Title: Seeking Outcomes Under Tight Budgets: A Case for Health Impact Bonds in Post-COVID Times

Running title: Seeking Outcomes Under Tight Budgets

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Abstract

With global public debt at record levels, governments are facing unprecedented challenges in providing essential health services. This exploratory study aims to assess the relevance of Health Impact Bonds (HIBs) as a means of financing preventative health services during times of fiscal constraint and in the aftermath of the COVID pandemic. The study draws on a review of the literature on HIBs, along with a case study analysis of HIBs implemented in the UK. The findings of the study indicate that, although HIBs offer promise as an innovative funding tool for preventative health services in tight fiscal situations, certain challenges are limiting their broader adoption.

Keywords: *social impact bonds; public health; impact investment; COVID; innovative finance*

Acknowledgments: I am grateful to Mara Airoldi, Kalipso Chalkidou, and two anonymous referees for helpful comments and suggestions.

Funding: *No funding was received for this study.*

Conflict of interest: *No conflict of interest to report.*

Ethic statement: *Not applicable.*

Number of words: *7185* (excluding the abstract, keywords, highlights, tables, figures and references).

Highlights

- The COVID pandemic has put a strain on government budgets, prompting consideration of innovative financing methods like blended-finance to enhance public capacity and prepare for future challenges.
- Innovative financing methods aren't a complete solution for funding public health, but they can help bring in new skills and funds, especially when budgets are tight.
- In theory, Health Impact Bonds (HIBs) can enhance healthcare outcomes and support underfunded initiatives such as preventative care. Yet, their broader adoption has been curtailed by a lack of transparency, insufficient evaluation evidence, and the usual political deliberations associated with preventative spending.
- Governments should take a market-creating role in solving societal problems and co-create markets with private investors to improve outcomes.

1. INTRODUCTION

It is common for governments across the globe to face serious challenges with budget and expenditure, as resources remain constrained and economic ambitions limitless. Taking the United Kingdom (UK) as an example, since the financial crisis of 2008 and introduction of austerity measures in 2010, the pressure to reduce deficits under strict budget constraints has significantly reduced overall welfare expenditure.

In 2010, the Comprehensive Spending Review mandated a GBP 81 billion reduction in public spending by 2015, with particular effects on expenditure areas such as criminal justice and local government services. The Ministry of Justice, for instance, were tasked to reduce spend by GBP 2 billion (23% of the Ministry's budget), by end of 2015 (Mulgan et al., 2011). Since 2010, to reinforce the need to modernise social policies, and optimise their efficiency and financing, policy makers became interested in innovative financing methods, as a mitigation strategy (European Commission, 2013). This became especially the case for policy areas where traditional policy models failed to deliver the necessary results including in areas of, children care, homelessness, youth unemployment, and long-term or chronic health issues (DCMS, 2012).

1.1. Social Impact Bonds (SIBs)

The Social Impact Bond (SIB) model, introduced by the UK Cabinet Office in 2010 (GO Lab, 2021a), is an innovative financing mechanism that connects financial returns to pre-defined social outcomes, subject to validation and evaluation. This model builds upon a history of nearly 50 years of public-private collaborations in service delivery, performance-based contracting, and evaluation and accountability outcomes (Heinrich and Kabourek, 2019). In the healthcare domain, the application of Social Impact Bonds (SIBs) originated from payment-by-result (PbR), a public service provision method proposed in 1997 to improve health gains with limited public budgets (Kindig, 1997). SIBs offer the potential to bring in new sources of financial capital, focus on preventive action, transfer risks onto new interventions, and provide new funding for civil society. Compared to traditional PbRs, a majority of financial risks in SIBs are transferred to social investors (Fraser et al., 2018). Despite attracting widespread attention, investment in SIBs has been limited. The Global Impact Investing Network (GIIN, 2017) reports that SIBs hold just around 0.3% of the capital allocation, which is the lowest in the impact investment market. SIBs have targeted social issues such as criminal justice, homelessness, child and family welfare, early childhood education, workforce development, health, poverty, environment, and adults with complex needs. Since the launch of the first program in Peterborough (UK) in 2010, SIBs have raised a total of USD 461 million, through 180 initiatives distributed across 21 countries[1] up until

[1] This excludes Development Impact Bonds (DIBs). DIBs are not part of this study due to fundamental differences they have with SIBs. In a DIB, an international private donor or aid agency acts as the outcome payer, in opposed to the national government in SIBs.

the end of 2020 (GO Lab, 2021b). The average deal size across all SIBs was around USD 1.5 million (de Gruyter et al., 2020).

1.2. Health Impact Bonds (HIBs)

SIBs that are applied to health programme are often referred to as Health Impact Bonds (HIBs)[2]. Some argue that HIBs are a viable way to fund preventive programmes (Carè and Ferraro, 2019), especially over periods of major cuts to public healthcare expenditure. HIBs raise capital from private investors for interventions which reduce health care costs by improving social, environmental, and economic conditions essential to health. In particular, HIBs are specially deemed appropriate in cost-saving preventive services which reduce the need for more costly remediation, and fill the market gap between the private and public sector (Rowe and Stephenson, 2016). Advancing preventative health measures may result in quality-of-life improvements, fewer visits to doctors and hospitals, and lower claims costs for employers. A recent study on the US found that every USD 1 invested in public health departments resulted in a remarkable USD 67 to USD 88 of benefits to society (Brown, 2016). Other studies have estimated smaller but still positive returns to public health spending (Mays and Smith, 2011; Leider et al., 2018). In theory, health stakeholders, policymakers, taxpayers, and even private investors long for such positive returns on investment.

Despite the evidence on many benefits of preventative programme, there remains a significant gap between evidence and policy decisions (Smith and Stewart, 2015; Cairney, 2019). Regrettably, governments often fall short in adopting evidence-based policymaking practices (Cairney, 2019). This disconnection becomes especially apparent in the declining trend of public spending on preventative programs in recent years, despite the compelling evidence supporting their effectiveness. In the UK, expenditure on preventive healthcare has been falling both in real and nominal terms, e.g. local authority expenditure on public health in England fell, in nominal terms, from GBP 3.5 billion in the financial year ending 2017, to GBP 3.3 billion in 2019 (ONS, 2020).

As economies across the world face budgetary constraints, high debts, and soaring inflation, innovative solutions are once again required to maintain protective and preventative services while minimising public expenditure. In this context, a closer examination of the HIB market, particularly in the context of blended finance, is warranted. By exploring the current state of HIB implementation, this study seeks to understand the key challenges and opportunities associated with scaling up HIBs as a policy option to deliver health outcomes under tight budgets. Using the learnings from the existing evidence, this study then discusses possible approaches that can further improve HIBs.

[2] This excludes Development Impact Bonds (DIBs) with a health-related focus.

The rest of the paper is structured as follows. A literature review of academic and practitioner contributions about HIBs is conducted in Section 2 to investigate potential shortcomings and advantages of the instrument. The focus here is to understand the major obstacles in implementing HIBs. In the first part of Section 3, the current state of play of HIBs across the globe and in the UK is discussed using data from public sources. In the second part of Section 3, major obstacles identified in the literature will be checked against the case study of Life Chances Fund (LCF) HIBs in the UK. In the third part, the post-COVID fiscal environment and status of the health sector are illustrated. In Section 4, there will be a discussion on the findings from the case study. Lastly, concluding remarks and a set of policy implications will be outlined.

2. METHODOLOGY

This study relies on a rapid review of literature, secondary data analysis, and a case study of Life Chances Fund (LCF) to explore challenges and opportunities in HIBs and find potential opportunities for improvement.

The rapid review was conducted using keywords including ‘health impact bonds’, ‘challenges with health impact bonds’, and ‘HIBs’ on ScienceDirect, Google Scholar and web search. The focus was on academic literature written in English. The secondary evidence analysis uses the INDIGO database (GO Lab, 2021b). This dataset collects information such as outcome payments and capital raised on 281 impact bonds across the globe. The data on HIB out of the wider dataset was then checked against evidence reported in recent studies (Carè and Farraro, 2019; de Gruyter et al., 2020; Hulse et al., 2021) for accuracy. The investment values are presented in US dollar for consistency. Initial capital extracted in local currency was first collected and then converted to 2021 US dollar, via the Federal Reserve Bank’s annual foreign exchange rates, and then adjusted for inflation via Consumer Price Index data from the World Bank. The case study investigates the major obstacles around growth and development of the HIB market using an independent evaluation of the Life Chances Fund (LCF) programmes in the UK as a case study. The LCF is the largest outcomes fund in the UK (GBP 80 million), which provided top up funding (up to 50% of total costs) to eligible SIB projects applied during three rounds between 2016-2018. The data presented here is sourced from Hameed et al. (2021) and encompasses a total of 31 LCF SIBs. Among these, five SIBs are classified under the 'Health and Wellbeing' policy domain, while the remainder fall into categories such as Employment & Training, Homelessness, Education & Early Years, Child & Family Welfare, and Criminal Justice. Although these domains may have linkages to health outcomes, it is important to note that 'health and wellbeing' is not primarily categorised as their main objective.

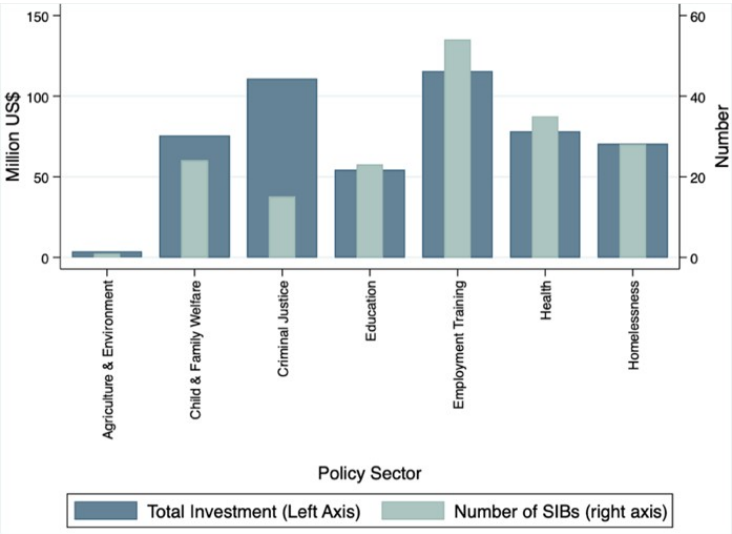
3. FINDINGS

3.1. current state of HIB implementation

The sub-section discusses the characteristics and trends of SIBs and HIBs launched across the world. Table A1 in the Appendix provides a summary of key characteristics of all 27 HIBs launched to date across 10 developed countries[3], with the UK having launched the most HIBs (13). Additionally, there are five Development Impact Bonds (DIBs) focused on health that are excluded from the analysis in this paper due to fundamental differences between SIBs and DIBs.

Figures 1-7 in the below present the landscape of HIBs to date. Up until the end of 2020, there had been USD 461 million worth of upfront investment on SIBs globally, with employment, criminal justice, and child and family welfare being the top three sectors with respect to investment. Investment in health issues stands at fourth place with respect to value (15% of total investment on SIBs) but second place with respect to the number of SIBs focused on health (15% or 28 out of 180 SIBs in total). The first HIB was launched in California in 2013, and since then, there has been a gradual increase in the volume and value of HIBs launched, with seven new HIBs launched in 2020 (accounting for 30% of new SIBs in 2020). However, the total investment has gradually decreased after peaking in 2016, suggesting that SIBs have become either smaller or cheaper.

Figure *1*. Investment by policy sector



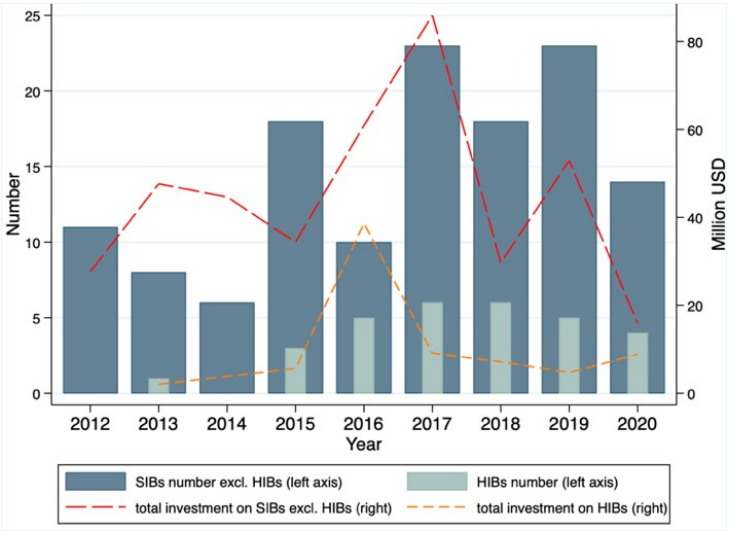
Data source: INDIGO database (GO Lab, 2021b)

The data shows a significant drop in per-user investment, especially in non-HIBs, with a 70% reduction between 2016 to 2020. This could be due to *capital recycling*, a method where investors provide upfront funding and in case of periodic outcome payments from the government, they can recycle those payments to continue funding service provision. *Capital recycling* allows the size of the investment capital needed upfront to be only a fraction of the total investment needed to fund the impact bond. However, such methods could introduce

[3] HIBs that were withdrawn for any reason at any stage of their development or implementation are excluded.

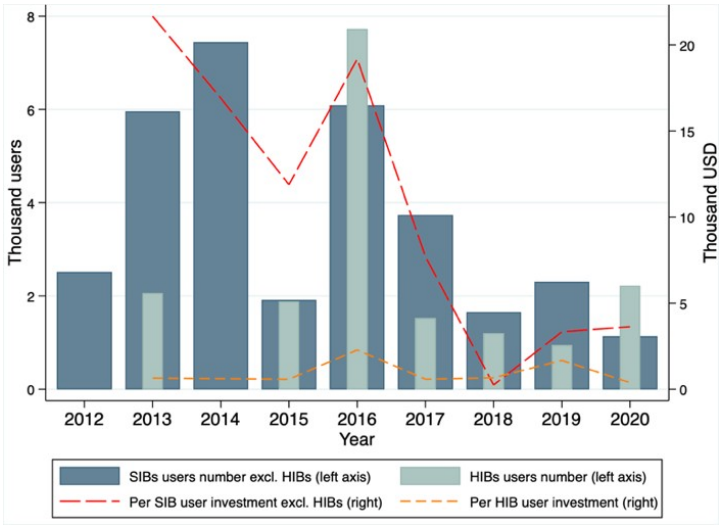
additional risk to the impact bond as the programme does not begin with the full capital it needs to run the service for the full duration of the programme. So, it must achieve each year sufficient outcomes to fund the consecutive ones (OECD, 2016). This should not be confused with return recycling, where investors recycle the return of investment from one SIB to invest in another SIB (Gustaffson-Wright et al., 2015).

Figure 2. Investment over time



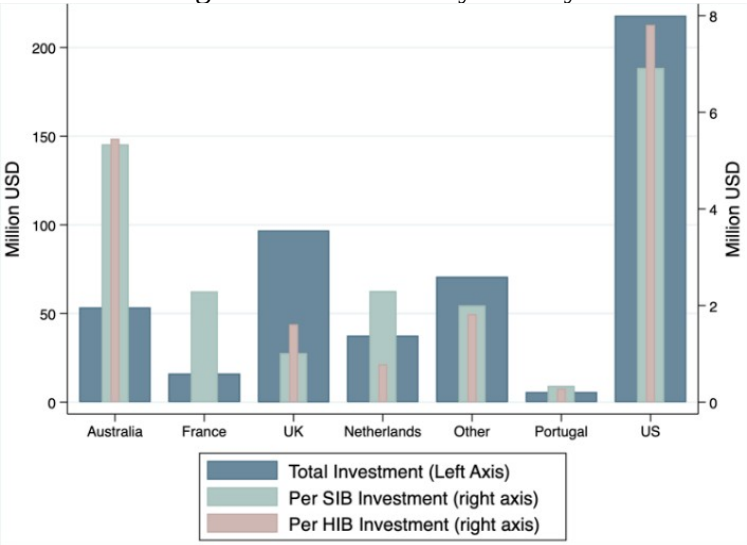
Data source: INDIGO database (GO Lab, 2021b)

Figure 3. Per user investment over time



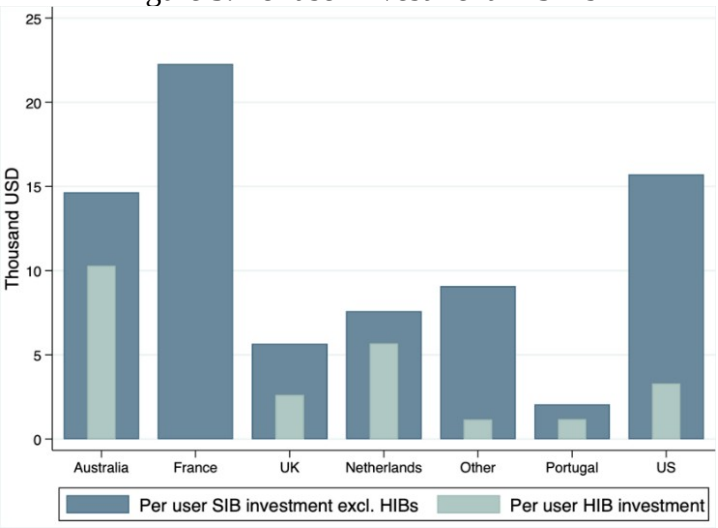
Data source: INDIGO database (GO Lab, 2021b)

Figure 4. Investment by country



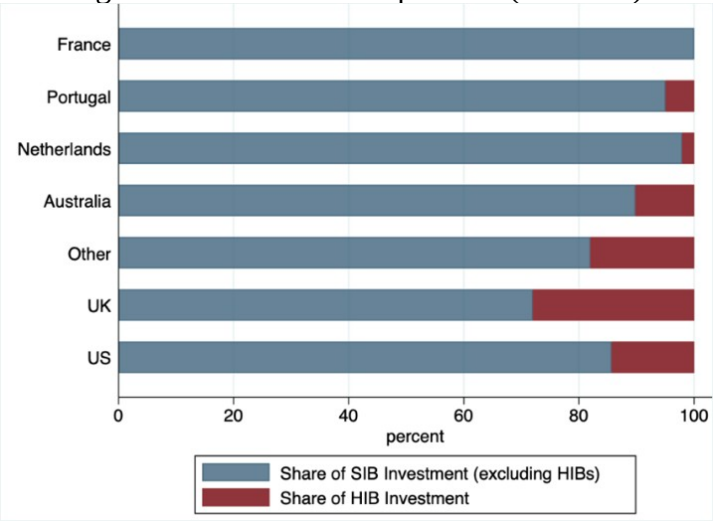
Data source: INDIGO database (GO Lab, 2021b)

Figure 5. Per user investment in SIBs



Data source: INDIGO database (GO Lab, 2021b)

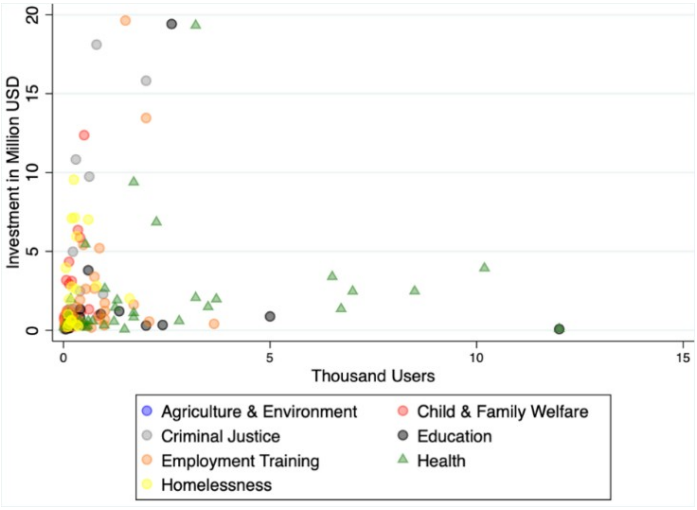
Figure 6. Investment composition (HIB/SIB)



Data source: INDIGO database (GO Lab, 2021b)

With respect to value of SIB investments, the US tops all other nations, with a total investment of USD 218 million and per SIB investment of USD 8 Million. At USD 10,300 Australia appears to attract the most per user capital for HIBs. This could be due to some of the risk-lowering approaches practiced in Australia. For instance, the first Australian HIB which was commissioned and launched in 2017, addressed the financial risk issue for investors by providing principal protection and allowance for early termination. This successfully facilitated fundraising as evidenced by the 50 different investors participating in the HIB, with the target capital met within one month (de Gruyter et al., 2020). On the contrary, British SIBs tend to attract less capital per programme and per user. Where the average raised capital for HIBs per user in Australia and the US are USD 9,500 and USD 3,800 respectively, in the UK this number is only USD 2,500. Apart from the smaller size of UK SIBs, they usually involve one to two investors, where in international SIBs there are four to 50 investors pooling their funds (de Gruyter et al., 2020). The UK, however, holds the highest share of investment in health issues, over total investment in SIBs, where 30% of capital is raised for HIBs (Figure 6). Another interesting observation is that while per HIB investment is relatively higher compared to per SIB, per user HIB investment is lower compared to per SIB. This indicates that investment on HIBs cover more users on average. Lastly, we could not find a strong relationship between total investment and number of users covered by the project (see Figure 7). In fact, the correlation is statistically insignificant and negative (-0.046). This indicates that larger SIBs in value are not necessarily large in the volume of users.

Figure 7. Scatterplot comparing number of users with total investment in LCF SIBs



Data source: INDIGO database (GO Lab, 2021b)

3.2. identifying key challenges from the literature

There is a growing literature on SIBs. Most of the current studies investigate the technical features of the model (Giacomantonio, 2017; Carter et al. 2018; FitzGerald et al., 2019), promises and limitations of the model (Warner, 2013; Fraser et al, 2018; Carè and De Lisa, 2019; Tse and Warner, 2020; Carè et al., 2020; Sinclair et al., 2021), and evaluation results or case studies on the model (Smeets, 2017; Fraser et al., 2018; Wooldridge et al. 2019; Hulse et al., 2021). There are not too many studies especially focusing on HIBs. Amongst the handful, a few explore the potential pros and cons of the SIB model for healthcare provision (e.g. Carè and De Lisa, 2019; Hulse et al., 2021). The following study belongs to that literature.

Carè and Ferraro (2019), Carè and De Lisa (2019), de Gruyter et al. (2020), and Hulse et al. (2021) explore the HIBs market from a range of perspectives and identify a set of most common issues in the way of growth and development of this market, these issues, which can broadly be found across different types of SIBs, and could be categorised under four groups:

(i) *lack of transparency*: this is a common issue which is reported for SIBs. Many scholars have highlighted the lack of transparency and limited publicly available data on costs and performances of SIBs (Loxley and Hajer, 2020; Hevenstone and von Bergen, 2020; Hulse et al., 2021). This lack of transparency has also amplified some of the common concerns around public-private partnerships such as the agent-principal problem, in which many studies indicated the risk of gaming target outcomes to achieve financial incentives (e.g. cherry picking, parking more difficult users, etc.) due to the presence of self-reported outcomes, low rigour, incomparable evaluation metrics and limited public disclosure. Also, conflict of interest – of a researcher's previous employment with the service provider – was identified as an issue in the reported evidence on one of the HIBs by Hulse et al. (2021).

(ii) *low private investors participation in HIBs, mainly due to insufficient financial returns in comparison to the financial risk*: Impact investors seek to address societal needs at scale and/ or depth to generate a positive impact return on investment. But financial returns still hold substantial weight in their investment decisions (GIIN, 2020; de Gruyter et al., 2020). A combination of low returns and high risk is believed by de Gruyter et al. (2020) to be one of the main reasons that the current HIB market is characterised by a few enthusiastic impact investors with a high tolerance for financial risk and low appetite for financial returns. These results are supported by Ronicle et al. (2016), who found that SIB investors perceived the risk-reward balance to be 'wrong', with too much risk transfer for insufficient reward. Some other studies also acknowledge that a pre-existing commitment to social impact is a must amongst SIB investors (Gustafsson-Wright et al., 2015; Tan et al., 2015; Ronicle et al., 2016). As a result, SIBs continue to receive the lowest capital allocation in the impact investment market and demonstrate closer alignment to the preferences of below-market rate return investors. In addition, the limited public disclosure of SIBs' financial terms contributes to the general lack of available information. This is a deterrent for other potential investors by limiting their ability to undertake the necessary due diligence processes to justify investment

in future SIBs (de Gruyter et al., 2020). For these reasons, compared to other impact investments, the SIB/HIB market is currently characterised by a smaller average deal size, and investors with a tolerance for higher financial risk and lower financial returns, balanced with a focus on social impact.

(iii) high transaction costs: Transaction costs are those additional expenditure borne by the public manager to establish and maintain relationships with service delivery parties, internal or external, including monitoring and evaluation costs associated with activities and outputs. Given the multilateral nature of the HIB model, there is potential for high transaction costs stemming from administrative, intermediary, and legal costs which are borne solely by the service provider or government (Hulse et al., 2021).

(iv) difficulties with implementation, measurement, and evaluation: Without any economic evaluation, return on investment analysis and the disclosed full costs of implementation, the financial value of HIBs over traditional sources of funding cannot be verified. This issue is repeated over and over in many studies on SIBs (e.g. Lantz et al., 2016; Giocomantonio, 2017; Fraser et al., 2018; Lazzarini et al., 2021; Fox and Morris, 2021; De Pieri et al., 2023).

3.3. Case Study – Life Chances Fund (LCF)

This study uses data from a recent publication (Hameed et al., 2021) on the UK Government's Life Chances Fund (LCF) to investigate major obstacles in the way of HIBs scaling. The LCF is designed to support the growth and development of outcomes-based commissioning through the use of SIBs. There are currently 31 SIBs launched[4] under LCF in the UK, including five in the 'Health and Wellbeing' domain[5]. Table 1 summarises some of the cost factors involved with the LCF SIBs. The reported statistics are drawn from ‘award set-up forms’ and represent the ‘high scenario’[6] (Hameed et al., 2021). Award set up forms present the final agreed milestones and procedures by all parties involved. It is expected that nothing changes after, but unforeseen circumstances, e.g. COVID crisis, might affect some of the arrangements at later times. The ‘high scenario’ was chosen for presentation as it shows the highest payable costs, prices, and returns that are budgeted and agreed by all parties. In the following, we will explore LCF HIBs against the four challenges described earlier.

(i) lack of transparency: While there are multiple reports available on specific projects (Hameed et al., 2021; Hulse et al., 2023) or collections of projects (ICF, 2021; FitzGerald et al., 2022), the majority of the underlying data used for the analysis is not publicly accessible. The INDIGO database is a comprehensive resource on SIBs, including LCF HIBs. However, this dataset does not provide aggregate or disaggregate level data on costs and performance.

[4] December 2020.
[5] There are other health related LCF SIBs which are categorised under other policy domains instead of ‘Health and Wellbeing’. The categorisation is on the ground of primary objective of the project.
[6] There are in general three types of scenarios defined in each LCF contract, depending on the level of success in achieving pre-defined targets. Low scenario usually refers to under-delivery but still worthy, medium scenario is the most probable, and high scenario is triggered when performance exceeds targets

The available information, at best, is confined to ex-ante data pertaining to committed investments, the projected number of targeted service users, and the maximum potential outcome payment. Transaction costs and rates of return are not available. Furthermore, due to the static and ex-ante nature of the data, it is not possible to track progress or understand the status of projects after their launch. In some cases, projects may even cease to exist (e.g., Healthier Devon) without being properly tracked. The lack of data availability, even when collected for outcome payments, is a significant barrier to research data access, as also highlighted by Hevenstone and von Bergen (2020).

With respect to broader literature, Loxley and Hajer (2020) argues that this issue is consistent with the challenges identified with Public Private Partnerships (PPP) in general[7]. The partnership nature of the SIB model with the private sector may play a role in the curtailing of data, as most private investors are accustomed to private-private deals where only little information needs to be disclosed publicly. However, in a private-public deal where the public partner is accountable to its constituency, non-disclosure of data should not be common practice. In the case of the UK SIBs, Wooldridge et al. (2019) notes that some UK commissioners believe that service providers often hold a lot of the data on impact but have no incentive to share it beyond the stakeholders involved in their SIB contract. Even when data is available, they find that the amount and template used to capture this information is not consistent across different programs and therefore not easily retrievable.

(ii) unbalanced risk-return: The estimates in Table 1 suggests that the rate of return for LCF HIBs tends to hover around 9.7%, ranging from 6% to 15%. For LCF SIBs, the rate is slightly lower at 9.1%, with a wider range of 3% to 18.5%. A recent study focusing on the Mental Health and Employment Partnership LCF SIB[8] (Hulse et al., 2023) also revealed rates ranging from 8.3% to 18.5%. Overall, it appears that double-digit rates of return are not uncommon. However, it's important to note that these rates represent the highest potential returns in ideal or best-case scenarios. While common knowledge expects no return for under-performed HIBs, but there is normally some, although low, return even in the low scenario (with principal investment normally being safe). Without available quantifiable risk data, a comparison with broader impact investment and market rates can be explored to gain further insights.

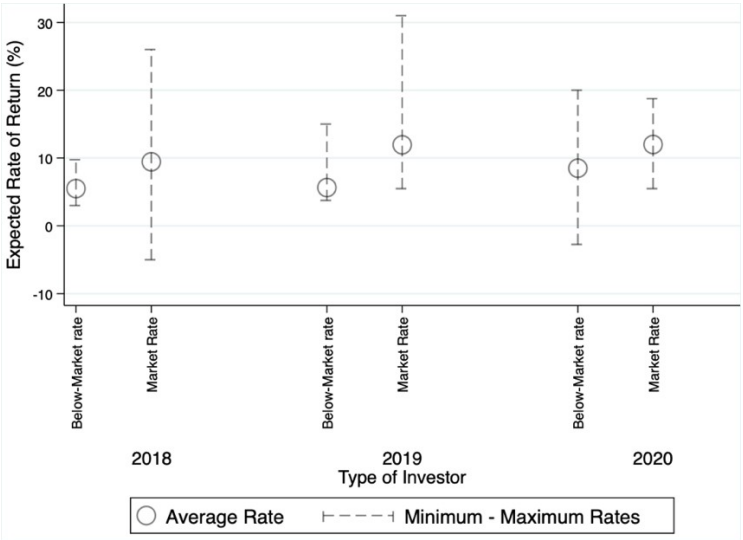
The Global Impact Investing Network (GIIN) runs annual surveys across impact investors and enquires about various aspects of their industry. The latest report (GIIN, 2020) captures data collected from 294 impact investing organisations – who collectively manage USD 404 billion worth of impact investing assets out of the total USD 715 billion industry wide. The

[7] Some of the other challenges with PPPs are identified by Loxley and Hajer (2020) and previous studies to be excessive profits for the private sector at public expense, existence of higher-than-expected risk for the public sector, and loss of public control over publicly funded assets and services.

[8] Although this particular SIB is not categorised under the 'health and wellbeing' domain by the LCF, it contains substantial health-related components that make it eligible to be considered as a HIB.

data capture was done via a survey administered between February and April 2020. This report identifies healthcare as the third-fastest-growing sector amongst investors, with almost half of respondents having some allocation to healthcare, and 51% of respondents planning to increase their capital allocations to healthcare over the next five years. GIIN (2020) also ask respondents about their realised gross returns since inception of their impact investing activity. This figure is estimated at 12% on average for debt and equity 'market rate' investors in 2020 (see Figure 8), which is higher than the average expected 'high scenario' rate for the LCF HIBs (9.7%) - as presented in Table 1. Market rate investors are those who prioritises a healthy market return on their impact investments, whereas below-market rate investors are satisfied with a lower financial return as long as there is a decent social and environmental return accompanying it. This rate is 8.5% for 'below-market rate' investors, which is lower than LCF HIB and SIB averages. Based on de Gruyter et al. (2020), most investors currently involved with SIBs are often smaller below-market return investors such as foundations (31%) or NGOs and CDFIs (58%). Unless there are specific reasons to believe LCF HIBs inherently riskier compared to typical impact investments (e.g. due to the public-private nature), the returns appear to be comparable – and maybe even higher.

Figure 8. Expected returns of impact investors (by type)



Data source: GIIN (2020)

Additionally, *capital recycling* is evidenced from the statistics displayed in Table 1. Capital recycling is a method that has been used in impact bonds, allowing investors to provide upfront funding and recycle the periodic outcome payments received from the government to continue funding service provision. This approach reduces the upfront capital needed to fund the impact bond to only a fraction of the total investment needed. The investment to outcome payment ratio for HIBs is about 22%, and 14.4% for non-health SIBs, indicating that capital recycling is occurring. This allows for heavier projects to be undertaken with just a portion of upfront investment, resulting in a lower cost of capital for investors. However, the use of

capital recycling does introduce additional risk to the impact bond, as the programme does not begin with the full capital it needs to run the service for the full duration of the programme. The programme must achieve sufficient outcomes each year to fund the consecutive ones. This risk can be mitigated through careful planning and monitoring of the impact bond, as well as the use of appropriate performance metrics to ensure that the social intervention is achieving the desired outcomes.

Beyond impact bonds, capital recycling is a financing approach that has been used in various contexts. One example is in the context of infrastructure development, where the approach is used to help fund new projects by recycling revenue generated from existing infrastructure assets. This approach is called asset recycling and has been used in several countries, including Australia, Canada, and the UK. Asset recycling can help governments generate new funding streams for infrastructure development without increasing debt levels or taxes (Casady and Geddes, 2020).

(iii) high transaction costs: The third obstacle in the way of HIBs to further scale is high transaction costs associated with setting up, implementing, managing, and evaluating an outsourced contract. As shown in Table 1, transaction costs for LCF HIBs average at 14.2% of total costs, with a range of 8.1% to 17.3%. It also appears that the share of transaction costs over total costs in HIBs are about 2.3 percentage point higher than other SIBs (14.2% versus 11.9%). The observed differences in rates appear to be primarily driven by a higher allocation towards 'management and evaluation' costs, rather than 'investment costs', which remain relatively comparable. For comparison, Pandey et al. (2018) estimate transaction costs to be around 30% of the costs in the first year in one particular SIB under study in the US, and 9.2% of total costs over the span of the project. To gain a clearer understanding of how to interpret these rates, it is necessary to consider the broader family of contracting arrangements to which HIBs/SIBs belong.

In studies on PPPs, Solino and Santos (2010) find overall transaction costs for a medium size infrastructure contract to be around 2.86% on capital value in the open procedure and 10.01% on capital value in the negotiated procedure[9]. Similarly, Dudkin and Valila (2006) estimate the amount on average to be well over 10% of the capital value of the project, excluding the additional costs of monitoring and renegotiating of the contract over its life-cycle. It is expected that PPP transaction costs are greater than standard public procurement (Blanc-Brude et al., 2006). Cebr (2013) also notes that procurement costs are especially high in the

[9] Open procedures are (i) open to any interested economic operator to submit a tender, (ii) binding and thus cannot be changed or negotiated during the procedure, and (iii) the contract is awarded on the basis of the 'most economically advantageous tender', which does not necessarily mean the one with the lowest price. Negotiated procedures are those where terms of contracts are negotiated with the economic operators. Negotiated procedures are structured into different stages, where the number of participants is reduced until the preferred bidder is finally chosen (Solino and Santos, 2010).

UK, when compared to the European Union. About the size of transaction costs in standard procurement, Peterson et al. (2019) finds using original data from 72 contracts issued by 47 Danish local government, that ex-ante transaction costs are on average around 2.7% per contract, ranging between 0.04% and 36%. So, the issue with high transaction costs is an issue shared between both HIBs and PPPs, when compared to standard procurement, but it could be even more pressing for HIBs.

(iv) lack of robust evaluation evidence: none of the LCF SIBs were planned for RCT in their design period. RCT must be designed and planned before launch to ensure that features such as data collection and randomisation among others are in place. In fact, none of the SIBs implemented in the UK has gone through a RCT evaluation. Instead, other data-driven methods, whether quantitative or qualitative, have been planned and executed. This is the same case for LCF SIBs. GO Lab (2021c) announced that there are three current evaluation studies being run on LCF SIBs, including one on the Mental and Employment Partnership (MHEP). The evaluation studies are planned to contain a quasi-experimental design where possible, mixed-methods structure, and counterfactual assessment if suitable comparators are identified (GO Lab, 2019). However, identifying an appropriate comparator continues to pose a challenge for HIBs, as highlighted in a previous study on MHEP (Gadenne et al., 2020) where attempts to find a suitable comparison group were unsuccessful. As a result, the study relied on descriptive statistics without a counterfactual assessment. Similar to the findings of Fox and Morris (2021) and De Pieri et al. (2023) regarding SIBs, LCF evaluation are also funded by government departments.

The broader literature also identifies lack of evaluation studies and empirical evidence on SIBs a major issue to understand their performance and value for money (Carè and De Lisa, 2019). Even amongst the current evaluation studies, a major concern is the lack of assessments using a comparison group (Lantz et al., 2016; Chi et al., 2018; Lazzarini et al., 2021), that is, the counterfactual, in evaluation terms. Without counterfactual, we might risk overestimating the impact of the intervention and therefore overestimate their value for money (VfM). Using counterfactual assessment allows measuring how individuals fared with the treatment, and how they would have fared without it by comparing treated subjects to a control group of individuals not affected by the programme. The absence of comparative analysis creates potential distortions in the underlying incentives of managers and investors, as the measured changes in outcomes may be caused by extraneous factors which affect outcomes but are unrelated to the intervention. Following this vein, Hulse et al. (2021) raise concerns around the rigour of evaluation studies on Non-Communicable Diseases (NCD) HIBs. Williams (2021) explores the debate on using Randomised Control Trial (RCT) in evaluating SIBs and concludes that "*RCTs are not the only reason why the SIB market has struggled, but the RCT debate exemplifies the unique challenges involved in turning social programmes into investable assets and enlisting social science methods in the creation of*

financial value." (pp. 19). On the other hand, Disley et al. (2014) points to the trade-off between the benefits from using the most robust counterfactual/attribution approach and the costs of doing so. Fraser et al. (2016) highlight the main difficulties in the processes of evaluation of SIBs such as the difficulty in agreeing what should be measured, by whom, and how often, as well as the time needed to establish the contracts to do so among the parties. They pointed out to the challenges related to the intrinsic complexity of SIBs, including the novelty of the process and the provision of innovative services. Furthermore, Lazzarini et al. (2021) explores the evaluation methods used for outcome-based contracts (OBCs) over 2008-2020 (with 85% of the observations belonging to either SIBs or DIBs), and finds that amongst the evaluation studies, 70% of them condition payments on a simple assessment of outcomes without using comparison groups. This means the evaluation studies involve no counterfactual assessment, and targets were set based on a historical baseline or an expected change departing from current measured outcomes. Amongst the rest of the studies, 54.3% used Randomised Control Trials (RCT), the golden standard of evaluation methods, 30.4% used quasi-experimental, and 15.2% used comparison to aggregate data. Most of the RCT studies are done in the US setting.

4. DISCUSSION

There are common issues that are regularly cited as major obstacles facing market development and growth of HIBs. These include (i) lack of data transparency, (ii) high transaction costs, (iii) low returns for investors, and (iv) lack of systematic evaluation methods and empirics. This study investigates the relevance of these issues using ex-ante data on a set of HIBs from LCF in the UK (Hameed et al., 2021) and other existing evidence. While many concerns, particularly regarding data transparency and evaluation evidence, are commonly expressed, there are also areas ripe for deeper investigation.

The investigations revealed a lack of data transparency, partly due to non-uniformity of regulations and culture among stakeholders. While regulations imposed by the government could help incentivise all parties to share their data, it is essential to ensure that existing collected data owned by governments is made accessible to researchers at large. The culture of transparency seems more advanced in the US compared to the UK, where even sensitive contractual information is freely available, allowing researchers to compile, analyse, and evaluate evidence independently to improve future programs.

High transaction costs concern public authorities when considering partnerships with other sectors. While we noticed a relatively high share of transaction costs in HIBs, they appear to be similar to other PPP contracts. Such costs can reduce over time with continued partnerships that build experience and trust. While considering costs associated with partnerships is important, we should not lose sight of the potential transaction benefits which

can result due to such collaborations (Kesting 2020). Also, scaling HIBs can eventually drop the share of transaction costs over total expenditure, indicating an opportunity in scaling up.

The rate of return on LCF HIBs is not significantly different when compared to the wider impact investment market. Even achieving targets below expectations generates a return, and loss of principal capital is rare. The rates also seem sensible even compared to the market[10], which should encourage impact investors to invest in HIBs, especially given that the financial return of HIBs is likely to be uncorrelated with other investments in an investor's portfolio. Hence, enabling diversification and reducing overall risk their investment portfolios. However, its logical to assume that the innovative nature of service delivery in many of the HIBs is a source of additional risk. But it is also logical to expect this risk to go down through experimentation, learning, and evidence collation.

Currently, we lack concrete evidence on the quantified risks of HIBs, hindering a clear assessment of the risk-return balance. Given this, the decision to offer added incentives, reminiscent of Australia's 2017 strategy of partial protection of principal capital, should be reserved for situations where there's a clear evidence-driven imbalance in risk-return, the program holds significant potential impact, conventional financing methods are not relevant (e.g. tight budgets in times of fiscal crisis), and ethical principles, as highlighted by Morley (2021), are consistently upheld. Delving deeper, strategies like Value-based Pricing (VbP) in healthcare might offer a promising avenue to amplify financial incentives for investors keen on supporting public health initiatives that yield tangible health improvements (Nussbaum and McClellan, 2018; Shiva et al., 2022). The estimated monetised benefits could then be used by payers (e.g. the government) to negotiate below or to the society's willingness to pay for these benefits.

Policy evaluation is crucial for promoting public accountability, learning, and increased public sector effectiveness through improved decision-making. However, lack of robust evaluation methods has been cited as a shortcoming in SIBs (Carè and De Lisa, 2019; Wooldridge et al., 2019; Hulse et al., 2021). The root of the issue is with the lack of rigor in choosing and measuring outcome metrics (De Pieri et al., 2023), lack of counterfactual with similar outcomes to allow comparability (Fox and Morris, 2021), and lack of data availability (Hevenstone and von Bergen, 2020). Apart from lack of information on impact attribution and SIBs comparability, there is also not much known about the economic validity of SIBs. This is an existing issue with other forms of outcome-based contracts (OBCs) and pay-for-performance projects (Chi et al., 2018; Lazzarini et al., 2021). VfM analysis is a key tool for assessing the economic validity of SIBs. In healthcare, VfM through cost-effectiveness has a strong track record, and the National Institute for Health and Care Excellence (NICE) in the

[10] For example, KPMG (2020) Corporate Finance recommends the use of an equity market risk premium of 6.75% as per 31 March 2020 (including S&P 500, FTSE, STOXX 600, etc.). FTSE 100 annual rate of return is reported to be 7.8% for period 1984-2019 (Dickens, 2020), and Goldman Sachs predicts a 6% average annualised return over the next 10 years for S&P 500 (Scheid, 2020).

UK provides evidence-based guidance and develops standards and performance metrics. The Quality Adjusted Life Years (QALY) metric is commonly used in healthcare evaluation and Health Technology Assessment (HTA) and is endorsed by NICE. It combines both longevity and level of health in a single measure and has a threshold price attached to it, e.g. GBP 20-30k in the UK. Using such metrics that could be consistently used across a wide range of programs could help facilitate evaluation and economic analysis by harmonising outcomes. HIBs could use such potentials better. Developing suitable metrics that enable consistent measurement of performance and comparative evaluation of HIBs is essential to exploit such potential.

Standardisation is another way that can facilitate evaluation. Even if standard HIB models are not possible, standard evaluation methods can help. The development of a set of robust evaluation models has been widely identified as one of the main drivers for the development of the HIB market. The use of scalable and replicable frameworks could potentially facilitate the implementation and evaluation of HIBs, and therefore increase the likelihood of achieving value for money for the public sector. In healthcare assessment, there are some standard evaluation methods, at least to execute and report the evaluation results. The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) and the Reference Case for Economic Evaluation developed by the International Decision Support Initiative are examples of widely accepted reporting standards (Wilkinson et al., 2016; Husereau et al., 2013). Standardised, robust, and clear evaluation studies not only help commissioners understand the effectiveness and VfM of HIBs better but also attract investors by reducing some uncertainties. The existing outcome-based methods of measuring, pricing, and evaluating programs for healthcare might give HIBs an advantage when compared to other SIBs.

5. CONCLUSIONS

Recent crises have deeply affected both global economic and health sectors (Shiva and Molana, 2021). The surge in expenditures over the past three years, primarily directed towards safeguarding public health and economic stability, has led to increased inflation and the adoption of contractionary policies. The pivotal link between a healthy populace and a thriving economy has become even more evident. Given the tight budgets and the underfunding of preventative care, governments are exploring ways not only to rebound from the COVID crisis but also to fortify preparations for similar future events (Shiva, 2020).

In these challenging times, sustaining the quality and volume of health services becomes daunting. Investing in preventative care and engaging the private sector via innovative and blended finance mechanisms might offer a short-term solution without jeopardising the long-term viability of healthcare systems. Such a strategy would harmonise the pressing fiscal

challenges with the enduring sustainability of healthcare infrastructures. However, with innovation comes new risks. Apart from the obvious financial risks, commissioners who invest in a new service take a reputational risk as well. This does not happen when they continue to fund an existing and conventional service, even if ineffective. As John Maynard Keynes has famously said "*Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally*" (Keynes, 1936; pp. 80).

Governments should not only regulate existing markets, but they should co-create markets by involving private investors in activities which have the highest positive impact on society (Mazzucato and Ryan-Collins, 2019; Laplane and Mazzucato, 2020). Mazzucato and Ryan-Collins (2019) argue that "*public value creation must involve the public sector setting a direction and public purpose for private and public actors to collaborate and innovate to solve societal problems*" (pp. 14), meaning for the government to take a 'market-shaping' and 'market-creating' role rather than a 'market-fixing' role. How states build back their economies post-COVID, and how they plan to cover the huge costs involved are key discussions that will shape our societies and economies over the decades to come and beyond.

Harnessing the power of the private sector through innovative, result-based, and collaborative models, hold the potential to support building back better by turning the focus to improving outcomes rather than activities or process. However, drawing from experiences with HIBs, current evidence highlights significant obstacles, namely: (i) lack of transparency, (ii) unbalanced risk-return, (iii) high transaction costs, and (iv) lack of robust evaluation evidence. This study specifically identifies the lack of transparency and the need for stronger evaluation evidence as primary concerns. However, the arguments regarding unbalanced risk-return and high transaction costs seem less firmly grounded. Creating a more transparent impact community will allow the field to further mature by sharing lessons learned, identifying best practices, and further disseminating evidence-based approaches to population health improvement. This enables further studies to be launched and more evidence to be shared. There is a need for more high-quality studies, particularly on economic evaluations and greater transparency from both the public and private sectors, in order to ensure improved HIBs. At the same time, further studies could try to develop a dashboard that is useful for the evaluation of the appropriateness of a particular HIB as well as attempt to analyse the contractual models under the lens of the risks detected by all involved stakeholders and how they are managed under a situation where there is conflict of incentives between stakeholders (i.e. principal–agent problem).

Furthermore, by capitalising on the existing measurement and evaluation methods widely employed in healthcare research, HIBs possess distinct advantages over other SIBs. Some of the potential advantages include: existing standardised outcome metrics (e.g. QALYs), innovative outcome pricing methods (e.g. VbP), standardised evaluation guidelines (e.g.

CHEERS), comprehensive datasets (e.g. Public Health's Fingertips or NHS's HES databases for the UK). In addition, public health evidence has evolved to enable the calculation of probability, risk, and uncertainty – the necessary methodologies to predict and evaluate impact, and develop HIBs (Rowe and Stephenson, 2016).

Moreover, HIBs payments are guaranteed by the public sector which, similar to bonds, make them relatively low risk investments (the risk of payment guarantee and default of the payer and not the risks associated with achieving targets). Therefore, in low yield environments and under economic periods of contraction, they could become more attractive even to market-oriented investors chasing yield. This is because HIBs are uncorrelated with the market given their payment arrangement with the public sector.

With sufficient political will, HIBs could theoretically augment resources, especially in the short to medium term, to bolster vulnerable and underfunded programs like preventative care. Yet, practical evidence indicates that the absence of transparency and solid evaluation evidence may have established barriers, impeding further expansion.

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Tables

Table 1. Comparison of HIBs to other policy domains within the LCF

	LCF – Total (excluding Health & Wellbeing)	**LCF – Health & Wellbeing**
Average values per user[1] per year		
Outcome payment [2]	GBP 5,825	GBP 604
Total investment	GBP 836	GBP 133
Transaction Costs[3]	GBP 786	GBP 112
Management and evaluation	GBP 309	GBP 56
Investment costs[4]	GBP 477	GBP 56
Share of selected cost components as a percentage of total costs[5]		
Share of transaction costs over total	11.9% [5.7, 24.3]	14.2% [8.1, 17.3]
Management and evaluation	4.7% [0.9, 11.4]	7.1% [2.9, 9.4]
Investment costs	7.2% [0.8, 14.8]	7.1% [4.1, 12.1]
Rate of return [min, max]	9.1% [3, 18.5]	9.7% [6,15]
Number of SIBs [6]	26	5

Source: Hameed et al. (2021).

This data is ex-ante and based on expectations, so some of the figures might change over the course of the programme; ** average values are based on project level estimates. * Details of the projects are described in Hameed et al. (2021).*

[1] *users who are expected to engage with the programme rather than all referred users.*

[2] *Total outcome payments by local commissioners and LCF.*

[3] *Transaction costs are defined here as the total of management costs, evaluation costs, and investment costs.*

[4] This includes costs associated with investment (e.g., procurement etc.).

[5] Total cost is the sum of outcome payments, management costs, evaluation costs, and investment costs.

[6] Hameed et al. (2021) includes 31 SIBs, of which one is withdrawn so far.

Appendix I.

Table A1. List of Launched HIBs[1]

	Impact Bond Name	Launch year	Main issue	Total investment in 2021 USD[2] [Total investment in local currency]	Targeted service users or beneficiaries	Country
1	Chances	2020	Healthy living	USD 1,356,600 [GBP 1,000,000]	6,720	UK
2	Gloucestershire Positive Behaviour Support	2020	Learning disabilities in children	USD 203,400 [GBP 150000]	10	UK
3	Nene	2020	long term health conditions	USD 3,934,100 [GBP 2900000]	10,190	UK
4	Norfolk SIB for carers	2020	Social carers	USD 3,391,500 [GBP 2,500,000]	6,505	UK
5	Mental Health and Employment Partnership (MHEP)[3]	2016-2020	Mental health and unemployment	USD 2,169,900 [GBP 1,585,000]	5,750	UK
6	Pause for Change	2019	Women wellbeing and pregnancy	USD 1,977,300 [GBP 1,429,000]	176	UK
7	Enhanced Dementia Care Service	2019	Dementia	USD 588,000 [GBP 425,000]	600	UK
8	Sheffield Promoting Independence	2019	learning and physical disabilities	USD 1,037,700 [GBP 752,000]	113	UK
9	End of Life Care Incubator [4]	2018-2019	End of life care	USD 5,445,400 [GBP 3,870,000]	6,400	UK
10	Cornwall Frequent Attenders Project	2018	substance misuse	USD 574,400 [GBP 407,000]	705	UK
11	Improving HIV Treatment SIB (Elton John AIDS Foundation)	2017	HIV prevention and treatment	USD 1,439,600 [GBP 1,000,000]	1,250	UK
12	Reconnections Worcestershire	2015	Loneliness amongst elderly	USD 1,273,100 [GBP 850,000]	3,000	UK
13	Ways to Wellness (Newcastle)	2015	Long-term conditions	USD 2,471,300 [GBP 1,650,000]	8,500	UK
14	The Blood Bank of Delmarva Young Blood Sustainability Project	2018	Recruiting new blood donors	USD 477,500 [USD 450,000]	500	US
15	South Carolina Nurse-Family Partnership Pay for Success Project	2016	Early childhood development	USD 19,320,000 [USD 17,500,000]	3,200	US
16	Strong Beginnings Pay for Success Project	2016	High-risk pregnant women	USD 9,384,000 [USD 8,500,000]	1,700	US
17	Fresno’s Asthma Impact Model (AIM4Fresno)	2013	Chronic asthma	USD 3,391,500 [USD 1,760,000]	3,200	US
18	Colorectal Cancer screening in Hiroshima Prefecture	2018	bowel cancer screening	USD 61,900 [JPY 6,630,000]	1,479	Japan
19	Hachioji City SIB on Increasing the Rate of Residents Receiving Bowel Cancer Screenings	2017	Colorectal Cancer	USD 84,500 [JPY 8,874,000]	12,000	Japan
20	Kobe City SIB for Preventing Severe Diabetic Nephropathy	2017	Preventing severe diabetic	USD 249,500	100	Japan

			nephropathy	[JPY 3,114,000]		
21	Cuidar de Quem Cuida	2019	dementia	USD 281,700 [EUR 239,660]	240	Japan
22	Cancer and Work Health Impact Bond	2017	Cancer	USD 782,800 [EUR 640000]	138	Netherlands
23	Resolve Social Benefit Bond (New South Wales)	2017	Mental health	USD 5,455,000 [AUD 7,000,000]	530	Australia
24	Auckland Mental Health SIB	2017	Mental health	USD 1,104,000 [NZD 1,500,000]	1,700	New Zealand
25	Preventing Type 2 Diabetes	2016	Diabetes	USD 6,854,000 [ILS 19,400,000]	2,259	Israel
26	Community Hypertension Pervention Initiative	2016	Hypertension	USD 2,465,000 [CAD 2,900,000]	7,000	Canada
27	Epiqus Työhyvinvointi I ("Tyhy-SIB") (Epiqus Occupational Wellbeing)	2015	wellbeing of public sector employers	USD 1,908,000 [EUR 1,500,000]	1,300	Finland

[1] Data is up to end of 2020, retrieved from GO Lab (2021b), Hulse et al. (2021), de Gruyter et al. (2020), and Care and Farraro (2019). Development Impact Bonds are excluded due to fundamental differences in the model. Additionally, three Russian HIBs are excluded due to lack of information; HIBs that were withdrawn for any reason are excluded, e.g. Healthier Devon was withdrawn in 2020 due to COVID induced lockdown measures.

[2] Inflation rate is taken as 2% per year to adjust nominal costs for 2020.

[3] Mental Health and Employment Programme (MHEP) is delivered through two separate outcome funds, namely Commissioning Better Outcomes (CBO) and Life Chances Fund (LCF), consisting of multiple HIBs across various localities.

[4] End of Life Care Incubator is consisted of three separate HIBs based on sites, namely Waltham Forest, North West London, Hillingdon