make it difficult for Government to spend money in certain areas. Prisoners, youth offenders, and drug addicts are disadvantaged in this way and these very categories impose the greatest costs on society and the public purse.

### ***Commercial investor***

SIBs are a new opportunity to seek returns. They allow private funders to access new sources of investment return that have not previously been available. They also allow investors to support charitable work that improves social well being at the same time as getting a financial return.

### ***Charitable funder***

Charitable funders are interested in linking their investment strategies more closely to their grant-giving (this has various labels such as mission related investment). There are obvious attractions in being able to invest in outcomes so that funds can be recycled. In addition, a focus on measurable impact and reinvestment may increase charitable foundations' ability to attract donations from the public as donations are reused on multiple projects.

### ***Delivery agency***

SIBs also provide a level of certainty to delivery agencies that their activities will be funded over a long period of time providing continuity to staff and clients. Outcome-based and fiscally justified SIBs are a systematic structure whereby government can achieve cost effective solutions and third sector organisations can get consistent goals and predictable funding.



## Challenges

Despite the significant potential benefits of SIBs, there are also challenges that need to be worked through. A common response from Treasuries is that SIBs are an unnecessarily complex way of financing better social programmes. Since government's costs of capital are significantly cheaper than markets, they should be providing finance. If there really are better approaches to cutting recidivism or unemployment, these should be directly funded by governments, rather than indirectly via SIBs. In addition, some philanthropists worry that SIBs risk diverting charitable funds to make up for public spending, essentially locking philanthropic money into government agendas.

Social Impact Bonds are very much at the path-finder stage, without tried and tested routes to follow; they also involve the management of negotiations between three parties on what can be quite complex issues. The challenges can be managed and avoided if carefully considered when SIBs are being developed, and it is important to take a phased approach to their development. This section considers the issues around risk management and design and implementation challenges.

### ***Risk-management***

We can broadly identify four types of risk that need management:

- Execution risk
- Measurement risk
- Basis risk
- Unintended consequences

#### ***Execution risk***

No matter how promising an idea seems, or how good the pilot data, the history of social interventions shows that medium scale implementation is a significant risk and there is rarely a strong evidence base providing cast-iron confidence that a particular set of interventions will work in a particular place and context. Observers of social programmes and projects tend to be suspicious of any programme which promises impacts of greater than 30% compared to alternatives, because of a long history of relatively small projects claiming such results turning out to be hard to reproduce or scale. Prudence therefore suggests aiming at impacts in the 10%-20% range (as set out in Annex 1, a case study on criminal justice).

#### ***Measurement risk***

The most technically complex issue with SIBs is how to measure the impact fairly. Funders and Government must be confident that the metric used in an SIB has no systematic bias and is on average a fair measure of performance.

Robust measurement requires that there is a clear link to the desired outcome, shared assumptions on costs, conservative and defensible forecasts and an allowance for second order effects.

Where the SIB's intervention is the primary intervention working with particular groups, the link to improve outcomes is clear. Where the SIB intervention affects people who already participating in a range of interventions (such as teenage parents and families at risk), the link is more problematic.

To manage this risk, SIB partners should ensure the business case identifies the range of interventions currently being undertaken within SIB target groups; consider including existing services as part of the SIB in a consortia approach; and use a control group with similarly high levels of existing interventions to compare with the group involved in the SIB, thus comparing the impact the SIB has in addition to existing interventions.

As measurements of outcomes come in, SIBs need to show that the interventions are statistically significant, that the results are due to the intervention and not to chance. The necessary cohort size for SIBs will vary based on the expected impact the SIB will have (large impacts can have smaller cohort sizes, while small impacts need larger cohorts). This can be problematic for some SIBs where the population size is small or where high costs per intervention require substantial amounts of funding.

The payer must also be confident that the metric used to assess the impact has no systematic bias and is on average a fair measure of performance. To manage this risk, SIB partners can partner with others to develop a larger SIB (for example, work with a neighbouring town or region); and/or ensure the control group or baseline to which the SIB's interventions are being compared is well designed.

### ***Basis risk***

Achieving 'real' savings for government stakeholder can be difficult as existing structures may not allow savings to be counted as genuine savings or the specific government stakeholder may not benefit from the saving even if government as a whole saves money (e.g. if the saving is returned to general government revenue).

In particular, the minimum extent of change required for a genuine saving may vary. For example, when one individual no longer claims welfare benefits the government makes a saving, but to save on prison costs a whole wing of a prison may have to close before government achieves any actual savings. To manage this risk, SIB partners can ensure the process of making savings is clearly agreed at the beginning of the SIB; and/or reconsider the scale of the SIB is the impact will be insufficient to achieve actual savings for government.

Diffuse benefits can also be an issue. It may be difficult to collaborate across local and central Government to address where the multiple benefits fall. Different areas of local and central Government will find this task more and less challenging depending on the area of the intervention.

For example, less reoffending has a large direct savings for the Ministry of Justice, while more community connectedness may make quantifiable but small benefits across justice, health, education and housing that are difficult to pool together.

To manage this risk, SIB partners can attempt to create more place based budgeting programs in local areas; and/or tailor the SIB interventions to achieve sufficiently high savings for one particular government stakeholder to pay out on the SIB.

### *Unintended consequences*

A key challenge for SIBs will be ensuring that SIBs do not displace existing spending and interventions by incentivising existing funders or providers to cut spending or provision. This is particularly challenging where considerable overlaps exist with existing public provision. In trying to better align incentives, SIBs can risk creating new misalignments. To manage this risk, SIB partners can include existing providers in the SIB as partners rather than bypassed, ensuring that they have a strong incentive to make the SIB work, and/or reach agreement with existing providers to maintain current level of spending or program delivery.

### ***Design & implementation***

In their most extensive form, SIBs will involve the management of complex negotiations across three different realms – the public, private, and the social. As these all have their own specialist ‘language’ and culture, the scope for misunderstandings and/or loss of momentum is considerable.

The approaches most likely to succeed will include three phases:

- Moving from initial interest to an assessment of feasibility;
- Deepening analysis and testing out views from potential sources of finance and deliverers of services to create an outline business case; and
- Moving from deal shaping to deal-closing.

Conceptual and analytical skills are particularly important in conducting the research and modelling that is needed in the first two phases. As well as identifying promising service delivery initiatives, a core goal of research activities should be to identify relevant activities already underway in the locality.

Strong relationship management skills are also vital, so that the perspectives and concerns of the different realms – from policy maker to social entrepreneur, from financier to public service commissioner - can be taken on board and made intelligible to all the parties involved in creating a SIB.

Such a blend of requirements – analysis and creativity, stakeholder management and programme management skills, negotiating abilities, legal and accounting expertise – is not straightforward to deploy. However, there are good grounds to believe this challenge can be overcome.

## 4. Applying SIBs to social need

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SIBs are a vehicle that can be used on a range of areas, but not for every area of social need. The nature of SIBs, as well as their risks, means that careful consideration needs to be given to where it is and is not appropriate to use a SIB.

### Common questions

**Can they finance innovation?** Philanthropic SIBs are well placed to finance risky innovation, as can public sector ones. However commercial variants are likely to be able to support only proven models, where there is a reasonably clear prospect of assessing risk. They are almost certainly not suited for innovation which by definition involves much higher levels of risk, though they can be useful for scaling up innovations which have demonstrated impact. A related point is that SIBs may be better suited for follow-on contracts, where a contractor has already demonstrated success over a 2-3 year period, rather than initial contracts.

**What scale will they work at?** Private Finance Initiatives tended not to be economic at a scale below £25m. Commercial SIBs may have a similar minimum economic scale, partly dependent on the complexities of the contracts. This poses a challenge since early SIBs will almost certainly be on a smaller scale in order to test the idea.

**What timescales can they work over?** Early interest in SIBs focused on early intervention for children, given the extensive evidence suggesting big returns from the right kinds of investment. However, the long delay between investment and returns make this field problematic: any near commercial discount rate will greatly reduce the apparent benefit of a future impact (this is where the investment approach becomes problematic: by comparison, future benefits in fields like health are treated as having a zero discount rate); evidence suggests that benefits from early intervention are greatly increased if the intervention is sustained or topped up during the course of a child's upbringing. This quickly implies the need to change whole systems rather than relying on bounded interventions.

For case studies on assessing expected savings see Annexes 1 to 3. For an overview of risk management, including sample size calculations, see Annex 4. For further information on sources of funding see Annex 5.

## 7 essential criteria for a SIB

The following are likely to be critical success factors for a new model of social investment including SIBs:

1. **Preventative intervention** – The intervention is preventive in nature and sufficient funding for the intervention is currently unavailable;
2. **Improves wellbeing in an area of high social need** – The intervention improves social wellbeing and prevents or ameliorates a poor outcome;
3. **Evidence of efficacy** - The intervention is supported by evidence of its efficacy and impact, giving funders confidence in the scheme's likely success;
4. **Measureable impact** – Whether it is possible to measure the impact of the intervention accurately enough to give all parties confidence of the intervention's effect, including a sufficiently large sample size, appropriate timescales and impacts that closely related to the savings and relatively easy to measure;
5. **Aligns incentives** - A specific government stakeholder achieves savings or lower costs as a result of actions *undertaken by others*. These savings need to be cash releasing and provide an actual saving to government stakeholders;
6. **Savings greater than costs** - The savings for the specific government stakeholder are relatively immediate and much greater than the cost of the intervention and transaction costs. This provides investors with enough return to absorb the risks inherent in the scheme, and can provide significant funds for social investment; and
7. **Government preference for a SIB** - Government policy for the specific agenda is keen on or at least open to the use of a SIB.

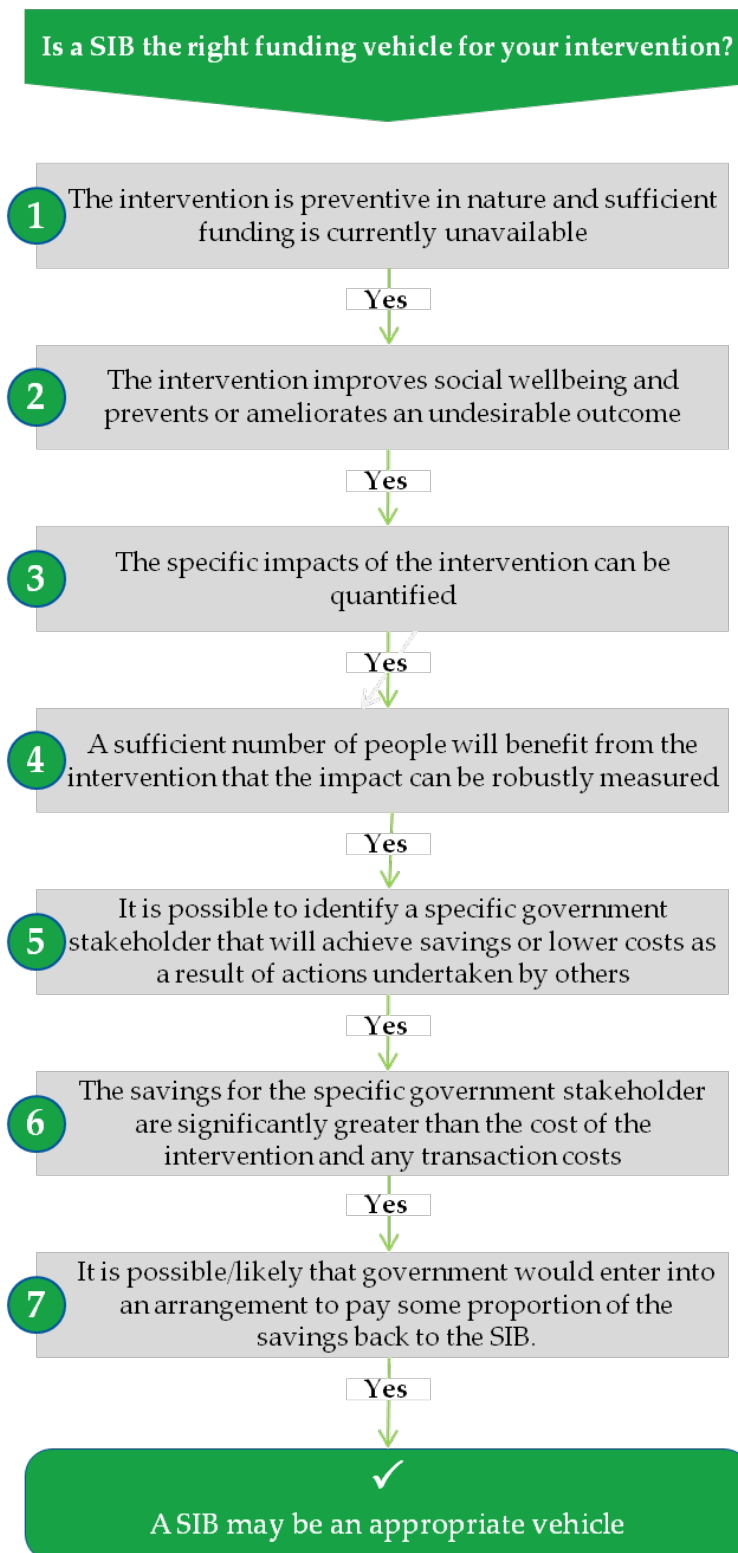
Such factors mean that SIB schemes are not appropriate for every field where prevention is a priority – fields where impact is diffuse, where small numbers are affected and/or it is difficult to attribute causality to interventions. But for the key areas set out below, such issues can be overcome.

Diagram 1: SIBs Suitability Framework



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## 7 tests of whether a SIB is an appropriate funding model



## Case studies

### **Adult reoffending**

The field of adult offending fits many criteria for a successful SIB. For a worked example of how a SIB would work for adult offending – including sensitivity analysis of high-range but plausible outcomes, see Annex 1.

<b>Criteria</b>	<b>Applicability to Adult reoffending</b>
1. Better outcomes in issue of high social need	At the time of writing the prison population stands at 85,276 (Ministry of Justice Prison Population and Accommodation Briefing – 15th October 2010). Short term prisoners who serve a sentence of 12 months or less are not provided statutory support, and frequently return to a life of crime.
2. Preventative intervention / aligns incentives	Prison is expensive. In England and Wales in 2006-07, the average annual cost of sending an offender to prison was calculated to be £39,000. The financial burden of prison, courts and probation fall to the Ministry of Justice (MOJ). The charitable sector is well equipped to provide support services to reduce re-offending at a relatively low cost in comparison to the costs of reoffending, but does not reap the benefits of doing so. A SIB would realign these incentives encouraging greater preventive action. Central Government would money from reduced offending, and charitable sectors investments would be repaid.
3. Evidence of efficacy	Evidence for effective interventions to reduce reoffending has become increasingly developed over the past 30 years. A recent review of reviews (Lipsey & Cullen, 2007), shows strong results across many interventions, stating “The volume of research and the consistency of the findings of the systematic reviews make this [the efficacy of rehabilitation] a sufficiently sound general conclusion, bordering on ‘beyond a reasonable doubt’ to provide a basis for correctional practice and policy”.
4. Measureable impact	Data on reoffending and sentencing outcomes are held by the Police National Computer. Most reoffending occurs in the first two years after release, and is typically measured at one and two years.
5. Savings greater than costs	Our estimate is that for a cost of £1,500 per person a range of interventions – such as the St Giles Trust <i>Through the Gates</i> scheme – could be applied to reduce re-offending by a proportional rate of 10% or more. This would generate savings of the order of £2,300 per person to the Ministry of Justice, more than sufficient to pay back the original investment plus interest.
6. Government policy	The Government is committed to a ‘Rehabilitation Revolution’, that would fund up-front activities designed to reduce later offending rates.

## ***Youth offending***

<b>Criteria</b>	<b>Applicability to Youth offending</b>
1. Better outcomes in issue of high social need	<p>By 2008, the number of juveniles aged 10-17 who have been sentenced in the courts of England and Wales amounted to 98,000. Community sentences, community orders and custody are all applicable– however within 2 years of release over 70% of these young offenders reoffend.</p> <p>These young people often have numerous problems that need addressed - more than 80% have used drugs, 40% have mental health problems and 45% have experience of care with Local Authorities.</p>
2. Preventative intervention / aligns incentives	<p>A complex set of organisations and institutions work with young people at risk of offending including probation, prisons, local authority social services, schools etc.</p> <p>Places in Young Offenders Institutes are expensive. In England, the average annual cost of sending a young offender to a YOI was calculated to be £55,000.</p> <p>The costs and incentives for preventive action are not well aligned with public policy distinguishing between teenagers aged 18 or below (receiving statutory intervention and support), and young adults. Responsibility is divided between local authorities (such as children’s services), and central government frameworks (such as police, courts and prisons). Tensions and poorly aligned incentives between organisations can lead to insufficient investment in preventive action.</p> <p>SIBs can incentive these bodies to work together more effectively to prevent young people becoming offenders, consequently saving vast amounts of money and improving social outcomes for those involved.</p>
3. Evidence of efficacy	<p>30 years ago the prevailing view was that nothing worked in reducing recidivism. As discussed above in relation to adult offending the present state of the evidence is quite different (see Annex 1 for data of the effects of interventions).</p>
4. Measureable impact	<p>Data on reoffending and sentencing outcomes are held by the Police National Computer</p>
5. Savings greater than costs	<p>Similar prospects for savings per person apply to juvenile offenders as to adults.</p>
6. Government policy	<p>Significant reforms are currently underway and this makes the position on SIBs less clear than with adult reoffending.</p>



## ***Youth worklessness***

The increasing number of young people who leave school and do not enter further education, training or enter employment is a major problem across the UK, intensified by the current recession. The challenge is to prevent these young people becoming NEET in the first instance, and ensuring they remain engaged in education.

<b>Criteria</b>	<b>Applicability to Youth worklessness</b>
1. Better outcomes in issue of high social need	Data for 2008 showed over 200,000 young people in the UK aged 16-18 who were NEET, some 10% of the overall 16-18 population. NEET status brings with itself a plethora of social problems: 1 in 6 young people who have been NEET for two years or more by the age of 24 will continue into life long unemployment, and much more likely to be involved in crime.
2. Preventative intervention / aligns incentives	<p>The financial burden of young people becoming NEET falls largely on the central government – through increased welfare costs and, to a lesser extent, increased criminal justice costs. However the central government has few levers it can use to stop young people becoming NEET.</p> <p>Local governments, schools and NGOs are well placed to provide services that are critical to preventing young people from being NEET, yet do not have financial incentive to do so. A SIB could realign these incentives by sharing the savings achieved by central government from reduced NEET numbers.</p>
3. Evidence of efficacy	There are many examples of good practice which seek to prevent young people becoming NEET. For example, the education youth charity Skills Force offer an alternative curriculum for 14-16 year olds, allowing them to achieve accredited qualifications while building their self confidence, esteem and re-engaging them in school. Similarly, XL Clubs, ran by the Princes Trust, operate in schools on a well established two year programme.
4. Measureable impact	The Department for Education generate quarterly statistical releases which give information regarding the levels of NEETs. Connexions have also developed a Risk of NEET Indicator tool (RONI) which looks to certain risk factors which could be used to identify individuals who are at risk of becoming NEET, and assess the impact of the intervention.
5. Savings greater than costs	Our estimate is that the successful movement of a young person from NEET status to employment saves government an amount of the order of £4,400. The effectiveness of interventions in reducing risk of NEET status makes this a potentially viable SIB.
6. Government preference for a SIB	Government has extensive experience in 'welfare to work' schemes and this would be an extension of that approach.

## ***Housing and health***

For further details on this case study see Annex 2.

<b>Criteria</b>	<b>Applicability to Housing and health</b>
1. Better outcomes in issue of high social need	Providing support to people to stay in their own homes benefits older people who want to remain living independently, and also to society through reduced need for costly care.
2. Preventative intervention / aligns incentives	NHS and local authorities incur significant costs in providing care to people who are unable to live independently. The average cost of residential care is £18,500 per annum, rising to £25,500 if constant medical care is provided. With better alignment of incentives, housing providers would be well placed to provide support to people to remain in their own homes, rather than be treated in hospital (for which the NHS pays), or to move into a care home (for which the local authority pays) or to move into a nursing home which is paid for by a combination of local authority and NHS funding.
3. Evidence of efficacy	There is a body of academic research and independent evaluation that has evaluated interventions targeted at older people in housing, including through the Department of Health funded. Partnerships for Older People Projects (POPPs) which funded a range of initiatives to promote independence in several areas.
4. Measureable impact	As the POPP scheme has demonstrated, there is an ability to track activities such as hospital and care admissions. Issues such as collating and sharing data between local authorities and the NHS would need to be worked through.
5. Savings greater than costs	Interventions to improve vary in cost – from low cost hand railings to prevent falls, through to much higher costs in full housing conversions to allow disability access. Assessing whether the costs outweigh the savings would require modelling of specific interventions against their likely savings. However our initial assessment given is that the savings are very high for hospital and residential care and would likely out way the preventive costs.
6. Government preference for a SIB	Attitudes of GP commissioners to this approach are unclear as the new commissioning arrangements for the NHS are yet to be inaugurated.

## ***Health prevention through telecare***

For further details on this case study see Annex 3.

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<b>Criteria</b>	<b>Applicability to health prevention</b>
1. Better outcomes in issue of high social need	Patients with such conditions as Multiple Sclerosis can be supported to self-manage their treatment to a much greater extent than is normal currently. This reduces hospital visits and maintains health outcomes.
2. Preventative intervention / aligns incentives	Previously, MS patients who had queries with their conditions were admitted to hospital on a very frequent basis. There is scope for a new and better approach - assisting patients in quickly accessing expert advice and nurse-led at-home treatment – but only if payment structures and financing is aligned.
3. Evidence of efficacy	A pilot is underway funded by University College Hospital and the Young Foundation.
4. Measureable impact	There is an ability to track relapses and hospital admissions.
5. Savings greater than costs	The expected cost of treatment in hospital is some £1,677 per person, compared to at-home treatment costs of £700. The expectation is that some 80% of patients will be able to remain at home rather than enter into hospital.
6. Government preference for a SIB	Though the anticipated savings are substantial, attitudes of GP commissioners to this approach are unclear as the new commissioning arrangements for the NHS are yet to be inaugurated.

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## 5. Next steps and future scenarios

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SIBs are now being considered in many parts of the world, including the USA, Australia and Europe. Their apparent simplicity is clearly appealing, even if their execution is likely to be more complex.

Our hope is that a range of variants will be tried, tested and evaluated over the next few years with maximum openness on methods, legal forms and results. We also expect the broader field of Social Impact investing to evolve with a variety of tools, some of which will be variants of payment by results, and some of which will involve new delivery forms.

We see this area of work as an exciting field with some parallels to the early experiments around private finance for infrastructure, PFIs and PPPs. Then too, some of the models that seemed most promising turned out not to work or to be too costly, yet others eventually became part of the mainstream. Inevitably, as in any field of social innovation, there are still many questions and answers to be found. That process of discovery will take time – it could certainly take as long as 5 to 10 years for commercial investors to take up the new asset classes.

We also see it as likely that Government will see SIBs as one of many tools for investing in and buying social outcomes. Often they will seek direct contracts with delivery organisations rather than financial intermediaries. However, in the context of constrained public spending and pressures on public debt, the advantages that come from bringing in new players will often outweigh governments' low costs of capital.

The Young Foundation's current work focuses on youth worklessness, health, offending and a range of housing-based initiatives. Our other work designing and running often large-scale programmes in these fields means that we have a good understanding of policy contexts, of evidence, and of the practicalities of implementation. Drawing on this experience, we have developed detailed business cases, and as the case studies outlined in this report indicate, there is potential for substantial benefits among a range of organisations, from local authorities to housing associations.

We have also engaged extensively with the many parties necessarily involved in making SIBs happen. Our role is not to become a financial intermediary or to raise bonds ourselves, but rather to help others to do so, and over the next few years we would like to see a range of organisations taking on these roles as a market develops with a number of competing providers.

This paper is designed to set out our current thinking – but also to encourage comment and practical suggestions. Please email any comments to the Programme Leader co-ordinating our Social Impact Investment and Social Impact Bond agenda, [Neil.Reeder@youngfoundation.org](mailto:Neil.Reeder@youngfoundation.org).

# Annex 1 – Modelling SIBs for Criminal Justice

In this section we outline the case for SIBs as applied criminal justice. We consider what levels of reduction of re-offending can occur through numerous provisions, what returns are necessary for funders, and assess the feasibility of Social Impact Bonds in the light of this data.

## ***What effects are plausible?***

Any SIB or equivalent will only work to the extent that the package of interventions is effective. The following table is taken from Lipsey and Cullen (2007), which collates results from meta-analyses of several hundred studies on the effects of rehabilitation on offending.

Overall, the studies, taken from Europe and USA, have identified major scope for improvements in reoffending rates. Indeed, in America justice reinvestment strategies have been effectively employed to break the cycle of recidivism, reduce prison expenditure while maintaining public safety. As illustrated, the average reduction of reoffending is 20%, with no study showing an effect less than 10%.

Study	Year	Age	Mean Effect Size	Number of Studies	Change in recidivism
Garrett	1985	Juveniles	-0.05	19	-10%
Whitehead & Lab	1989	Juveniles	-0.12	50	-24%
Andrews et al	1990	Juveniles & Adults	-0.1	88	-20%
		Juveniles	-0.1	70	-20%
		Adults	-0.11	18	-22%
		Juveniles & Adults	-0.11	68	-22%
		Juveniles & Adults	-0.07	20	-14%
Petrosino	1997	Juveniles & Adults	-0.1	115	-20%
		Juveniles	-0.12	55	-24%
		Adults	-0.07	53	-14%
Cleland et al	1997	Juveniles & Adults	-0.08	515	-16%
		Juveniles	-0.08	288	-16%
		Adults	-0.07	227	-14%
Lipsey & Wilson	1998	Juveniles	-0.13	117	-26%
		Juveniles	-0.07	83	-14%
Illecas	2001	Juveniles & Adults	-0.17	22	-34%
		Juveniles	-0.19	13	-38%
		Adults	-0.14	15	-20%
Latimer et al	2003	Juveniles	-0.09	156	-18%
<b>Average</b>			<b>-0.10</b>		<b>-20%</b>

Case study evidence is also supportive. Through the gates mentoring and holistic support is one approach to reduce re-offending that has been shown to be highly effective. It facilitates a successful transition to the outside world, with support given to access housing, drug and alcohol treatment and employment opportunities.

### ***Expected costs***

A first step at answering this is to consider the types of interventions required, which varies according to the issues to address of the cohort being supported. An unpublished analysis of needs (for those attending probation service in a large local authority area) suggests that around 16% of offenders had alcohol and drug problems with no additional need in relation to employment; a further 34% had alcohol and drug abuse problems and some form of employment need; and 50% required more generalist support. On the basis of case study evidence, our estimate is that the weighted average cost of interventions for these three groups is some £1,300 per participant, with programme management costs and start-up costs adding a further £200 per participant.

### ***Savings to Ministry of Justice***

These derive from a reduction in custodial and non-custodial sentences. We use a base case impact of 10% in the calculations below:

- The basic cost data that we use are that court and legal costs per case average around £2,900; the annual cost of incarceration is £39,000; and the cost of a non-custodial sentence is around £4,300.
- The expected length of time served in custody (where applicable) is calculated from the average sentence served by an offender (some 9 months for those who have determinate sentences), and the expected length of future custody spells (which is affected by the probability of have a non-determinate (life) sentence). Our estimate is that the baseline figure for costs for an individual should be the annual costs multiplied by a scaling factor of 1.25 years.
- The next step is to estimate the effect of a 10% improvement in reoffending performance on sentencing rates. We estimate a baseline two year reoffending rate in the target group of some 61%, with an associated 41% reincarceration rate. A 10% improvement in performance sees the reoffending rate drop to 56%, and reincarceration rates drop to 37%. This implies a 4% fall in reincarcerations ( $41\% - 37\% = 4\%$ ) and 2% fall in non-custodial sentences ( $21\% - 19\% = 2\%$ ).
- A further factor is the extent to which offending severity may reduce as a result of the intervention. We have modelled an impact equal to half the reduction in sentencing rates for custodial sentences. We have also modelled for an effect of interventions in years 3 and 4, estimating that the effect of the intervention fades to around a third of that in years 1 and 2.
- A final issue is the extent to which potential savings can actually be achieved - there are many fixed costs associated with prisons. A conservative estimate is to assume that only 60% is cashable.

Our calculations suggest that the average saving per person through reduced numbers of custody days and court appearances is of the order of £2,300. This sum is more than enough to pay back the original investment of £1,500, plus annual rate of return of 7.5%, plus margin for the Ministry of Justice.

### ***Sensitivity analysis***

As noted, our base case assumes an average impact rate that reduces two-year reoffending rates by 10% proportionally (61% to 55%), which represents an absolute reduction of 6.1%. We have also modeled the effect of moving to an average impact rate of the order of 15% proportionally.

At this level of impact, our analysis indicates that the Ministry of Justice would be making savings of the order of 2.4 times the original investment. A key question then is what proportion would be passed on to the original funders.

On the assumption that the return for funders is 7.5% of initial investment up to the average impact of 10%, plus a 40% share of savings on any impact above 10%, our analysis indicates that the return to funders as a proportion of the original investment could be as much as 30% p.a., though such clearly such a sum would be dependent on any capping arrangements put in place by the Ministry of Justice.

## Annex 2 – Modelling SIBs for Healthcare

In this section we outline the case for SIBs as could potentially be applied in health. We look in particular at a project funded by University College London Hospitals (UCLH), Health Launchpad at the Young Foundation and the Regional Innovation Funds.

### ***Project Description***

NeuroResponse is a new model of telecare for people with Multiple Sclerosis, using telephone, video and e-mail, greatly improving the ability of MS patients to manage their condition. By supporting patients to self-manage aspects of their condition, hospital visits are significantly reduced and cost savings achieved.

### ***Plausible Effects***

Prior to this project, MS patients who had any queries on their condition, or were in fear of having a relapse, were admitted to hospital. A relapse treated in hospital costs a total of £1,677 per patient per relapse to the Primary Care Trust (PCT).

Through the NeuroResponse service, MS patients can quickly access expert advice on their developing condition, as well as nurse-led at-home relapse treatment provided by NeuroResponse in partnership with Medco at a reduced cost of £700 per patient per relapse. The team at NeuroResponse aims to divert 80% of hospital treatments to the at-home service.

### ***Expected Costs***

The operational fixed costs of running the NeuroResponse service involves employing staff such as nurses, developing technology platforms and software packages to allow technology to be used effectively with participants and various overheads and promotional materials. At-home treatment costs are specified conservatively at £700 per patient per relapse.

### ***Savings to Health service commissioners***

These derive from a reduction in hospital admissions due to MS relapse.

- An initial step is to assess the *expected cost of traditional annual in-hospital relapse treatments*. We know the expected cost of treatment in hospital is £1,677 per person per relapse. There are approximately 85,000 people with MS in the UK, representing 0.14% of the total population, and translating to just over 10,000 MS patients in the Greater London area. NeuroResponse expects to see around 535 relapses annually, translating to around 1,233 calls. This is approximately equal to an annual spend of £0.90m.
- The second step is to estimate the effect of an 80% offset of costs to an at-home treatment service. NeuroResponse estimates that 20% of calls received to their NeuroDirect service will result in at-home relapse treatment, and that 5% of calls received will represent more serious cases, needing traditional in-hospital treatment. This results in a diversion to at-home treatment of 80% of patients who would have otherwise been admitted to hospital. These patients will receive treatment at less than half the original in-hospital cost, at £700 per patient per relapse or an annual estimated cost of £0.20m.



- The third factor is the fixed annual costs of the service, at £0.38m in the first year, with a projected annual growth rate of 5%.
- A quick evaluation of savings to the PCT commissioners in the first year is therefore £0.21m.

# Annex 3 – Modelling SIBs for Housing and Employment

This Annex overviews the potential for a SIB in reducing overcrowding and increasing participation in work or study, based on a project run by a London Housing Association.

## ***Project Description***

The project tackles overcrowding by offering housing and training and employment support to adult non-dependents living in overcrowded social housing. It aims to break dependency on social housing and benefits, to increase people's aspirations and career expectations, and increase incentives by providing a housing association flat on a temporary basis, subject to engagement in, and sustaining of, employment or training.

## ***Plausible Effects***

The pilot has worked intensively with a small number of households to reduce overcrowding. Key results to date are that of 49 housed only 2 have found the move to independent living too challenging and are no longer participating in the program; that there has been a 90% reduction rate for clients who were defined as 'NEETs' and are now housed and in work, training or studying; and that 60% of council client households are now no longer overcrowded because of the project's intervention.

## ***Project costs and savings to Government***

The approximate costs per participant in the project are £3,000 per annum, which includes purchasing furniture for each unit; project management; staff travel, office equipment; and case works to provide support to the participants.

In return, the project provides a range of savings and enhanced outcomes for various government departments and agencies:

- Housing expenditure (capital) - Reduced need to build larger and more expensive housing stock as household sizes are smaller.
- Lower income support, higher tax receipts – the project assists many people who continually cycle in and out of low paid work – as well as working with NEETs – by providing access and incentives for training to lead to more stable employment.
- Reduced burden on health care (NHS) – A range of increased health costs are associated with household overcrowding. Reduced overcrowding will lead to less reliance on GPs, hospitals and broader health care services.

## Annex 4 – Risk management

In relation to controlling bias, it must be shown that the improvement in the required outcome is due to the service provided, not any other factor. Thus the effect of the intervention must be isolated from other likely influences on the metric, and it will usually be necessary to use control groups. After controlling for bias, we are left with controlling variation and the effect of chance. Required levels of robustness of results can be obtained either by increasing the number of participants in the study, or by confining ourselves to larger effects.

Statistical methods allow us to model the interplay between the following factors:

- Government's confidence level. The government's confidence that it is not paying out for a scheme that has succeeded only by chance (that is, the probability of a 'Type I error');
- Funder's confidence levels. The funder's confidence that a good scheme will not fail to show a result through bad luck (a 'Type II error' in statistical terms);
- Sensitivity to effect size. The size that an effect of an intervention has to be to reliably enable detection of change;
- Sample size. The number of participants in the control groups.

The chart and table below shows how this trade-off works. In essence, it is possible to have a reasonable degree of confidence in a scheme, for a manageable sample size, and a high degree of sensitivity. Measurement can be both fair and accurate.

	Funder's Confidence					
Predicted Effect	90%	85%	80%	75%	70%	65%
5.0%	2014	1519	1178	921	718	555
10.0%	516	393	308	244	193	152
15.0%	235	180	142	114	92	73
20.0%	134	104	83	67	55	44

*Notes: The table follows the methodology laid out in Fleiss (Fleiss, 1981), for a one tailed test of significance of independent dichotomous outcomes. Control Group is assumed to be twice the size of the treatment group, and one tailed  $\alpha$  is set to 30%. Baseline probability is assumed to be 0.5.*

## Annex 5 – Sources of funding

This section outlines three categories of funding arrangement:

- Financing by passing on the interest payments of a crowd-sourced appeal to local residents and businesses for funds;
- Financing from charitable trusts and foundations; and
- Financing from social financial institutions.

And discusses the potential rates of return investors might request.

### *Interest payments from crowd-sourced appeal*

This approach works by making a crowd-sourced appeal for funds, with the proposition that the interest from the funds will go to good causes, while the funders will receive their money back in five years time. The organiser of the scheme achieves this outcome by loaning the funds at interest to a social housing provider. The interest is paid up-front to the cause that is the focus of the bond. At the end of a five year term, the housing provider repays the loan plus interest, which equates to exactly the amount required to repay the investors. This implies that amounts equal to 10% to 15% of the total receipts could be utilised for a Social Impact Bond.

### *Financing from charitable trusts & foundations*

We have spoken to a range of charitable trusts and foundations that would be able to provide finance by an amount up to £0.2m. An overall view is that Social Impact Bonds are an experimental concept that has yet to be properly proven, and until that is achieved the amount of projects that will be funded is low. It is felt that 7.5% interest rates are about right for the level of risk contained in the Peterborough project – but that the risk of other projects would need to be looked at carefully and the interest rate adjusted appropriately.

### *Social Bank financing*

A small number of 'social banks' promote loans on the basis of both social and financial objectives. One such bank has an average value per loan of £0.1m, with an average length of financing some two and a half years. It charges interest rates of the order of 8 per cent per annum, plus a one-off 1 per cent arrangement fee. Its key criteria for authorising loans include effective capabilities within the borrower organisation, a clear sense of 'how' the borrower will achieve the desired social benefits, and a good business plan. It has a failure rate of the order of 5% to 10% of its loans - which equates to a failure rate of 10% to 20% over a five year period.

### *What returns may be required?*

For a funder who is invested in a portfolio of schemes, the schemes that succeed will have to compensate for those that show no effect, and therefore bring no return. The table below shows the necessary average return to investors of successful schemes, given a range of probabilities of success for individual schemes (from 95% to 50%), and differing levels of required overall returns (from 20% to 0%). Here the payback is assumed to be after two years.

	<i>% success rate of portfolio</i>			
	<b>95%</b>	<b>90%</b>	<b>75%</b>	<b>50%</b>
<i>Return per intervention for funder with overall 0% desired return</i>	3%	5%	15%	41%
<i>Return per intervention for funder with overall 10% desired return</i>	13%	16%	27%	56%
<i>Return per intervention for funder with overall 20% desired return</i>	23%	26%	39%	70%

At an expected 90% success rate for a portfolio, these results suggest that for an average project:

- Charitable trusts and foundations would seek a 5 to 10% rate of return;
- Public sector bodies would look for a 10 to 20% rate of return; and
- Commercial entities would aim for a rate of return of the order of 20 to 30%.

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