



Financing social value: implementing Social Impact Bonds

John Loder, Geoff Mulgan, Neil Reeder & Anton Shelupanov

Winter 2009

1. This paper summarises the rationale for new instruments for incentivising outcomes, the three broad options, and the issues raised. Social Impact Bonds are designs for new kinds of contract, with one or more of national government, local authorities or foundations committing to make payments tied to outcomes achieved.
2. The paper describes:
 - The various options that combine new sources of finance, interventions, and payments linked to outcomes achieved;
 - The practical challenges around measurement and risk, and finding actions which can release cash;
 - Key fields where these new instruments could be applied, including criminal justice, healthcare and education;
 - An illustrative model of likely patterns of impact and returns.
3. Our models have the potential to create new markets for social outcomes; they also have potential to encourage a shift to more strategic commissioning at local level, with commissioning more directly linked to outcomes achieved. During 2010 we anticipate a range of different models being piloted, with rapid learning about what works.

1 Introduction

1.1 In early 2008, in response to ideas from the City Leader’s Group, the Young Foundation coined the term ‘*Social Impact Bonds*’ (SIBs) and published a short paper with that title setting out our thinking on a new generation of financial tools to support investment in social solutions.¹

1.2 SIBs describe a range of financial assets that entail raising money from third parties and making repayments according to the social impacts achieved. Our thinking drew on a multitude of investment methods in use to achieve social outcomes, which include:

- Direct commissioning for outcomes, notably in welfare to work, where providers are rewarded for success in achieving job outcomes for clients. There is now several decades of experience on how to commission for outcomes rather than outputs and activities.
- Advance Market Commitments (AMCs), which aim to incentivise R&D. To encourage the development of vaccines for diseases in developing countries, donors guarantee the prices of successful products, so creating a viable future market and encouraging innovation.
- Tax Increment Financing (TIF). Redevelopment money spent on a disadvantaged area will often produce little direct income, but will have a beneficial effect on local taxes. For example investment in roads, schools, or public transport. In a TIF, any increase in tax revenue for a given area is directed to repayment of the original investment - promoting areas that would not usually be targets for commercial development.
- Clean Development Mechanism. The arrangement under the Kyoto Protocol that underlies carbon credits, and the “cap and trade” system for channelling investment to reduce emissions.

Developments

- 1.3 Since our original paper was published the field has developed steadily:
- In the UK, variants of Social Impact Bonds are being taken forward by the Prime Minister’s Council of Social Action which has commissioned Social Finance to develop specific models focused on criminal justice.

- The White Paper '*Smarter Government*' in December 2009 committed to new action on SIBs, some under the Department for Communities and Local Government. The Conservative Party has also expressed interest in a potentially rapid expansion of tools of this kind.
- Discussions are underway on similar financing tools – Health Impact Contracts – in relation to healthcare. These would be based on a commitment by the NHS to make payments, at a future date, linked to outcomes achieved by partners in improving the lives of a particular group that are in turn related to real savings for the NHS.
- Various local authorities are exploring ways they can be more directly incentivized to tackle social issues that are creating major costs for national government, such as reoffending and hospital admissions.
- The broader field of social finance has continued to evolve, with locally raised 'community bonds' in several cities.
- In criminal justice the economic analysis of how better early investment can save money has continued to develop, through the work of research organizations such as Matrix Knowledge as well as campaigning coalitions such as Make Justice Work and the Transition to Adulthood (T2A) Alliance.

1.4 With intense pressures on public finance likely over the coming years we see an urgent need for more creative models of this kind – and rapid piloting of alternatives to find out which are most viable, and which can achieve the greatest impact without excessive transaction costs. As we show, there remain major practical obstacles to overcome in the design and implementation of SIBs in different fields. However, these increasingly look likely to be soluble.

1.5 Criminal justice and health are important areas for SIBs (we set out a worked example of the former later on in this paper). Other applications are also potentially highly suitable. For example, financial support could be made available to underpin a package of actions for young people in Pupil Referral Units to enhance their prospects of securing jobs. Although such schemes can look expensive, when overall patterns of outcomes are taken into account a different picture often emerges. SIBs have a key role to play in making this true value for money picture more transparent.

Remainder of the paper

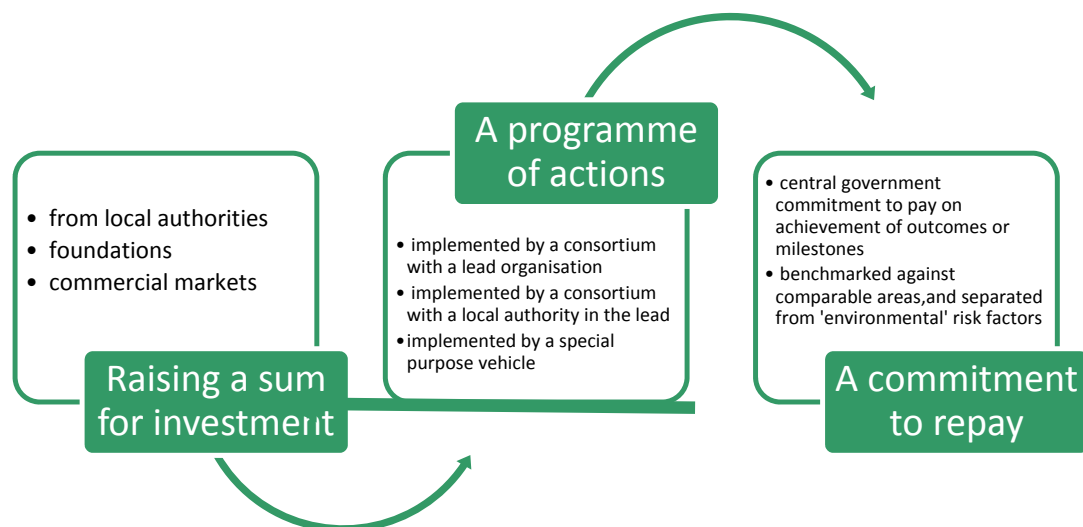
1.6 In the remainder of this paper:

- Section 2 describes the concepts underpinning Social Impact Bonds;
- Section 3 outlines the rationale of these instruments and where Social Impact Bonds can be usefully applied;
- Section 4 depicts options for structuring Social Impact Bonds, to cater for measurement and delivery risk;
- Section 5 outlines a practical application in relation to criminal justice; and
- Section 6 sets out next steps.

2 What is a Social Impact Bond?

2.1 An SIB has three elements:

- Investments (by local authorities, commercial investors or foundations);
- A program of actions to improve the prospects of a group (for example 14-16 year olds in a particular area at risk of crime or unemployment);
- Commitments by national / local government or foundations to make payments linked to outcomes achieved in improving the lives of the group (for example, lower numbers in prison). Often the payments that central government makes will be linked to the explicit savings realized by a successful scheme.



2.2 A full specification of social impact bonds requires knowing who will fulfil the role of investor, programme operator, and payer, detailing the metric used to measure the outcome we are interested in, specifying how payments will work, and what can be expected by investors in the way of social returns.

2.3 As we show there are many ways of linking the three participants in a social impact bond; and different ways of spreading risk and managing effectiveness.

2.4 In this section we discuss three models:

- Local Authority SIB;
- Commissioning SIB; and
- Third Sector SIB.

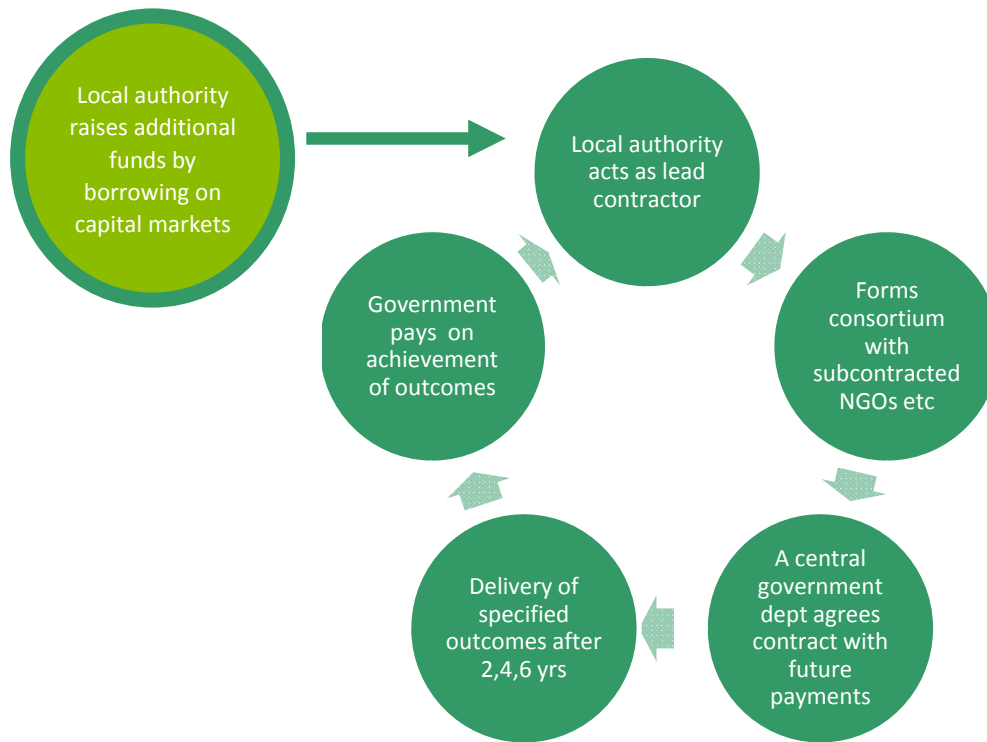
Local Authority SIB

2.5 In this first model a local authority or Local Strategic Partnership (LSP) borrows on existing markets for a package of investment in a social impact programme (e.g. for teenagers at risk of NEET status), and receives a series of payments in the future from national government if particular milestones are achieved (associated with lower costs for national government).

2.6 For example, a city, or London borough, would borrow £5m for an intensive programme of work with NEETs or potential young offenders, and would be repaid according to the numbers who achieved educational qualifications relative to an agreed baseline of similar local authorities. The repayments represent a proportion of the lifetime savings to national government (primarily through tax and benefits).

2.7 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 will generally be low. Key advantages include relative simplicity, clear responsibility and low overheads. Potential disadvantages include the relatively small number of local authorities with the capacity to work in this way.

Variant 1: Local authority focused Social Impact Bonds



Commissioning for social outcomes

2.8 A second model aims to directly incentivise a service provider or group of providers to take responsibility for delivering a particular social goal (for example taking on a cohort of vulnerable 14 year olds, with direct incentives to achieve educational and other goals by age 19). One goal could include reducing the number of those convicted or cautioned, benchmarked against comparable areas (which would extend the Employment Zone model).

2.9 Contractors would raise their own capital either through social investment sources (in which case they might be described as Social Impact Bonds, with tax treatment equivalent to Community Development Financial Institutions - CDFIs) or on the market. In the latter case there might be some risk sharing with an investor (e.g. a foundation). The contractor could be a consortium of NGOs, providing a mix of counselling, job placement, treatment services etc in an area, with one as the lead contractor.

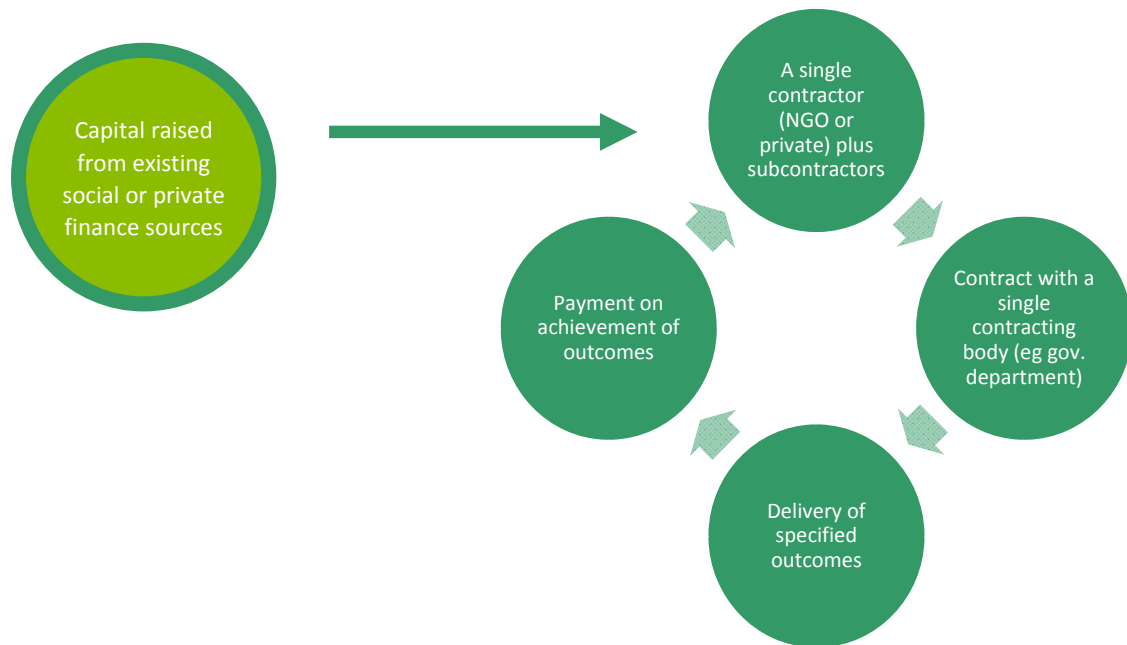
2.10 In all of these cases there are some important issues around risk transfer (and important lessons to be learned from the problems associated with Private Finance Initiatives, private prisons etc) as well as issues of accountability (in particular the local authority's responsibility for children).

2.11 The tools are now well-established and with the growth of a social finance market (primarily publicly funded through vehicles like Futurebuilders), the ability for third sector organisations to borrow against future government income is now much more considerable than in the past.

2.12 A variant of this option is for a local authority to commission for outcomes through a single intermediary. In this case the local authority and its intermediary would signal the key outcomes it wishes to commission for, and then run a process to bring together the key local voluntary sector providers to demonstrate what they could contribute and how they could collaborate, leaving the local authority with a single contract.

2.13 This model has parallels with what we have called 'social enterprise mutuals' that bring together groups of third sector organisations to share the transaction costs of contracting.

Variant 2: the commissioning model of SIBs



Third Sector Social Impact Bonds

2.14 A third alternative focuses on third sector action to achieve outcomes. It shares the risk for a bundle of interventions, with:

- finance raised from the market, with investors taking on some of the risk for non-achievement of social outcomes;
- action through a special purpose vehicle (potentially combining public sector, private sector and third sector) to manage a series of interventions with a target group; and,
- payments based on results against benchmarks.

2.15 This model is somewhat more complex, with more handovers and transaction costs, but opens up a radical new avenue for bringing in new sources of finance.

2.16 Several fields have been proposed for bonds of this kind. These include: investment in early years programmes (based on the evidence from Abercedarian, HiScope etc for fairly large long-term paybacks); NEETs (focused on life time earnings) and youth or young adult offending; care leavers; and investments in health prevention and improvement. Another potential field for action is in employment creation during the downturn.

2.17 The disadvantages of this model are likely to include:

- Uncertainty about effectiveness of programmes in relation to agreed measurements. Even if interventions succeed in diverting one group from crime, another group may fill the 'ecological space' vacated by the first group – a pattern sometimes bedevilling crime reduction strategies in the past;
- The practical difficulties of transferring risk (particularly over longer periods of time when the contracting agency may be relatively weak).

2.18 Since no market for investments of this kind currently exists in the medium term, it is assumed that any investment will come from foundations, either as part of grant funding or designated as mission related investment. However, a sufficient number of successful pilots would gradually open up the space for a more sophisticated and mature market for social interventions, paralleling the slow evolution of markets for carbon reduction and similar pollution reduction markets such as sulphur, as well as the evolution of markets in fields like welfare to work.

3 Rationale for Social Impact Bonds

3.1 The central purpose of SIBs is to more effectively realise social goals: creating more good for less money. Achieving social value for the money government spends is a complex subject, but some principles are clear, and Social Impact Bonds have been conceived in response to them:

- Incentives must be well designed,
- Innovation must be systematically promoted,
- Policy and action must be evidence based.

3.2 This section outlines these issues in more detail, then sets out advantages for participant groups and considers where SIBs have most potential.

Addressing social goals effectively

Shaping incentives

3.3 Correctly designed incentives produce results; badly designed incentives waste money. To be effective incentives must be aligned with capability, aligned with risk appetite, and aligned with outcomes.

Capability

3.4 Any large institution runs into the problem of aligning incentives with capability. Those parts of the institution that have the capability to affect an outcome may not have the incentive to act. Examples from inside government include:

- Local authorities or NGOs responsible for providing services to young people do not share the benefits from reductions in prison numbers or benefits bills;
- Few incentives for agencies to invest heavily in early years support, despite strong evidence on the long-term social gains;
- Health promotion or prevention of unhealthy behaviour often involves action by agencies such as schools which are not rewarded for their successes.

3.5 There are strong grounds for believing that there is systematic under-investment in effective prevention of social problems. SIBs can function as a link between one part of government and another, for example between local and central government, or between the NHS and the schools system. They can also align the incentives of the third sector with government policy in a more systematic way than traditional commissioning and contracting models.

Risk Appetite

3.6 Large institutions typically find it hard to encourage appropriate innovative risk taking internally. Innovation is often no one's remit, and disruptive to existing practice and interests. As Keynes said "Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally". Political considerations magnify this issue in government; failures may be excoriated in the press, while successes often go unsung. By its nature, innovation is risky and the cost of failure may be too high for those within existing institutions.

3.7 Social Impact Bonds allow someone other than central government to bear the risk of social programmes. If outcomes are not improved, government does not pay out. Instead the risk sits with those with an appetite for it, and the means to make that project a success.

Outcomes

3.8 It is generally far more effective to incentivise based on outcomes than processes. They are what count - in the end what matters is qualifications achieved, not hours of teaching. Further, process based metrics presume that we already know how to go about things, whereas outcome based metrics allow room for adaptation. Outcomes are also harder to 'game' than process targets. SIBs are based on outcomes and it is these that are important, not processes.

Systematic promotion of innovation

3.9 As well as space for new ideas, an innovative system requires a pathway whereby successful ideas demonstrate their effectiveness, and become applied on a wider scale. Innovative solutions have little value if they are not implemented, and the incentive to develop them is diminished when implementation is difficult.

3.10 In the commercial sector venture capitalists may fund start-up, but it is usually equity market funding that allows widespread roll out of an idea. Both sorts of funding are necessary and available. By contrast, in the social sector, funding to scale up is usually scarce. Many innovative institutions operate at a small scale, funded by donors. Further charitable donations are not likely to be sufficient for even regional roll out of an idea; instead government funding is necessary.

3.11 Yet getting the attention and resources of central government is uncertain. Institutions with a charismatic representative, strong marketing, an appealing client base and good timing may find themselves part of a prominent government initiative and be rolled out very quickly. In some cases this rollout outpaces institutional capability, and the promising effects of the pilot are not repeated at a wider scale. Other equally effective institutions may find even maintaining funding a continuous struggle; wider roll-out a distant aspiration.

3.12 Social Impact Bonds potentially provide a systematic, evidence based way of scaling up schemes that work well, and promoting a culture of innovation. They allow government to take full advantage of the grass roots innovation that is going on, by trying out a number of different solutions with managed risk. Further, funders are incentivised to moderate the speed of roll out, so that it does not outpace the capacity of the organisation.

Evidence Based Policy

3.13 Both incentives and innovation depend on good quality evidence. Incentive payments must be based on proven results. Growth of an idea must depend on the evidence of effectiveness, rather than the charisma of promoters or the prevailing intellectual fashion. However, good quality evidence of effectiveness in interventions is patchy, especially in a domestic context. SIBs put evidence at the heart of the process. As payments depend upon proof of efficacy, SIBs can only succeed if they generate high quality evidence along the way. SIBs will help to promote an evidence based culture in social provision.

Advantages for Participants

3.14 SIBs have other key benefits for participants – central government, scheme operators, and funders. For *Central Government*, SIBs can:

- **Save money.** SIBs promote initiatives that can save money to the public purse. In many areas social value and savings are linked. For example, reducing reoffending by ex prisoners can save the government substantial amounts. Under SIBs, the government only pays out when a direct saving to the public purse has been shown.
- **Finance with real risk transfer.** When 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.

3.15 For the *Scheme Operator*, SIBs advantages are:

- **Stability.** Government frequently adapts funding, measurement, and regulations as priorities change. This can hamper the effectiveness of third sector organisations. Outcome-based and fiscally justified SIBs provide a systematic structure where both government and third sector organisations can get what they want: adaptive and cost effective solutions for government, and consistent goals and predictable funding for the third sector.
- **Putting money where it is needed.** Charitable funding is not proportionate to social need. More emotionally appealing areas attract greater funding levels. Equally, political considerations make it difficult for central government to spend monies in certain areas. Prisoners, youth offenders, and drug addicts are disadvantaged in this way. It is in these very categories, which impose the greatest costs on society and the public purse, that SIBs are most effective.

3.16 For the various types of *Funder*, SIBs also have a valuable role to play:

- **Commercial investor.** SIBs are a new opportunity to seek returns. As we will show later in the paper, SIBs can provide attractive returns to private funders, in areas of the economy that are likely to grow strongly over coming years.
- **Charitable sector.** SIBs are a way to leverage their existing giving, for those that have promising ideas held back by lack of finance.
- **Local Authority.** Local authorities are potential partners in SIBs where they are confident that they can achieve outcomes at lower cost than national agencies or other contractors.

Where do SIBs display greatest potential?

3.17 The areas in which SIBs operate best have the following qualities:

- High social need – with funders and operators focused in this area recognising its priority;
- High public cost – provides the opportunity for financially justified SIBs. These are attractive to government, can provide investors with enough return to absorb the risks inherent in the scheme, and can provide significant funds for social investment;
- Good evidence of strong efficacy – funders can have confidence in the scheme’s likely success. High levels of efficacy mean high levels of potential saving;
- Opportunity for accurate measurement – all parties can be confident in the results of measurements. This requires the design of a metric that closely matches the outcome and is not too hard to gather;
- Reasonable timescales. SIBs are likely to be more attractive where return on initial investment is not too far in the future;
- Cash releasing. There are many fields where investment now can achieve savings and outcomes in the future. But at a time of intense pressure on public resources, there will be even more attention to options that release cash quickly. Examples include where action can reduce the need to build new physical facilities (such as prison accommodation).

3.18 The field of criminal justice, for example, fits many of these criteria:

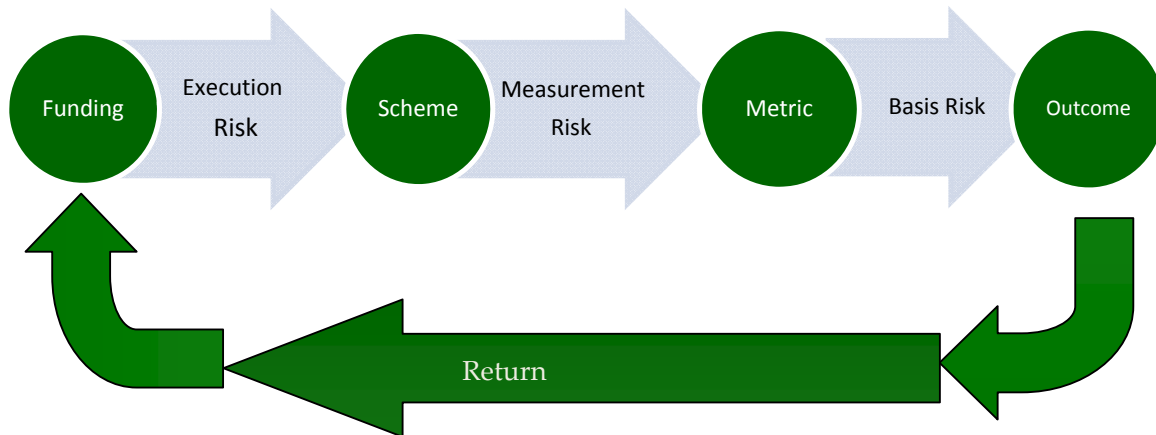
- *High social need.* Within two years of release two-thirds of adult prisoners are re-convicted. For young offenders the rate is three quarters.ⁱⁱ Ex prisoners are responsible for about 1 in 5 recorded crimes. (Social Exclusion Unit, 2002). Prisoners are particularly disadvantaged - 27% have been in care, 52% of males have no qualifications, 65% have literacy at or below that expected of an 11 year old, and 72% of males suffer from two or more mental disorders. (Prison Reform Trust, 2009)
- *High Cost.* Prison is expensive. In England and Wales in 2006-07, the average annual cost of sending an offender to prison was calculated to be £39,000ⁱⁱⁱ and at the time of writing the prison population stood at 84,130.^{iv} The prison population is forecast to rise further over the coming years. The direct cost of crime by ex-prisoners has been estimated at £11bn (Social Exclusion Unit, 2002), but the emotional impact on victims, and on trust within society is incalculable.
- *Good evidence of efficacy.* 30 years ago the prevailing view was that nothing worked in reducing recidivism. The present state of the evidence is quite different. 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”. Of the many reviews considered by this paper, each of which were themselves an analysis of many individual studies, none found an impact on recidivism less than 10% (see Annex 1).
- *Good data.* Data on reoffending and sentencing outcomes are held by the Police National Computer. It is possible to judge reoffending outcomes without excessive cost, and with a high degree of certainty.
- *Quick Payback.* Most reoffending occurs in the first two years after release, and is typically measured at one and two years. Even allowing for six months for records to be updated and data to be gathered, initial payments can be made fairly quickly.

3.19 So too does the field of healthcare. Partnership is vital for achieving better outcomes and high value for money for prevention and social care, but can be slow and difficult to achieve. There is a conflict of interest between local authorities and PCTs – with a lack of financial incentives for Local Authorities to reduce pressures on PCT budgets through acute admissions, and despite many attempts this clearly impedes more effective and integrated solutions. Various pilots have examined well defined sets of activities (such as home visits by local authority safety workers), but these are inflexible and lack adequate incentives.

3.20 Local Area Agreements provide a common framework for agreeing local priorities (including health) and steps to tackle them, but a target system alone has problems in convincing Local Strategic Partnership finance directors to act collegiately. They have flexibility to act, but in cash-strapped times can lack reason to do so.

3.21 SIBs as applied to the field of health - *Health Impact Contracts* - have potential to connect the NHS effectively with other agencies (primarily local government), opening up the possibility of local partners and their networks to harness financial incentives on a long-term, sustainable basis to achieve common health outcome LAA goals. They entail a commitment by the NHS to make payments to partners at a future date, dependent on outcomes. Health Impact Contracts bring incentives into line, and enable a rounded programme of work to be implemented rather than a fixed ad-hoc pattern of activities.

4 Structuring of Social Impact Bonds



4.1 SIBs promise many advantages for all parties. For this potential to be realised, SIBs must be structured so that risks are minimised, and returns made proportionate to the remaining risks.

- i. **Measurement Risk.** The metric used must be a fair and accurate measure of the effect of the intervention.
- ii. **Basis Risk.** The metric on which the scheme is judged must reliably drive social benefit, and cost savings.
- iii. **Execution Risk.** The risks to funders must be manageable.

4.2 We believe strongly that these objectives can be met, and in this section detail how. The concepts and arguments used here are generally applicable, and we believe the assumptions that we have made are conservative.

Measurement Risk

4.3 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. They must also be convinced that the degree of variation around this average is acceptably low.

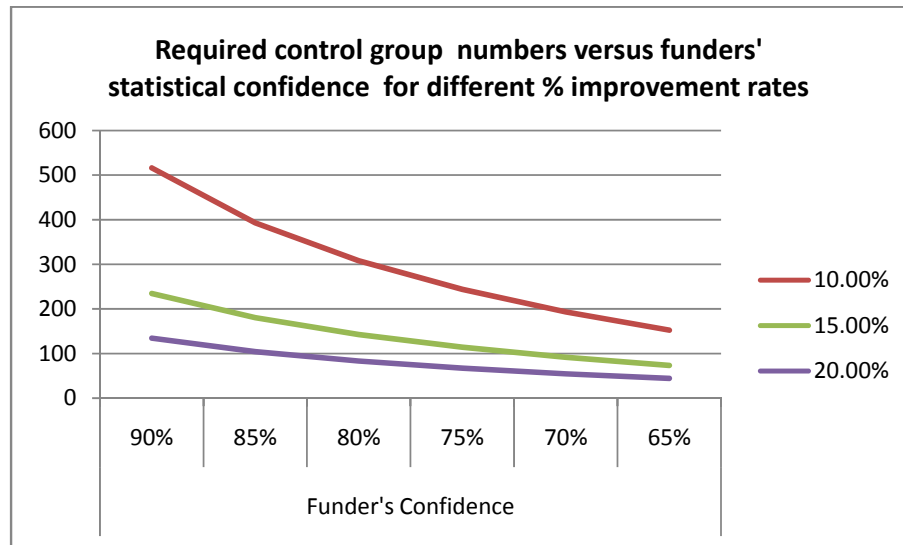
1. *Controlling Bias.* The effect of the intervention must be isolated from other likely influences on the metric, and it will usually be necessary to construct control groups. Techniques for studies of this kind are well established.

2. *Controlling Variation.* After controlling for bias, we are left with 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 predict the relationship between the factors below:

- 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.

4.4 The chart and table below shows how this trade-off works, and below we discuss the various factors. 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.

4.5 Sample sizes detailed below are conservatively estimated. Firstly for binary outcomes (such as a coin landing heads or tails, or reoffending), uncertainty is maximised when the probability is a half. More extreme values will result in significantly lower uncertainty, and hence lower sample sizes. Secondly, in many situations we will have access to additional data. In our reoffending case we will know the sentence length of those who reoffend in each group. This extra data will enable lower sample sizes for the same required level of statistical robustness.



NB: Government confidence level is set to 70%.

Predicted Effect	Funder's Confidence					
	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 α is set to 30%. Baseline probability is assumed to be 0.5.

4.6 Over large numbers of schemes it is the confidence in the portfolio as a whole that matters; saving will be closely related to average impact, and variation around this can be assumed to be fairly low. This is because the risk of the government paying out for schemes that do not work is compensated for by the proportion of the time that the government does not payout for schemes that do work. A confidence level of 70% for an individual scheme understates the true confidence that government can have in its overall returns. By contrast, non-government funders work with smaller number of projects; a level of 75%-90% confidence seems to us a reasonable range, and certainly within commercial investment this range would represent an attractive degree of certainty.

4.7 Such analyses are contingent upon a reasonable rate of improvement from the project. In criminal justice, there is good reason to expect an average effect size of 20% (a reduction in reoffending from 50% to 40% for example) (see Annex 1), which is encouraging from the perspective of statistical reliability.

4.8 Some interventions will have an effect below the predicted level. An important parameter is the minimum effect, which is the minimum point for which the Government still has the required level of confidence that the scheme is effective. Where confidence levels for funder and Government are equal, this minimum level is approximately half the predicted effect. Our model (see Section 5) scales up payments in line with effect size past this minimum level point.

4.9 For the more expensive interventions, large sample sizes will result in very large upfront costs. Decisions on sample size will depend to some extent on the scheme involved. For a scheme that is inexpensive, but where reductions in reoffending are expected to be relatively small, the funder may wish to go for a larger sample size, to be more confident of picking up an effect. A more expensive scheme with a big effect can use a smaller group with equal confidence, and thus mitigate the upfront cost.

Basis Risk

4.10 Central government needs to be confident that payments are justified by real social impact as well as concrete and demonstrable savings. This requires:

- Clear link to the desired outcome.
- Shared assumptions on costs.
- Conservative and defensible forecasts.
- Allowance for Second Order Effects.

4.11 A second order effect occurs when the success of an intervention has effects on the wider system with implications for cost savings and social outcomes. In the case of criminal justice, prison places freed up by the intervention may be filled by other offenders, who perhaps have been caught in the time police would have otherwise spent on crimes committed by scheme participants.

4.12 Second order effects can also be positive. The Young Foundation is involved in improving the effectiveness of non-custodial sentences for young people. Here the first order effect is reducing reoffending by scheme participants, which results in a lower custody bill. A second order effect may be that these sentences become more popular with magistrates as the evidence of their efficacy improves, diverting more young people from custody, and saving further youth custody expense. Second order effects are very hard to forecast, so instead a suitable margin must be built into SIBs to account for this risk.

Execution Risk

4.13 The major risk within SIBs is execution risk. The project can achieve its goal or not. 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.

4.14 Diversification is key to reducing risk. There is no reason that an SIB cannot be constructed over a package of different schemes. The statistical analysis above would then apply to the total number of participants in all schemes, and, for example, the total reoffending rate. So if it is decided that a treatment group of 400 is an optimal mix, 5 different schemes each with a treatment group of 80 has, for our purposes, very similar statistical validity as one with 400, or indeed 400 schemes each with one participant.

Structures for Risk Reduction			
Party	Execution Risk	Measurement Risk	Basis Risk
Government	NA	Diversification over many schemes	Robust and conservative modelling and extra return for second order impacts
Funder	SIB wrapped around a basket of Interventions	Higher confidence level	NA

5 Modelling Social Impact Bonds for criminal justice

5.1 There are mounting calls in both the statutory and the third sectors for Justice Reinvestment style approaches. Here, localities which generate high costs for the criminal justice system are incentivised to reduce crime and consequent costs with payment conditional upon success. The Parliamentary Justice Committee is investigating the implications and practicalities of such an approach and a recent major Local Government Information Unit report made the case for shifting financial incentives and responsibilities for criminal justice more towards local organisations.

5.2 In this section, we consider what levels of reduction have occurred, what returns are necessary for funders, and assess the feasibility of Social Impact Bonds in the light of those data.

What effects are plausible?

5.3 Any SIB or equivalent will only work to the extent that the package of interventions is effective. A range of studies from around the world (Europe and USA) have identified major scope for improvements in reoffending rates as set out below, with the average figure being an average of almost 2,000 studies since 1985. For the full data set of our sample see Annex 1.

Study	Year	Age	Mean Effect Size	Number of Studies	Change in recidivism
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%
Average of sample studies since 1985			-0.10		-20%

5.4 Mentoring is one such approach that has been shown to be highly effective – and we discuss a promising Deployer approach in Next Steps. For further details on Deployer and Remand see Annex 2.

Mentoring

The transition from prison to the outside world is often a difficult one, and can be a critical moment for an ex-offender. Success in accessing housing, treatment and support can make all the difference. A recent and promising approach has been to engage serving and ex prisoners in mentoring those approaching release and those recently released. The St Giles Trust has been running a successful program training prisoners to act as advisors to their fellow inmates, while the Prince’s Trust has been piloting a programme to have young prisoners mentored by those who have successfully rehabilitated themselves^v. Both the mentor and mentee benefit, creating a network of support grounded in the community.

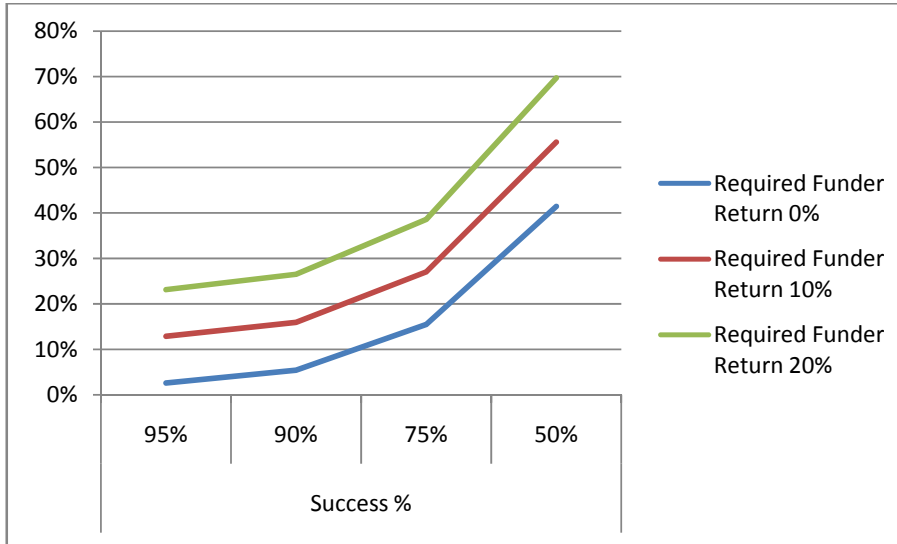
Mentoring has been subjected to considerable research in the US. Existing research shows up to an 11% improvement in reoffending, with better results from those programmes that engaged in more intensive and frequent contact with the mentee^{xvi}. Because this is a ‘cheap’ scheme, even the lower end of the impact range shows significant savings to the public purse of £1,000 to £3,000, showing that this idea is well suited to SIBs.

What returns are necessary?

5.5 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 and graph below show 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.

Required Average Return on Investment		Success %			
		95%	90%	75%	50%
Required Funder Return	0%	3%	5%	15%	41%
	10%	13%	16%	27%	56%
	20%	23%	26%	39%	70%

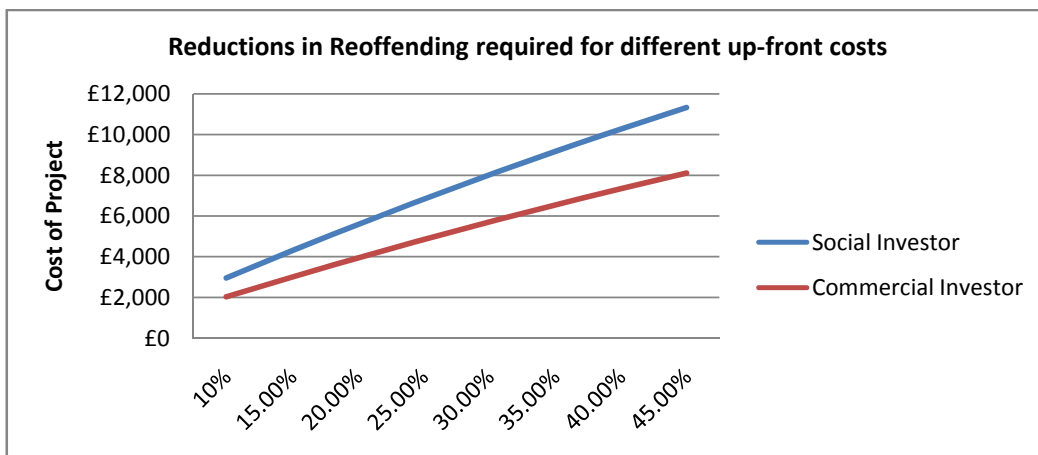
Returns needed versus success rates



5.6 On the basis of a 75% success rate (as suggested by recent meta-analyses set out in Annex 3), a social investor who wishes to break even would require a 15% p.a. return from successful schemes; a commercial investor looking for a 20% p.a. overall return, would require a 39% p.a. return.

Do effects match returns?

5.7 Conservatively assuming that the reduction in sentence length is half the reduction in reoffending, and that the trends of the scheme level down to zero within four years (see Annex 3), we derive the following chart. This shows the relationship between upfront cash put into an SIB and the reduction in reoffending required to drive these returns to investors:



5.8 With a 75% success rate and a 20% average reduction in reoffending, the average *successful* intervention achieves a 27% improvement. On this basis, any scheme below £7,200 can be justified on a social return – Social Impact Bonds have a clear and strong potential to drive both social outcomes, value for the taxpayer and returns to the investor.

Criminal Justice Costs			
Per Annum Cost of Incarceration (Adult Male Average)	£	39,000	
Court and Legal Costs	£	2,853	
Cost To State of Non-Custodial Sentence	£	4,294	
Average Sentence Length (years)		1.25	
Cost To State of Sentence (Adult Male)	£	51,603	
Cost To State of Non-Custodial Offence	£	7,147	
SIB Structure			
Government Margin*		15%	
Commercial Return (20% overall return)*		39%	
Social Investor Return (0% overall return)*		15.0%	
Government Discount Rate		3.5%	
Scheme Parameters			
Baseline Reoffending Rate in Target Group (2 year)		61%	
Baseline Reincarceration Rate (2 year)		41%	
Targeted Improvement in Reoffending*		26%	
Fall in sentence length*		13%	
Persistence Assumptions (4 years after measurement)			
Chance of reincarceration in persistence period*		32%	
Relative strength of effect*		0.40	
Results			
		Inc Persistence	2 years only
Total Saving to State	£	11,740	£ 8,359
Payment (after Government Margin)	£	9,979	£ 7,105
Transaction Costs			
Money Available for Project per Participant			
-Discounted at Commercial rate	£	3,713	£ 2,644
-Discounted at Social Investor rate	£	7,210	£ 5,134

Note * for further details on these assumptions, see Annex 3.

6 Future developments

6.1 Our hope is that, over the next 12-18 months, a range of variants of Social Impact Bonds will be implemented with a range of actors and consortiums (including foundations, local authorities, at least two national government departments and delivery organisations). It will only be through experimentation that the advantages and disadvantages of the models described above – and other potential models – will be discovered. The commitment of the Prime Minister’s Council of Social Action, and of Social Finance, should help push forward pilots in criminal justice during the lifetime of this government.

6.2 For the Young Foundation, future work on the practical implementation of Social Impact Bonds will run in parallel with:

- Consideration of a ‘deployer’ model for ex-offenders. The rate of re-offending drops by one third to a half for those who find work. However, most prisoners do not have a job to go to on release.^{vi} Training and mentoring could make a major difference to this and to levels of re-offending.
- Detailed work on how to measure and judge social value during 2009 and 2010 (which includes papers underway for the National Academy of Science in the US and the Stanford Social Innovation Review)
- The continuing work of the ‘Innovation, Justice and Youth’ programme, building on concepts associated with ‘justice reinvestment’. The concept is now being developed in collaboration with national and local government, as well as foundations, and we hope that a version of the model will soon be piloted. A feasibility study is underway to create a Centre for Justice Innovation in the UK, in collaboration with the New York Center for Court Innovation. This could provide some of the vital inputs for future SIBs.
- Work with the NHS and local health trusts and authorities on putting into practice variants of SIBs, and work at a national level with the Department of Health on the measurement of health innovations to guide the work of innovation funds. This forms part of our role as fund adviser for the new NHS Regional Innovation Funds.

6.3 We see this as an exciting field with some parallels to the early experiments around private finance for infrastructure, PFIs and PPPs. Inevitably there are still as many questions as answers; however in the context of constrained public spending for social purposes, there has never been a better time to accelerate experimentation to explore exactly what works.

6.4 This paper is designed to set out our current thinking – but also to encourage comment and practical suggestions. Please email any comments, criticisms or additions to Neil.Reeder@youngfoundation.org.

The Young Foundation

Winter 2009

Bibliography

- Fleiss, J. L. (1981). *Statistical Methods for Rates and Proportions*. Trade Cloth.
- Illescas, S., Sanchez-Meca, J., & Genoves, V. (2001). Treatment of offenders and recidivism: Assessment of the effectiveness of programmes applied in Europe. *Psychology in Spain*, 5 (1), 47-62.
- Latimer, J. (2001). A meta-analytic examination of youth delinquency, family treatment, and recidivism. *Canadian Journal of Criminology*, 43 (2), 237-53.
- Lipsey, M. W., & Cullen, F. T. (2007). The Effectiveness of Correctional Rehabilitation: A Review of Systematic Reviews. *Annual Review of Law and Social Science*.
- Martinson, R. (1974). What works? Question and answers about prison reform. *The Public Interest*, 35 (Spring), 22-54.
- Mitchel, O., Wilson, D., & MacKenzie, d. (2006). *The effectiveness of Incarceration-based Drug Treatment on Criminal Behaviour*. The Campbell Collaboration Library.
- Prison Reform Trust. (2009). *Bromley Prison Factfile*. London.
- Sherman, L. W., Gottfredson, D. C., MacKenzie, D. L., Eck, J. E., Reuter, P., & Bushway, S. D. (1997). *Preventing Crime: What Works, What Doesn't, What's Promising*. Washington DC: National Institute of Justice.
- Social Exclusion Unit. (2002). *Reducing Reoffending by Ex-prisoners*. London.
- Weisburd, D., Lum, C. M., & Petrosino, A. (2001, November). Does Research Design Affect Study Outcomes in Criminal Justice? *Annals of the American Academy*, 50-70.

Annex 1 Impact of rehabilitation on reoffending

A1.1 The following table details 8 meta-analyses, which between them analyse around 2000 individual studies of the effect of rehabilitation on reoffending (although with some overlap). As can be seen, the average effect seen is 20%, with no study showing an effect of less than 10%. These averages are over all schemes, including the ones that have no or negative effect.

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%
Average			-0.10		-20%

Mean effect Size: phi coefficient

Data from Lipsey and Cullen 2007

NB Much of this data is from outside the UK.

Annex 2 Alternative intervention approaches for criminal justice

Employment deployer for ex-offenders

- Providing stable employment to ex-offenders is regarded as one of the seven key pathways to reducing reoffending by the Government. The rate of re-offending drops by one third to a half for those who find work. However, most prisoners do not have a job to go to on release.^{vii} As much as 12 months post-release, half of all offenders have not found work.^{viii}
- The majority of ex prisoners cite lack of skills and unemployment as issues contributing to their offending.^{ix} Yet the majority of employers with experience of hiring ex-offenders found these recruits to be as productive as non-offenders; and that the act enhanced their corporate reputation.
- A Deployer for ex-offenders could adopt Worklessness Portal technology, as developed by an organisation called Good People. Ideally made available to prisoners due for release within 6 months, this would encourage offenders to assess their competencies and skills needs using software, and then provide training, mentors and support-to-learn.
- Once minimum standards are met, offenders would be issued 'skilled to work' certification in key occupational areas. It would make profiles available online to employers with a commitment to hiring from this traditionally ignored community of talent. It would enable dialogue and forge psychological contracts between offenders and employers. The unique software-based interaction would result in the ability of the delivery organisation to measure the outcomes and identify areas where greater uptake ought to be encouraged. Savings from reduced reoffending rates as a result of ex-offenders gaining employment would be significant.

Remand

- 22% of prisoners within the youth criminal justice system are held on remand^x. Secure remand cost £19.2m, of which about two thirds will be born by the YJB, and custodial remand a further £27m^{xi}
- The vast majority of these offenders will either be acquitted, or given a non-custodial sentence. (75% of those in magistrate court trials, and 33% of the much smaller number in crown court trials).^{xii}

- The use of custodial remand for offences likely to result in a non-custodial sentence is both unjust and wasteful of resources.
- Average length of remand is 36 days^x, and thus costs at least £5425. This does not include costs of transportation, induction and release. Alternative supported accommodation (not secure) costs anywhere between £500 and £1500 per month.
- Levels of custodial remand vary widely between comparable areas - 2% to 12%ⁱ
- A key reason for remanding in custody is a lack of acceptable accommodation. Local Authorities bear the cost of non-secure and specialist accommodation, and this capability has declined steadily following budget pressure.
- Each YOT on average has 4.7 young people on custodial remand at any one time^x. One fewer would mean a £55,000 saving per YOT, or £7.65m pa overall. If we assume one place at supported accommodation would cost £20 000 pa (which is likely a large overestimate), then the net savings would be £35 000 pa per YOT, or £4.87m overall. It might be advisable to split these savings between the YJB and the YOT on some ratio.
- A local authority SIB would entail the YJB contracting to pay for any reduction in the custodial remand bill, with the local authority financing appropriate accommodation, likely managed by a third sector body. Families of YOTs would provide a comparison group. Money would be invested in providing supported accommodation, rectifying the causes of breaches, and providing appropriate support at trial.

Annex 3 Assumptions in the model

Success rates

A3.1 Two recent meta-analyses (Illescas, Sanchez-Meca, & Genoves, 2001) (Latimer, 2001), which cover almost 200 individual studies, both saw success rates around 75%; 25% of studies showed no or negative results. It is highly likely that SIBs will achieve better success rates. The meta-analyses above examine many types of interventions. Specific intervention types show better results - (Mitchel, Wilson, & MacKenzie, 2006) shows an 83% success rate with in prison drug treatment programs - and SIB funders can pick the best types of intervention. Further, the success rate depends on the quality of the schemes, and the people running them. SIB funders are incentivised to pick the best designed and run operations. Finally, further rounds of funding for an SIB with proven effectiveness can build on that success. We therefore believe 75% to be a conservative estimate of success.

Targeted improvement in reoffending

A3.2 Given this 75% success rate, and a 20% average reduction in reoffending, the average *successful* intervention therefore results in a 26.6% reduction in reoffending. We have modelled on this basis, and shown sensitivity around this number above.

Reduction in Sentence Length

A3.3 A scheme that has an impact on reoffending will also likely have an impact on the sentence length of those who do reoffend. This relationship has not been studied in the UK to our knowledge. Conservatively we have assumed that the reduction in sentence length is half the reduction in reoffending.

Longer term assumptions on Reoffending

A3.4 UK data on reoffending, and most analyses of reoffending programs do not follow up beyond 2 years, so long term data is thin. Consequently we have been conservative, assuming that effects trend down to zero over the 4 years following measurement and that our population of ex-prisoners have a 33% chance of being returned to prison over this 4 year period (i.e. an 8% chance of custodial reoffending

in any year). We have also calculated results without any persistence effect, and as can be seen the bulk of the value is generated before the measurement date.

Government Margin

A3.5 The government will require benefit to the public purse. We have assumed that the government retains 15% of the benefits generated. As the SIB model matures, the government may require larger benefits, but considering the wider benefits in terms of crime reduction and encouraging innovation, government can be generous at an early stage. Further, many schemes, such as mentoring, and the Southampton council scheme discussed above, are fairly inexpensive, and offer the opportunity to expand this margin. Finally, it should be noted that the model is less sensitive to this assumption than to the others on the list.

Required Returns

A3.6 The above assumptions determine the payment by government at the date when the scheme outcome is measured. However the money available for the scheme on day one will depend on the return demanded by the investors. In the model we have assumed that a commercial investor would require a 20% p.a. return, and that a social investor would require merely breakeven. In truth these numbers will depend crucially on the nature of the specific scheme in question, the evidence that already exists for its efficacy, and the nature of the investor in question.

ⁱ 'Social Impact Bonds', April 2008; see also 'Escape from the Titanic' published in early 2008 by Anton Shelupanov, which set out the broader strategy needed in criminal justice, and where new resources could best be directed:

www.youngfoundation.org/files/images/Escape_from_the_Titanic.pdf

ⁱⁱ All Party Parliamentary Local Government Group, 'Primary Justice – An inquiry into justice in communities', July 2009

ⁱⁱⁱ Hansard, House of Commons written answers, 17 December 2008, Col.: 852W.

^{iv} Ministry of Justice, 'Prison population & accommodation briefing for – 04th Sep 2009', available from, <http://www.hmprisonservice.gov.uk/resourcecentre/publicationsdocuments/index.asp?cat=85>

^v The Prince's Trust has benefitted from the support of the Invest and Give Fund, in partnership with JP Morgan

^{vi} Ministry of Justice (2009) Statistics on Women and the Criminal Justice System, London: Ministry of Justice. Research by the House of Commons Home Affairs committee found that two-thirds of prisoners have no job on release. See: House of Commons Home Affairs Committee, Rehabilitation of Prisoners, First Report of Session 2004-2005, Volume 1 and 2.

^{vii} Ministry of Justice (2009) Statistics on Women and the Criminal Justice System, London: Ministry of Justice. Research by the House of Commons Home Affairs committee found that two-thirds of prisoners have no job on release. See: House of Commons Home Affairs Committee, Rehabilitation of Prisoners, First Report of Session 2004-2005, Volume 1 and 2.

^{viii} Stewart, D. An evaluation of basic skills training for prisoners, Home Office Findings 260, London: Home Office (2005)

^{ix} Cabinet Office Social Exclusion Task Force (2009) Short Study on Women Offenders, London: Cabinet Office. Note: evidence from analysis of Offender Assessment System data.

^x Youth Justice Annual Workload Data 2007/8

^{xi} Commons Hansard 17.3.09. Written Answer to David Kidney MP

^{xii} Children: Innocent Until Proven Guilty, Prison Reform Trust, 2009