
**FUTURE
PLANET
CAPITAL**

THE WEI *FORWARD* REPORT

**IMPACTFUL INVESTING FOR PRACTITIONERS
IN A POST-PANDEMIC WORLD**



**By LORD WEI commissioned by
FUTURE PLANET CAPITAL**

Contents

Acknowledgements	4
Foreword by Lord Wei of Shoreditch	5
Foreword by Douglas Hansen-Luke	6
Introduction	7
Executive Summary	8
Summary recommendations	10
Recommendations for venture stage impact investors	10
Recommendations for Government	10
Recommendations for limited partners	10
Recommendations for individual investors	11
Recommendations for activists and consumers	11
Definitions	12
Chapter 1: Growth of impact investing in VC to date and emerging issues	14
1.1 Impact investing within the broader landscape	14
1.2 Investor perspectives: Should impact shape investment?	16
1.3 The SDGs as a common framework for impact investors	19
1.4 Impact measurement at different stages of the investment process	20
1.5 The dynamics of investing and selling and how these might affect impact	25
1.6 Analysing the different capacity load of impact tools	26
1.7 Impact-washing: Problems posed and potential solutions	28
1.8 Recommendations	30

Chapter 2: Towards a practitioner-friendly approach - The Impact Value Gap	33
2.1 Impact management frameworks	33
2.2 Measurement as a barrier to entry	36
2.3 Cutting edge 'light-touch' impact measurement: The Impact Value Gap	36
2.4 Intrinsic Motivations: The importance of a founder's desire to do good	39
2.5 How measurement affects the behaviour of VCs, investors and founders	41
2.6 How stakeholders can accelerate impactful innovation	42
i. The role of Government in impact investing	42
ii. The role of limited partners (LPs) in impact investing	45
iii. The role of pension funds as impact investors	46
iv. The role of retail investors in impact investing	47
v. The role of activists and consumers in impact investing	48
2.7 Recommendations	50
Chapter 3: Future research for holistic, practitioner-friendly impact	53
3.1 Exploring how the findings vary when focus is applied to different regions	53
3.2 The use of Artificial Intelligence and developing technologies to verify impact	54
3.3 The power of inspiration	55
3.4 Envisioning a behavioural approach to understanding impact investment	55
3.5 Recommendations for future research	57
In Conclusion	58
Appendix	58
Bibliography	78
Abbreviations and Glossary of Terms	87

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Foreword

Lord Wei of Shoreditch

Dear Reader,

I am delighted to co-author this preliminary report on impact investment. As the unprecedented levels of change inflicted by the COVID-19 pandemic continue to be felt and we reflect on the environmental commitments made at COP26, it is clear the world needs to accelerate its innovation and development processes to protect our planet and the human race.

Innovation and new, disruptive technologies are critical in making progress towards the Sustainable Development Goals (SDGs) and the climate-specific pledges made at COP26. Whilst there has been admirable progress in so many areas, the fact remains that today the technologies simply do not exist to achieve Net Zero in the developed world, or to combat the next pandemic more effectively than we have done this one. World leaders have talked the talk; now the researchers, engineers, business leaders and investors need to walk the walk for them.

The Wei Forward Report calls for a concerted effort to be made by all these stakeholders to unlock impact investment, since experience tells us the greatest technological progress is made by young start-ups, not market leaders whose main aim is to protect the status quo. Backing innovative solutions to solve pressing issues requires collective action. Government should look to play a larger role as a procurer of innovation and encourage impactful venture investing with green and impact-oriented tax breaks. Pensions industry regulators should take a more balanced risk approach and favour impactful investing. To not do so, given the societal and planetary risks we face, is a risk itself; one that the regulatory system should be accountable for, alongside protecting the immediate financial returns and assets of members. Finally, it is essential that society and the general consumer plays a more active role in holding legislative, ruling and regulatory bodies to account, using tools such as the Companies Act 2006, Section 172. All too often we have seen company directors and boards knowingly ignore their duty to help society and the environment, in favour of ill-gotten benefits for a few, just as big tobacco did decades ago.

The investment community must look at how best to scale the field of impact, transforming it from a niche historically less focused on profit, to a mainstream practice centred around high impact, high profits and large global funds. Doing so may require adapting and simplifying approaches; as Tom Beagent, a leading expert in impact at PwC, rightly says: "All investments make impact, good or bad – impact investing is about creating more positive impact." This transition may also require a reconciliation in academic research between what works practically on the ground for investment professionals and entrepreneurs, and what drives them both financially and socially; to align incentives amongst the investors, and the investors and the market.

I would like to pay tribute to Douglas Hansen-Luke and the team at Future Planet Capital (FPC), who have exemplified a pragmatic approach to creating impact, marrying profit and purpose. Whilst the marked growth of impact and Environmental, Social and Governance (ESG) considerations among investors is encouraging and actors, like FPC, look to generate positive change, we, as an investing community, should remain mindful not to overpromise.

Please note that several contributors to this report have shared views anonymously. In the current climate it is not always possible to share personal opinions publicly. We felt it was important to disclose these anonymised views so that we may propose practical solutions generated from all insights available to us.

Much of the responsibility for pushing impact investing rests with VC investors and founders. However, the potential for policy makers, regulators, LPs, pension funds and consumers to play an influential role in bringing impact to mainstream adoption must be recognised and harnessed. I hope The Wei Forward Report is the beginning of a practical conversation about how we may all endeavour to deliver this change.



Lord Wei of Shoreditch
ADVISORY BOARD

Foreword

Douglas Hansen-Luke



Douglas Hansen-Luke

CHAIR OF FUTURE
PLANET CAPITAL

It is now natural to assume that VC and impact are a natural fit. In fact, until 2021, the vast majority of American, British, Chinese or Israeli VCs would have shunned the connection.

The key development in the last year is that there is now a general recognition that science and centres of innovation have a fundamental role in addressing global challenges and that the government and private sectors can materially accelerate and scale the impact of their work. Such centres of innovation are already impactful, but it is the role of venture capital, with its roots in those same ecosystems, to make them profitable as well. The discipline of profit is essential to both impact and innovation. For it is profit that rewards scientists and founders for continued innovation and, more importantly, it is profit that will provide the necessary resources for the rapid roll-out of solutions to address the world's greatest challenges and provide a fulfilling and sustainable future.

I have always believed in the power of profit and purpose; creating channels for large scale investment to back the best brains tackling the biggest global issues. Future Planet grew out of a desire to build a fund that makes a difference. As such, I welcome this report, and I am extremely proud to be part of a movement putting these ideas into practice.

I look forward to working with other interested parties in the future, collaborating with this growing community to help build the infrastructure necessary for monitoring, measuring and supporting impact orientated practice. Coordinated group action is needed to accomplish the SDGs, and the \$2.5 trillion of investment per annum necessary to do so presents both challenges and opportunities, which investing communities must navigate.

With the many reports on impact and ESG, some might question why we need another. This report looks to make a unique contribution to the field in its concentrated focus on practice and practitioners. It looks to explore the practical lessons that can be learned from the perspective of an impact investor, as well as those interested in supporting the growing VC impact sector.

This report sets out some preliminary recommendations for the field. These recommendations, grounded in research and internal discussion, are presented as suggestions designed to improve and accelerate the adoption of impact within the VC sector. These are not hard and fast instructions. Further work will be needed in the coming years to build on and test these recommendations, refining them into workable practices and tools. However, I am sure that this report will help guide both established actors in the impact space, as well as new entrants, in shaping a positive post-pandemic world.

We, at Future Planet Capital, hope this is the first of many reports.

Introduction

This report reviews contemporary literature surrounding impact investing and synthesises this secondary research with new evidence obtained through interviews with relevant academics and industry representatives.

Chapter 1 surveys the history and evolution of impact investing at the venture stage, illustrating how different attitudes towards the relationship between profit and impact have shaped a number of approaches, including approaches to different measurement methods. The chapter concludes by highlighting some of the issues that have materialised in this nascent field.

Chapter 2 investigates how the issues surrounding impact measurement can be addressed pragmatically, using Future Planet Capital as a case study, before taking a broader view of the venture stage impact investing industry. The chapter then presents suggestions as to how a range of stakeholders, not just the entrepreneur, can act, with or without motivating extrinsic levers, to accelerate impactful ventures.

Chapter 3 looks to the future of impact-based VC. It examines how new and developing research avenues might shape the journey towards holistic impact; both intrinsically and extrinsically, within both first and second-order actors. It acknowledges the need for further research into areas outside of the Anglosphere and explores how AI and digital technologies will influence impact processes and innovation, harnessing extrinsic levers. It concludes with a study into the power of intrinsic motivations and how Agent-Based Models (ABMs) can be used to help us better understand investment decisions from a behavioural stance.

Whilst this report sets out to be a broad study, there is particular focus on the 'hot topic' of measurement within impact investing. PitchBook's 'Sustainable Investment Survey' of LPs, GPs and service providers, many of whom identified as VCs, found the most pressing perceived challenge facing the field to be an uncertainty and lack of clarity in how to define and measure impact outcomes (Wiek, 2021a). There are notable areas and aspects of the practice which require further study and we hope that our concluding chapter will provide some directions of travel to address these.

Recommendations are offered at the end of each chapter. Chapter 1's recommendations are for impact investors only. Chapter 2's recommendations are grouped by stakeholder within a given venture innovation ecosystem. The final set of recommendations is directed at all interested parties wanting to channel profitable and innovative investment towards developing a better understanding of impact and venture.

Executive Summary

Chapter 1: Growth of impact investing in VC to date and emerging issues:

- 1.1. The responsible investment sector has grown from humble beginnings to become a multi-trillion dollar industry.
- 1.2. There are at least 6 meta-approaches to impact investing. These range from those who do not believe limits should be placed on investment decisions, to those who believe in very specific measurement-led approaches, even if that sacrifices returns in the short term.
- 1.3. For venture investors intent on generating impact, the SDGs have, despite challenges, been one of the more successful and influential frameworks incorporating metrics, providing a practical overview of the different objectives that impact can have.
- 1.4. In order to understand how impact can be gauged in a practical sense, it is crucial to differentiate between how impact is approached and understood at the different stages of venture investment. As a rule of thumb, the more mature a company is, the more tools it can use to measure its impact.
- 1.5 The effects of buying and selling on impact must be considered. Impact can sometimes take a back seat in deals as a result of these complex mercantile behaviours.
- 1.6 The metrics used at each of the venture stages generate different amounts of work. We need to reconcile academic research and current interest in measurement with the practical needs of investment professionals and entrepreneurs on the ground.
- 1.7 There has been growing criticism of the use of ESG principles in investment industries. ESG is accused of being too broad with 'impact' being used for PR purposes only, without actually addressing pressing global issues (impact-washing).

Chapter 2: Towards a practitioner friendly approach - The Impact Value Gap

- 2.1 To address some of the issues resulting from attempting to marry impact and investing, the Impact Management Project has acted as a forum for investors, outlining norms for communicating the impact goals of a strategy and constructing a portfolio to meet them.
- 2.2 Measurement itself can create a load which is not always considered by those advocating metrics, creating barriers to entry for participants. Using the IMP's framework, a number of practitioners have started to evolve a lighter-touch screen at time-critical moments of investing, with scope for more accurate measurement as portfolio companies mature. This balances the need to be pragmatic without succumbing to impact-washing.
- 2.3 Practitioners have been combining the frameworks provided by the SDGs and IMP with 'impact monetisation' to create impact measurement processes that seem to reduce the workload.

- 2.4 Much focus has been on external levers to create impact within industry and management teams, governance and regulation. However, interviewees contributing to this report stressed that a key dynamic in delivering impact is intrinsic motivation; you cannot force companies to do good, they must be motivated from the top down.
- 2.5 There is an important question surrounding to what degree measurement affects, or should affect, behaviour, particularly of the VCs, investors and founders.
- 2.6 It is important to understand how cluster participants can play a greater role in accelerating impactful ventures. Key to this is exploring how governments, regulators, limited partners, consumers and activists can help create and shape impactful innovation.

Chapter 3: Future research for holistic, practitioner-friendly impact

- 3.1 There is a need to investigate how research findings vary when looking at different geographical regions. The diverse nature of their investment ecosystems will undoubtedly operate to different effects.
- 3.2 Future research might explore the role of Artificial Intelligence and emerging technologies in verifying and reporting real-time impact.
- 3.3 There is real value in mentoring investment actors to create pivots and alternative, impact-orientated paths for founders and their boards.
- 3.4 Future research could look at envisioning a behavioural approach to understanding impact investment using Agent-Based Modelling (ABM).

Summary recommendations

Recommendations for venture stage impact investors

- Use the SDGs, where appropriate, as a set of universally accepted desirable outcomes, towards which impact investments could be targeted and on which impact methodologies could be based.
- Consider the stage of the investment cycle, choosing the appropriate metric(s) and using different approaches to measurement for different stages of investing.
- Ensure that the impact tools and processes employed are rigorous, but light-touch enough to accommodate the time-constraints and competitiveness of VC deal-flow.
- Be aware that the industry has a negative bias against impact forecasting; adapt measures to make it easier to adopt them, and remember impact investing is still nascent.

Recommendations for Government

- Learn from the successes of arms-length arrangements, like DARPA, and build narratives to deploy funds into high-risk, innovative industries looking to tackle global issues, such as climate change.
- Develop effective regional first-loss mechanisms and encourage regional governments to take on high-risk innovative products and services as first customers, distributing the risk of failure.
- Adapt legislation to make it possible for government bodies to procure more easily from start-ups, who may have a short trading history or be seen as higher risk. This may mean setting aside a defined % of procurement budgets in order to trial new entrants.
- Look to introduce green tax breaks for VC funds, pension funds and individual investors and consumers.
- Invest in venture stage impact investors who have already developed rationalised processes.
- Reward civil servants and procurement leaders, who have enabled trials of new impact technologies, with lottery-style, life-changing prizes.
- Open public institutions up to privately funded proof-of-concept pilots. This will increase the commercial momentum of nascent, high-impact potential solutions to global problems.
- Invest in innovation clusters to provide entrepreneurs with the necessary environment and resources to commercialise impactful innovation.

Recommendations for limited partners

- Adopt a holistic view of returns. The economics of VC are very well aligned between LPs, asset allocators and VC funds, with each element of the value-chain aligned to ensure that each decision maximises returns. There is room here for LPs, as

providers of capital, to demand that they see a return on impact alongside financial return.

For pension funds as limited partners in VC

- UK and other national pension funds need to allocate a small portion, less than 5%, to venture, and accept higher management fees, where returns justify doing so, for this asset allocation. This would be transformational for ventures in Britain and solve the current growth stage shortage of capital
- For this allocation, pension funds might also be willing to bear longer horizons and higher risk, recognising the prospect of an outsized long-term return.

Recommendations for individual investors

- Invest in VCs directly or ensure that the institutions in which they are involved, such as endowments, pension funds and sovereign wealth groups, give more regard to ESG and impact.
- Retail investors can better understand their personal exposure to non-impact and non-ESG aligned investments, demanding products which allow them to express impact and ESG values in their investments.

Recommendations for activists and consumers

- There is room for test cases to create a precedent for directors to be made liable for their companies' negative impact.

Definitions

Please see below for a list of definitions for terms as we understand them.

ESG: A set of criteria and standards that characterises, and accounts for, the environmental, social and governance implications of businesses' processes and practices, positive and negative, be they intentional or otherwise.

Impact Investing: A concentrated and coordinated investing strategy designed consciously to produce positive impact, whilst achieving a financial return. An important distinction is to be made here between unconscious impact and concerted efforts. Those who create positive impact unknowingly and unintentionally, as many large companies do, must be distinguished from those who consciously seek impact as investors. The Global Impact Investing Network understands impact investing to be an investment, "made into companies, organisations, and funds with the intention to generate social and environmental impact alongside a financial return" (The Global Impact Investing Network, 2016, p.30); "arguably the most accredited and quoted" definition (De Amicis et al., 2020, p.2).

Holistic Impact: A dual faceted conceptualisation of impact, consisting of intrinsic and extrinsic motivations leveraged by both first and second-order actors within the investment ecosystem.

CHAPTER 1:

GROWTH OF IMPACT INVESTING IN VC TO DATE AND EMERGING ISSUES



Chapter 1: Growth of impact investing in VC to date and emerging issues

Chapter 1 surveys the history and evolution of impact investing at the venture stage. The section illustrates how different attitudes towards the relationship between profit and impact have shaped a number of approaches, including to different measurement methods. The chapter concludes by highlighting some of the issues that have materialised in this nascent field.

1.1 Impact investing within the broader landscape

The wider responsible investment market has grown massively from humble beginnings.

Responsible and SDG-aligned investment is now a \$100 trillion+ dollar industry (Jeucken et al., 2020)¹, with a global reach. Impact investing lies within this responsible investing landscape, though it is also a standalone phenomenon. Impact investing can trace its origins back to the early 2000s², through the integration of program-related investment and sustainable investing³ (Trelstad, 2016). Impact investing differentiated itself from other forms of responsible investing in its focus on proactive and positive difference, whilst retaining financial returns. More established practices in the investing landscape, such as ethical investing and socially responsible investing (SRI), can be distinguished⁴ from the relative newcomer, impact investing, in their focus on exclusion of harmful companies through negative screens. Quinn and Munir, write that unlike ethical investing or socially responsible investing (SRI), “which focuses on the negative screening of alcohol, tobacco, and firearms, and a range of businesses and activities which do not damage society,” impact investing positions itself as, “taking a proactive approach actively identifying businesses with the intent to achieve a financial return and create a positive social or environmental impact.” (2017, p.6).

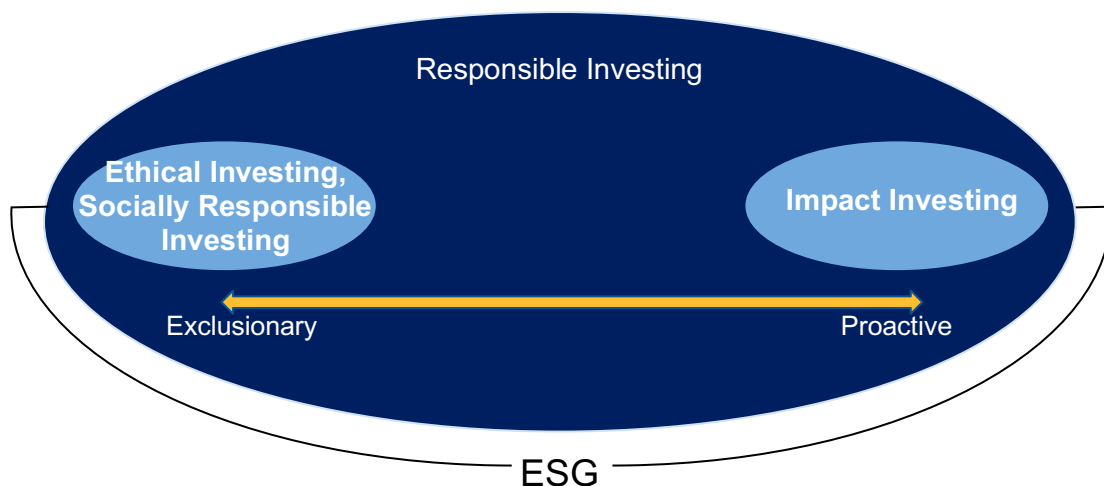
The landscape can be visualised according to Douglas Hansen-Luke, Executive Chairman at Future Planet Capital (FPC) and a practitioner of over 20 years, as seen below:

¹ A recent report, *‘Investing with SDG Outcomes’*, published by the United Nations’ Principles of Responsible Investment (PRI), represents a commitment from signatories and investors of \$100 trillion in Assets Under Management (AUM). See also (Lenhard & Winterberg, 2021).

² See (Trelstad, 2016) for a history of impact investing.

³ See (Ross, 2020, pp.1-24) for a history of sustainable investing.

⁴ See (Agrawal & Hockerts, 2019) for an in-depth analysis of definitional elements of impact investing and a responsible investing taxonomy.



Source: Original material from Shadbolt, Hansen-Luke & Wei (2021)

The Global Impact Investing Network (GIIN) estimated that the Assets Under Management (AUM) of the impact investment sector were \$715bn in 2020 (Hand et al., 2020). This impressive growth of the wider impact sector has been mirrored by a rise in interest surrounding a smaller portion of these assets - impact investing at the venture stage. A report from SVB Financial Group, which banks half of all venture-backed technology and life sciences companies in the US, and Campden Wealth, found that there is “significant and growing interest” in impact orientated VC investment (2020). This observation is corroborated by findings from Different Funds, who report that the percent of capital being raised by ‘Impact/ESG VCs’ in the US has grown from just over 2% in 2015 to 7.9% in 2020 (Shehata & Tasto, 2020). This data and increasing adoption is encouraging, with impact VC traditionally being treated with caution, especially in the US⁵. The Wei Forward report focuses on this ‘impact in VC’ portion of assets. Whilst many of the ventures discussed may become public listed corporations with ESG concerns, this report primarily discusses the role of venture in supporting impact.

Within the venture sector, there are many different approaches to impact investing, and to establishing a balance between impact and financial returns. Brian Trelstad, in his 2016 paper, warned against “the potentially limitless combinations and permutations of financial and impact goals.” (p.13).

Based on our analysis, attitudes towards how the potential to make a positive impact should shape investment decisions seem broadly to fall into at least six distinct approaches.

⁵ A major driver for negative perceptions of impact VC came from the cleantech burn of Kleiner Perkins Caufield & Byers. See <https://digital.hbs.edu/platform-rctom/submission/weathering-the-storm-kleiner-perkins-and-the-tragedy-of-clean-tech-venture-capital/>

This experience is still cemented in many US investors’ minds, with impact’s reputation still recovering for some.

1.2 Investor perspectives: Should impact shape investment?

Venture Capital approaches to impact investing tend to fall within a spectrum between two extremes⁶. At one extreme, there are those who believe that impact and investing are incongruous, that limits should not be placed on investment decisions, and that impact should only be sought through philanthropic endeavours, if at all. At the other end of the spectrum, there are those who believe in very specific measurement-led approaches as a means to achieve impact goals, even if that means sacrificing returns in the short or longer term. Below we have highlighted some of the approaches identified so far from discussion with various investors within the impact space, and how they differ in their relationships towards impact and financial returns. It should be noted that these are not impact philosophies, rather philosophies of investors in relation to impact.

A) VC investors should not worry about impact:

- The VC investor should not be worried about impact. Philanthropy and government policy ought to take care of impact, whilst the pursuit of profit will itself lead to positive externalities (e.g., employment, research and development spending)⁷ as an unintended by-product.
- The VC investor should only be concerned with making financial returns and the entrepreneur should focus on addressing consumer demand profitably.
- By considering impact, VC investors limit their horizons, potentially making less money and restricting the types of assets and opportunities they can back.
 - The Draper philosophy, according to one partner, seeks not to be limited on the for-profit side by sector or theme - hence the distinction between Draper Associates and Draper Richards Kaplan Foundation, the former being profit driven, the latter impact driven.
- The bottom line: VCs have fiduciary duties to their limited partners (pension funds, endowments, foundations, state funds, family offices etc) to focus on generating the highest returns possible; impact is a distraction from this focus.

B) VC investors achieve impact by avoiding companies that 'do harm':

- Companies with the potential to do harm should be avoided by VC investors (or the harm should be mitigated, for instance by applying a (certain kind of light) ESG lens).
- VC investors do not sacrifice financial gains in excluding those options that do harm.
- A number of the interviewees for this report held the following view:
 - "Impact is an exclusionary strategy rather than a focused strategy. Avoiding harmful deals means you have an impact." - Professor Jerome Engel, Founding Executive Director Emeritus and Senior Fellow at the Lester Center for Entrepreneurship and Innovation, UC Berkeley.

C) VC investors should have a holistic view of impact returns because impact drives returns, whilst particular focus must be given to harnessing capital to solve global challenges:

⁶ This 'Spectrum of Capital' model is consistent with existing research by groups, such as the UK National Advisory Board On Impact Investing (2019), the Implementation Taskforce on Growing a Culture of Social Impact Investing in the UK (2019), Bridges Fund Management (2015), The Impact Management Project and the Impact Investing Institute (2020b).

⁷ See (Gornall & Strebulaev, 2021) for a study into the associated impacts of VC.

- VC investors should consider both impact and financial returns, giving equal consideration to both, without sacrificing either.
- VC impact investors generate greater returns because impact drives returns. As challenges, costly to people and the planet, are solved, new markets are often created to provide investor returns.
- By finding and investing in the most impactful companies, impact acts as a risk mitigant (e.g., against future regulation or civilisational collapse) and a source of competitive edge. If an investment has holistic value then it is much less likely to fade due to a lack of relevance or competitive pressure.
 - “Companies are likely to be more resilient in the face of unexpected shocks and hardships if they are managed for the long term and in line with societal megatrends, such as inclusion and climate change.” (Serafeim, 2020)
 - One interviewee noted that this stance may become the more mainstream approach in the coming years; impact investing in certain sectors, such as clean tech, carbon and sustainable consumption, may well be the major driver of returns.
- A number of the interviewees concurred with the following view:
 - “Invest in the companies that are going to do the most good. The more good you produce, then the greater your returns and rewards.” - Douglas Hansen-Luke.

D) VC investors should care about impact. Even if investors make lower immediate financial returns they will potentially earn outsized returns over a longer time-period:

- VC investors must recognise that impactful technologies often bear a price-premium and that the immediate economic argument is not as compelling as alternatives.
- VC investors must, therefore, be willing to take lower immediate financial returns and higher initial risk as new markets are created.
- Over time, early mover advantage can potentially give VCs, investing in this way, a defensive position, as the cost of activity falls and success stories attract capital from impact orientated investors.
 - “There are trends towards firms that are purpose driven. That purpose inherently has a positive impact and so their products and services are more likely to be in demand.” - Oliver Sexton, Investment Director at Future Planet Capital and UKI2S.

E) VC investors can back new solutions that initially command a premium, but will need help from third parties, such as government, to make up any initial shortfall, in effect getting paid for impact outcomes:

- VC investors should be willing to enter sectors and themes that attract subsidies from government to solve problems such as climate change⁸.
- VC investors and entrepreneurs need to work with those in government and civil society to create systems for the trading of outcomes, such as carbon credits⁹, to help underpin such investments

⁸ See Section 2.6 for how governments, LPs, pension funds and retail investors can encourage this.

⁹ See The Department for Business, Energy & Industrial Strategy’s recent guide to ‘Participating in the UK ETS [Emissions Trading Scheme]’ - 29 September 2021 at: <https://www.gov.uk/government/publications/participating-in-the-uk-ets/participating-in-the-uk-ets>

- “If the customers aren’t willing to take a risk and buy this alternative (i.e. for a green premium), the corporation can only go so far. There is a role for government to intervene here.” - Jerome Engel

F) VC investors should ideally aim for sustainability, accepting grants and subsidies if necessary, as the benefit to humanity is worth the potential losses to individual investors:

- There are certain issues that, whilst they are subscale and may never be fully profitable, would benefit from being addressed by VCs and entrepreneurs. These issues include research into rare infectious diseases or the challenges of resource curses and bad governance; issues which need innovation even if capital is not accessible upfront or on an ongoing basis.
- The challenge for VCs, in this instance, is to find and back investments that generate considerable impact but which are marginal from an investment perspective and merit longer term subsidy from government or philanthropic sources.
- As one interviewee highlighted, this approach requires rigour around metrics and navigation of how much return to sacrifice for impact through the social ventures involved.

There have been efforts to characterise the different impact approaches and philosophies of investors. Whilst the work of Bridges Fund Management (2015) and the Impact Investing Institute (2020a) are commendable frameworks, the attempts to segregate approaches from the top down are at risk of missing the nuance of different positions in practice. Rather than placing a stance in a distinct silo, our spectrum aims to highlight subtle differences and trade-offs between positions taken from investors; a pragmatic bottom up approach which allows for investors to straddle more than one philosophy or lie somewhere in between two.

Each of these six approaches has advantages and disadvantages. Those that place the greatest priority on profit (A) might generate the greatest returns, enabling investors to harness and reinvest profits to compound positive impact. Equally, such investments might inadvertently cause negative externalities, or profits may not be reinvested towards positively impactful causes. Those approaches that accept lower returns, might struggle to attract capital long-term, minimising the amount of absolute impact they can ultimately create (F)¹⁰. Future Planet Capital purports to sit somewhere around C and D on the spectrum, subscribing to the philosophy that impact drives, potentially outsized, returns and neither should be sacrificed in pursuit of the other.

One interviewee emphasised the need for a shift within the impact investing community to a more forward-looking mindset; to move away from thinking about the practice as a compromise between impact and profit, “The need is the opportunity; there is no compromise.” Rather than looking backwards at returns, the interviewee, a managing partner and founder of a sustainable investment company, encouraged investors to look forward strategically in order to manage the “enormous need and enormous opportunity” found in the increasing rate of change in the landscape.

¹⁰ Contrast, for example, the (likely) inadvertently positive impact of Google on literacy rates in the developing world with NGOs, against impact-first actors, established and backed intentionally to address global illiteracy, but which were unable to scale sufficiently.

1.3 The SDGs as a common framework for impact investors

For those with an intent to generate impact through their investments, the United Nations' Sustainable Development Goals (SDGs) have proven successful and influential as a metric based framework, despite some of the challenges that come with them.

In 2015, the UN produced 17 Sustainable Development Goals. Progress towards each of these goals can be measured against a series of targets and indicators. Adoption of SDGs has grown such that 72% of companies interviewed by PwC in 2019 mentioned them in their annual report, even if only 1% of them were yet to track and measure their progress towards them (Scott & McGill, 2019).

For impact investors, the SDGs have provided a universally understood set of 'important positive outcomes' for people and the planet; they represent *a practical overview of the different objectives that impact can have*. The SDGs offer a taxonomy of progress for fund managers; a set of overarching themes and guidelines against which individual funds can develop their own in-house methodologies to approach impact.

"Investors have hung onto the SDGs more than any other [form of impact measurement] as a North Star. It has become a common language for [such] investments." - Tom Beagent, Director and Total Impact Measurement and Management Lead at PwC.

One challenge of the SDGs, and other measurement frameworks, is how to prioritise between silos and sectors. Some believe that comparisons should not be made between initiatives, with Jerome Engel citing that doing so may overly favour certain interventions. Others argue that, without comparison, LPs cannot overcome their fiduciary duty, always favouring profit first. Additional challenges arise concerning the dangers of 'SDG-washing' and whether the SDGs are still an appropriate focus. One interviewee suggested that, whilst the SDGs are easy to subscribe to as a comprehensive measure in relation to their goals, they are harder to use and align with in relation to specific targets. Another concurred with this view, going further in suggesting that, for many Western VCs, the SDGs are not directly applicable to non-emerging markets. The SDGs, they explained, are "really a set of goals for developmental organisation, specifically focused on using economic means to advance development."

The SDGs must be interrogated by each firm, fund or company subscribing to them, in order to confirm that the targeted goals are relevant to each organisation's impact aims and to check they can credibly be applied. Regional and market-specific versions of particular SDGs could be created by investors and companies, and may result in more accurate reporting. This will prevent the positive power of the SDGs (their use as a common framework and language to assess progress towards global challenges) from being muddied by inappropriate usage and SDG-washing. Explicit links to SDGs might also be made and purported progress shared transparently, backed by robust assumptions.

In order to understand how impact can be gauged in a practical sense, it is crucial to differentiate between how impact is approached and understood at the different stages of venture investment.

1.4 Impact measurement at different stages of the investment process

Our preliminary research suggests that, as a rule of thumb, the more mature a venture is, the easier it can be for VCs to measure its impact¹¹.

Though a number of initiatives exist which measure the existing externalities¹² of a business itself, research into impact measurement at the venture phase has been sparse. With start-ups often providing insufficient data¹³, particularly for fund managers looking to calculate the impact of an investment, a range of proprietary methods for impact measurement has been developed. These methods include quantitative methodologies through to checklist and scorecard based approaches. In order to understand better how VC funds approach impact, we have broken down the investment process into three overlapping stages. In doing so, we have tried to gauge methods of measurement that are appropriate, given the resources early stage ventures often possess, compared to those which have scaled:

Angel/Seed Stage:

- Chemistry and team dynamics are a key factor at this stage; “the investor must be assured that managers/founders ‘when confronted with new uncertainties...will bring their set of values to bear in this unknown situation.’” - Jerome Engel.
- *“Big corporates can afford to report ESG stats... but founders cannot expend time and capital... [founders] can’t deflect resources that aren’t committed to making their venture successful.”*
 - It should be noted that this is not discouraging start-ups from committing resources to impact reporting, rather making an observation on limited capacity. For start-ups which include impact as part of their value proposition, then it is recommended that they absolutely commit resources to impact reporting; many parts of ESG and impact alignment are quintessential to making a venture successful, rather than simply being attractive ‘add ons’.
- The impact measurement tools used by the average VC fund at this stage may be more limited:
 - The investor can work out how the sector within which the seed operates fits with the SDGs. This can form part of a preliminary negative screen, excluding harmful ventures and identifying those with a positive impact-aligned purpose. One interviewee noted that investors should look to work with respective management teams to identify SDGs which match business objectives, keeping associated impact reporting simple, yet relevant.

¹¹ This is not to say that early stage ventures should not begin processes of considering impact, or that it is ever ‘too early’ to do so. We suggest tools, in Section 1.6, which VCs and investors can use to interrogate early stage impact.

¹² Externalities: The impact that an enterprise has on people and the planet – positive and negative, intended and unintended (IMP Definition: <https://impactmanagementproject.com/>)

¹³ Berg et al., in a study of the challenges and barriers to startups using data analytics, noted that, “the amount of collected data in early stages is limited in terms of volume, velocity, and variety,” and that this, “restricted access to useful data inhibited potential value-adding activities from data analytics.” (2018, pp. 7-8).

- The investor could consult the Impact Management Project's (IMP's) 'Dimensions of Impact'¹⁴ to help map the sector onto the SDGs, alongside other benchmarks¹⁵.

Series A & B:

- At this stage, there is an emerging record of sales and more bandwidth from the management team. VC investors can begin to use impact measurement metrics. VC investors at the Series A & B stages can use the following tools to measure impact:
 - Qualitative Methods
 - Theory of Change Models¹⁶: A logic model is used to express how the investment in the project will lead to specific outputs, outcomes and ultimately impacts.
 - Additionality¹⁷: Assessing whether the target outcomes would have occurred anyway, without the investment.
 - Quantitative Methods
 - Expected Return: Providing a monetary value for social/environmental benefits, which compares public and private benefits to costs.
 - Place-Based Mapping¹⁸: Mapping the impact geographically to understand where the effects of outcomes will be felt.
- However, the data available to VC investors at this stage is not always complete, and there is still much change and pivoting that can impact on measurement efforts.
- A number of interviewees raised concerns about forecasting the potential externalities, both intentional and unintentional, of businesses that are still in the Series A & B stages:
 - Exposure of impact return to risks: The 'patient capital' aspect of VC exposes impact returns to a number of risks. Unforeseen factors through the 7-10 year investment process can act to hinder or reduce the impact return.
 - Lack of data: Information flows from investees to the VC fund are often asymmetric, meaning that in some cases the data necessary to conduct an impact forecast is not available. This makes the full optimisation of impact forecasts difficult.
 - Value-imposition: Comparing potential investees in terms of their potential impact means that the investor must prioritise needs. The imposition of the investor's values upon this part of the decision-making process can lead to subjective bias.
 - Distance from beneficiaries: Throughout the impact forecasting process, investors should consider the well-being of target beneficiaries. Investors should make an active effort to understand what target groups value rather

¹⁴ See Appendix 1 - Impact Management Project's (IMP's) 'Dimensions of Impact'.

¹⁵ See Appendix 2 - Other benchmarks that can be used, as well as the SDGs.

¹⁶ For a 'Simple Theory of Change Checklist' for impact investors, visit the Global Impact Investing Network's IRIS+ framework: <https://iris.thegiin.org/theory-of-change-checklist/>

¹⁷ See (International Finance Corporation, 2018) and (Brest & Born, 2013) for examples of additionality within impact.

¹⁸ See (The Good Economy, Impact Investing Institute, Pensions for Purpose, 2021) for a study of place-based impact investing.

than what is assumed to matter to them, especially before full data on consumer or client needs has been established on a multi-year basis.

- Catalytic effect of success: Investing in a successful venture often draws competitors to the market. Such a trend could magnify the scope of positive change but cut into financial and impact returns for both the investor and investees. A race to the bottom before regulation can catch up ought to be avoided.

Series C onwards:

- At this stage, more data is available about the impact that the scale-up has achieved.
- With more data, VC investors have greater resources, and so an increased ability to measure impact. Impact due diligence can become a more rigorous process.
 - One interviewee suggested that, “the VC investors need investee company management's collaboration to produce meaningful impact data relevant to the business and its impact objectives.” The contributor proposed that doing this requires resources, and that some management teams may still argue that allocating Full-time Equivalents (FTEs) to produce such data detracts from generating revenues, profits and new markets; “management need to be convinced that producing the ‘impact data’ over time will add to the company's long-term success and valuation.”
 - This issue is addressed throughout the report, with the importance of both the investor’s and target company’s intrinsic motivations being aligned towards impact, recurring as a key finding. One interviewee did argue that reluctance of some management to commit resources to impact data collection and reporting is outdated. The interviewee questioned why companies that pay accountants to track financial data would not do the same for ESG and impact data - arguably as crucial in a venture’s success.
- Alongside the methods used at the Seed and Series A & B stages, investors at this stage can use the following tools to measure impact:
 - Robust Mission Alignment: Measuring the execution of a company strategy using Key Performance Indicators (KPIs) to compare against a set of quantitative end goals on a balanced scorecard. KPI surveys and screens are relatively inexpensive and simple ways to monitor mission alignment. The balanced scorecards are effective in tracking the resultant metrics over time, comparing progress to standards and resonating with established investors (So & Staskevicius, 2015). Examples of effective Mission Alignment methodologies can be found in Bridge Ventures and So and Staskevicius’ 2015 paper on impact measurement.
 - Bridges Ventures’ IMPACT Radar and Scorecard (2016) measures the outputs of a venture against the desired impact goals during all stages of investment. The tool allows for progress to be tracked using a constant and consistent set of KPIs, from initial screening and due diligence to exit. Post-investment, and during scaling, the robust set of KPIs can be tracked on scorecards, understood by investees and disclosable to investors.

and data it uses (Totty & Burrett, 2020). Ensuring that data quality is maintained and upheld is key to assuring credibility and preventing fraudulent or ungentle claims to impact. The standards boards monitoring CO2e can help to prevent misreported impact, but investors must take care to ensure that accounting standards can recognise nuances.

The abundance of measurement metrics has given rise to some reliable and effective frameworks, but the sheer volume of data can enable investors and investees to 'cherry-pick' the most appealing rather than the most useful metrics (Murray, 2021). A recent MIT Sloan School of Management paper found the correlation between ESG ratings of five leading global agencies to be 0.61, in comparison with credit ratings from Moodys and Standard & Poor correlated at 0.99 (Berg et al., 2019). Some see this as reflecting a healthy diversity of approaches to sustainability, giving choice to the market in the same way as investors accepting diverse views on what makes a company 'investable' (Norton, 2021), but a move to standardisation and transparency concerning impact measurement metrics, resulting in a common understanding of their use, is required.

This has been argued for by leading practitioners, including Jerome Engel, for many years; "We need standards for measuring impact." A rule-based system for impact investing, equivalent to the Generally Accepted Accounting Principles (GAAP), needs to be developed to audit and certify proclaimed impact reporting. A parallel to Generally Accepted Auditing Standards (GAAS) is also necessary, believes Engel. The creation of universally recognised standards and principles will only happen if mandated by the bodies which govern securities trading, including the Securities Exchange Commission (SEC), the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA). Our interviewees cited the 'Big Four' accounting firms (Deloitte, PwC, Ernst & Young and KPMG) as, seemingly, natural advocates for this. These companies might look at what measures they can take to implement initiatives.

Engel suggests that the benefit of such frameworks would go beyond just one dimension of impact investing; "If these impacts were quantified and made visible, investors would price in the risk of negative consequences to the worst polluters and pay a premium for good actors, as they have intrinsically lower risk. This practice would create a value-added flywheel that, of course, would embrace impact investing at all stages."

A champion of impact measurement and management, is Sir Ronald Cohen²⁴, an influential and pioneering figure in impact investing. Cohen's philosophy, as documented on his website, centres on the need to "embrace measurable impact as a driver in every investment, business, and policy decision we make. This is the 'invisible heart of markets,' guiding their 'invisible hand.'"²⁵ Cohen cites work by the Global Steering Group for Impact Investment, and the Harvard Business School's Impact Weighted Accounts Initiative (IWAI)²⁶, as frameworks for best practice. One interviewee suggested that those in the industry, particularly governments and regulators, should look to leaders and founding

²⁴ Sir Ronald Cohen is Chairman of the Global Steering Group for Impact Investment (GSG); Chairman and co-Founder of The Portland Trust; co-Founder of Social Finance UK, US, and Israel; co-Founder of Bridges Fund Management UK, US, and Israel; and co-Founder of Big Society Capital.

²⁵ See <https://sirronaldcohen.org/sir-ronalds-philosophy> for Cohen's extended philosophy.

²⁶ See <https://www.hbs.edu/impact-weighted-accounts/Pages/research.aspx>

practitioners, such as Cohen, to shape future research and policy adoption. There is a need to listen to experts - this report aims to do so and encourages others to follow suit.

Looking ahead, Artificial Intelligence (AI), and novel emerging technologies may have a key role to play in impact measurement and reporting, enabling analysts to estimate impact metrics remotely, and facilitating the monitoring and reporting of environmental, social and corporate governance externalities. AI and Machine Learning have the potential to monitor and report on alternate forms of data, including satellite imagery, remote sensing and social media. Notable progress has already been made by, for example 60 Decibels and Treedom. 60 Decibels, formerly Acumen Lean Data, captures data by surveying beneficiaries using end-to-end modular impact measurement²⁷. Treedom is engaging with real time tangible accountability rather than estimated, episodic impact²⁸, see case study below.

'Impact Online': A case study of Treedom's technical solution

A B-Corp with offices throughout Europe, Treedom created the first platform where you can plant a tree and remotely follow the project and its impact online.

Treedom works to close the gap between the private sector (both B2B and B2C) and smallholder farmers from rural communities. On one side of the chain Treedom has nearly 7,000 businesses and 1 million individual users, and on the other it supports local/international NGOs and local authorities across 17 countries, and a cooperative of over 800,000 farmers behind them, who look to Treedom to receive support in the implementation and management of agroforestry projects within their communities.

While several tree-planting organisations comprise a similar structure, the key difference with Treedom is the connection of these two realities through the digital Treedom platform. As of October 2021, more than 2.2 million trees have been planted according to their strict principles of agroforestry, but every single tree is also photographed, geolocated, and digitalised into its own unique online page, in order to place the impact into the hands of whomever has supported its planting.

Project managers and farmers all over the world are given the hardware and technical training to use GPS and GIS to provide this information, which is checked and approved by the Forestry Team before being uploaded onto each profile.

Not only is the planting of the tree given visual, geographic and digital validation, but with updates throughout the year, each Treedom user can engage with their commitment for years to come.

Anna Weston, Head of Development UK&I, Treedom

Chapter 3 further addresses the role of emerging technologies in impact.

1.5 The dynamics of investing and selling and how these might affect impact

A key consideration for all of the above stages is how impact is factored into investment rounds and exits. Hard won impact, or the intent to make impact on the part of the entrepreneurs and investors, may be jeopardised if incumbent investors have goals that are at odds with the venture's original purpose. Such a scenario is dictated by the choices made by all parties and the circumstances of a sale (e.g. firesales or auction style pricing). There

²⁷ See <https://60decibels.com/>

²⁸ See <https://www.treedom.net/en/>

are various avenues that entrepreneurs and investors could explore to ensure impact, though some may conflict with perceived fiduciary duties. These might include conversion to B-Corp, picking the best holistic new owner rather than the best priced, or spinning out the most vulnerable aspects of an enterprise's impact operations into another entity. At the very least, securing a seat on the board of a new regime might help, depending on the board member's commitment to pushing for impact.

1.6 Analysing the different capacity load of impact tools

The impact tools used at each of these stages generate different amounts of work. We need to reconcile academic research and current interest in measurement with the practical needs of investment professionals and entrepreneurs on the ground.

Based on our research, it is clear that any tools or explicit metrics used by VC impact investors may have to be light-touch at the pre-investment or due diligence phases, unless ring-fenced resources are in place to cover the cost of more intensive types of measurement. Time-constraints at the deal origination stage require the impact measurement methods employed to be quick to administer and easy to deploy with often limited data; *“Some metrics are really difficult and time consuming to measure so we should be using proxies.”*

Table 1 shows a preliminary estimate of the amount of work required to apply each impact tool or measurement process, and the level of venture maturity at which these tools might be appropriately used by investors. This table is not an exhaustive guide. It is an initial attempt to investigate, quantify and order the relative effort required for practical impact measurement and monitoring within different stages of venture. Whilst this initial ranking offers some guidance, it needs to be refined with more data from the field and from owners of, and subscribers to, each methodology.

Impact Tool Load Table					Seed/Angel			Series A & B			Series C +					
Type of Tool	Type of Measurement	Description	Example	Measurement Load	Pre-Investme	Due Diligence	Ownership	Pre-Investme	Due Diligence	Ownership	Pre-Investme	Due Diligence	Ownership	Ranking	Estimates for time	
	SDGs	Understanding how the sector fits with the SDGs, and alongside more specific targets and indicators.	[IMP Framework - 'What' - tells us what outcome the enterprise is contributing to, whether it is positive or negative, and how important the outcome is to stakeholders.]	Low	1	1	1	1	1	1	1	1	1	1	5 Hours - 5 Days	
Team Screen	Founder	Understanding the motivation of the founder and how much they want to make impact through their business.	[New Philanthropy Capital's Impact Risk Classification - based on an assessment of their culture, organisation and processes, rather than their outputs. Vastly less labour-intensive than comprehensive output measurement, which can be useful for small ventures that are new or sparsely resourced.]	Low	1	1	1	1	1	1	1	1	1	2	1 Week - 3 Weeks	
Qualitative Impact Screen	Negative Screen	Using a negative screen to remove those companies that 'do harm' from the pipeline.	[An SRI-esque screening process can be deployed to produce a pool of companies which do not produce negative externalities. The proactive impact conscious screening process can follow.]	Low	1	1	1	1	1	1	1	1	1	3	1 Month - 4 Months	
	ESG/Impact Due Diligence Questionnaire (DDQ)		[Invest Europe's ESG DDQ provides an exemplar for such questionnaires, as referenced in Section 1.8.]	Low	1	1	1	1	1	1	1	1	1			
Sector Screen	Market	An analysis of the entry market.	[Assessment of incumbents in the market, size of the market, potential for impact, levels of risk and terminal values.]	Low/Medium	2	2	2	1	1	1	1	1	1	4	6 Months +	
	Theory of Change	Using a logic model is used to express how the investment in the project will lead to specific outputs, outcomes and ultimately impacts.	[Examples of Future Planet Capital's Theory of Change model can be found within the Appendix.]	Medium	2	2	2	2	2	2	2	2	2	5	Not practical at Stage	
	Additionality	Assessing whether the target outcomes would have occurred anyway, without the investment.	[Bridges' Additionality Methodology - An investment scores low if the business is well-established with other competing investors]	Medium	2	2	2	2	2	2	2	2	2			
Quantitative Impact Screen	Expected Return	Providing a monetary value for social/environmental benefits, and compares public and private benefits to costs.	[Future Planet's Impact Value Gap and TPG and Rise Fund's Impact Multiplier of Money and Return on Investment]	Medium	2	2	2	2	2	2	2	2	2			
	Place-Based	Mapping the impact geographically to understand where the effects of outcomes will be felt.	[Impact Investing Institute's Five Pillars of Place-Based Impact Investing]	Medium/High	3	3	3	2	2	2	2	2	2			
	CO2e	Measuring the CO2e emissions from a firm's operations	[Benchmarking against the Greenhouse Gas Protocol (GHG) and standardising carbon equivalencies to measure negative CO2e externalities.]	High	5	5	4	4	4	3	3	3	2			
	Mission Alignment	Measuring the execution of strategy using KPIs against a set of quantitative end goals over on a scorecard.	[Examples to be found in Section 1.4. by Bridges Ventures and So and Staskevicius (2015)]	High	4	4	4	4	4	4	4	3	3			
Impact Reporting	Harvard's Impact Weighted Accounts Initiative	Standardising impact reporting and auditing outputs and externalities within entire sectors and industries.	[Serafeim and Trinh's research into accounting for product impact in the Airline (2020b), Telecommunications (2021a) and Water Utilities (2021b)]	High	5	5	5	4	4	4	4	4	4			

Table 1 - Impact Tool Preliminary Load Measurement Table

The relationship between the impact measurement method and the level of venture maturity is not rigid. Based on our research, some investors use these measurement methodologies at different times from those outlined in the table above. The impact measurement methods are fluid and can be used interchangeably given the availability of the necessary data and the context. There is a danger that, in attempting to employ rigorous measurement methodologies at predetermined stages, investors focus too much on mobilising resources to predict impact rather than affecting it (Gugerty & Karlan, 2018).

Whilst robust impact predictions and measures of the positive potential of investments are able to capture minds and inspire investors, impact investing requires action. As a pragmatic, practitioner-friendly report, our research attempts to find the balance between theory and action, aiding investors in focusing efforts on measurement processes that are practical and effective for them. For example, for early-stage ventures, finding impact-motivated founders and teams, harnessing a sector screen, and keeping to the principle of doing no harm seem to have the greatest potential for more universal adoption, with other measurement approaches requiring greater capacity to resource.

Future research, perhaps using Agent-Based Modelling²⁹ (ABM) and big data analysis, might also be able to discern whether VC investors are tempted to flex their impact criteria based on buying and selling dynamics. Our research detected a potential generational gap. The, in part, intuitive approach of experienced investors may not align with the more quantitative approach of recently graduated newcomers to the field, motivated by a desire to rapidly resolve pressing global challenges. Speaking in PitchBook's 2021 'Sustainable Investment Survey', Jake Salpeter, a supervisor in RSM's ESG advisory services practice, substantiated this finding: "We've heard from PE clients that the internal push to establish ESG programs has been, in part, grassroots driven by millennial staff members because of their generational mindset geared toward social and environmental consciousness." (Salpeter in Wiek, 2021a, p.17). This needs further study to determine whether younger investors will adopt a more qualitative approach, or whether enthusiasm for quantitative measurement will effect a longer term culture change in the industry. There are also questions to be answered around whether quantitative approaches prove to be more effective than qualitative predecessors, in evaluating impact and ESG-orientated returns. Answers will come with time, experience and focused research.

1.7 Impact-washing: Problems posed and potential solutions

Despite the increasing use of the methods outlined, *there has been growing criticism of the impact investment industry and wider ESG-principled investing. ESG is accused of being too broad with 'impact' being used for PR purposes only, without actually tackling pressing global issues (impact-washing).*

- One of our interviewees expressed concern about impact-washing, suggesting that it is "a real problem" at the venture stage. The "fluidity of the term 'impact' investing", embraces everything from "technology that saves the world to social venturing". This means that opportunistic VC investors are using it "as clothes to wear, as it is the flavour of the day."

²⁹ See Chapter 3 for an extended look at the potential of ABM and behavioural approaches to VC.

- Another interviewee noted that they would not use impact measurement tools at the venture stage due to the lack of a unifying method of impact investing or a robust set of agreed-upon metrics, referring to it as “*a cottage-industry*”. VC fund managers have developed a range of in-house impact investment methods, proprietary to the VC investor, which employ different metrics at different times of the investment process. Some of these fund managers “are green-washing, and are more interested in trying to make money off of a proprietary black-box than they are in the actual impact.” The interviewee concluded that, until impact measurement tools are provided by “a transparent [and] open source”, they would not consider using them when making an investment.
- On the other hand, a different interviewee urged that this “negative critical bias against impact measurement should be reconsidered.” The solution to the impact-washing problem proposed by this interviewee was “*transparency*.”
 - This conclusion has been echoed elsewhere in contemporary literature: “transparent reporting enables society to distinguish genuine companies from impact-washers and guarantees credibility.” (Shadbolt, 2021).
 - In ensuring credibility, a number of interviewees suggested the need for ‘impact auditability’, to validate the tools and data being used, providing assurance to impact report recipients that measures can be relied upon.
- In the wider corporate sector, there have been calls to go beyond ESG, impact measurement and benchmarking as a side activity, and to integrate it more into the culture, strategy and operations of organisations:
 - “Companies must move beyond box checking and window dressing... collective research points to the need for a new management paradigm for corporate leaders—one in which ESG considerations are embedded in both strategy and operations.” (Serafeim, 2020).

Most recently, solutions to solve some of these challenges lie in attempts to standardise measures. The World Economic Forum’s 2020 report, ‘Measuring Stakeholder Capitalism’, looks to accelerate the convergence amongst the leading standard-setters, bringing comparability, consistency and standardisation to ESG and impact reporting. The IFRS International Sustainability Standards Board is set to provide an umbrella and forum for the various silo sectors, advocating for common standards around the world³⁰. Initiatives within the European Union surrounding Article 9, seek to make sustainability reporting a requirement on the part of organisations covered by its regulatory orbits³¹. Last month (October, 2021) the UK Chancellor, Rishi Sunak, set out details on “plans to weed out ‘greenwashing,’” (Gill, 2021) forcing major UK businesses to disclose if they are on track with the UK’s net zero carbon emissions timeline for 2050, and “justify clearly” any claims they make about sustainability (Gatten et al., 2021). This is a positive government mandate which could set a precedent for companies and ventures of all stages to follow suit, helping potential investors make informed decisions. The new rules are expected to apply to UK-listed and UK-registered companies, coming into play by 2025, although it is not clear what

³⁰ See <https://www.ifrs.org/news-and-events/news/2021/03/trustees-announce-working-group/>; <https://www.ifrs.org/news-and-events/news/2021/03/trustees-announce-strategic-direction-based-on-feedback-to-sustainability-reporting-consultation/> for further details on the IFRS ISSB.

³¹ Articles 8 and 9 of the Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on Sustainability Related Financial Disclosures in the Financial Services Sector. See Appendix 4 for an extended look at Article 9 and its implications.

repercussions businesses could face if they fail to comply. Many of the above measures, initiatives and plans are still output based and undefined, but possess the potential to form stepping stones to a more outcome-orientated approach.

Whilst impact-washing is a challenge to trust in the impact investing sector, there is a need to manage the risk of over-regulation. Rigid or restrictive regulatory processes may facilitate the growth of monopolistic 'walled gardens'; venture stakeholders using measurement as a tool to shut out new entrants, shielded by a lack of transparency in the sector.

1.8 Recommendations

- Despite the growing popularity of impact investing, there remain a number of unsolved issues relating to capacity, appropriateness of methodologies, and the risk of (perceived) green- or impact-washing.
- By using sensible and accurate data, and by being transparent and realistic about the potential of an investment, impact measurement positively informs decisions during the investment stage, but is not a panacea.
- These tools should be used alongside a rigorous analysis of both the market into which the investor is attempting to enter, and the entrepreneur. Whilst measurement has been a focus, there should also be the relevant weight and focus given to more qualitative impact assessment frameworks, such as ESG Due Diligence Questionnaires, developed by, for example, Invest Europe³². These are relatively light-touch and focus more on a company's value alignment, mission, thought process, awareness and teach-ability.

Impact investors at the venture stage might consider the following recommendations:

- Use the SDGs, where appropriate, as a set of universally accepted desirable outcomes, given the SDGs' increasingly widespread adoption, towards which impact investments could be targeted. Care should be taken to avoid possible SDG-washing and tenuous impact links.
- Consider the stage of the investment cycle in order to choose the appropriate metric(s), and use different approaches to measurement for different stages of investing, putting in place additional and possibly separately funded capacity for more complex measurements especially at the earlier stage.
 - *"You have to pay for a good open-source impact measurement programme. You are going to need some non-profit players who can establish this."*
- Ensure that the impact measurement processes employed are rigorous, but light-touch enough to accommodate the time-constraints of VC deal-flow as well as the dynamics of VC auctions where multiple investors are pursuing a venture.
- Be aware that the industry has a negative bias against impact forecasting; adapt measures to make it easier to adopt them, and remember impact investing is still nascent.

³² See https://www.investeurope.eu/media/1777/invest-europe_esg_dd_questionnaire.pdf

- Explore partnering, that might provide an alternative to measurement on the equity side, to arrive at an agreed set of impact credit ratings; focusing on risk and the impact equivalent of debt default.
- Look to governmental bodies and established accountancy firms, like the Big Four, to create standardised impact measurement frameworks akin to the GAAP and GAAS.
 - Future research should look to coordinate with both practitioners and regulatory bodies in order to generate these standards (i.e., determine what the measures used in the framework might be, the units of measures, the weight given to secondary effects, and so on).

CHAPTER 2:

**TOWARDS A
PRACTITIONER-FRIENDLY
APPROACH**

THE IMPACT VALUE GAP



Chapter 2: Towards a practitioner-friendly approach - The Impact Value Gap

Chapter 2 investigates how the issues surrounding impact measurement can be addressed pragmatically, before taking a broader view of the venture stage impact investing industry. The chapter presents suggestions as to how a range of stakeholders, not just the entrepreneur, can act, with or without motivating extrinsic levers, to accelerate impactful ventures.

2.1 Impact management frameworks

To address some of the issues resulting from the attempt to marry impact and investing, the Impact Management Project (IMP) has been acting as a forum for investors. The Project has outlined norms for communicating the impact goals of a portfolio, whilst also advising investors as to how best to construct a portfolio to meet those goals.

The Impact Management Project is a forum for building global consensus on how to measure, assess and report impacts on people and the environment. The IMP has grown out of a client project carried out by Clara Barby and her team at Bridges Impact+, looking to tackle the challenge of finding a “commonly-accepted way of defining, measuring and reporting on the impact that every investment has on people and/or the planet.” (Bridges Fund Management, 2018). It currently convenes a community of over 2,000 practitioners and 15 standard-setting organisations to share best practices, explore technical issues and identify areas where further consensus is required in impact measurement and management.

In 2017, the Dutch asset management firm, PGGM, worked alongside the IMP to better understand and communicate the impact of PGGM’s investments. Using the SDGs, PGGM, manager of the PFZW pension fund in the Netherlands, mapped its portfolio in terms of effects on people and the planet.³³ Using the framework developed with PGGM, the IMP has produced an impact management framework with the goal of instructing other asset managers on how best to categorise investment products by their impact. As a result, a variety of in-house methods have been developed by impact investors at the venture stage.

‘Impact in Action’: A case study of Future Planet Capital’s impact process.

Future Planet Capital (FPC) is looking to play its part in pioneering practitioner-led, holistic impact investing within VC. FPC, and its partners, has begun the process of analysing how impact practitioner-friendly measures can be put in place. Though this is still a work in progress, FPC has embarked on the journey, looking to influence and motivate others to follow suit. Through conversation and collaboration with industry leaders, Future Planet has created a robust impact investing framework. The investment process is a practical and pragmatic approach to impact measurement and monitoring. It presents a useful case study for other investors, VCs and

³³ See (The Impact Management Project & PGGM, 2017).

entrepreneurs. Below is a summary of the investment cycle they have developed in collaboration with PwC.

Step 1: Identify what impact means for the Fund

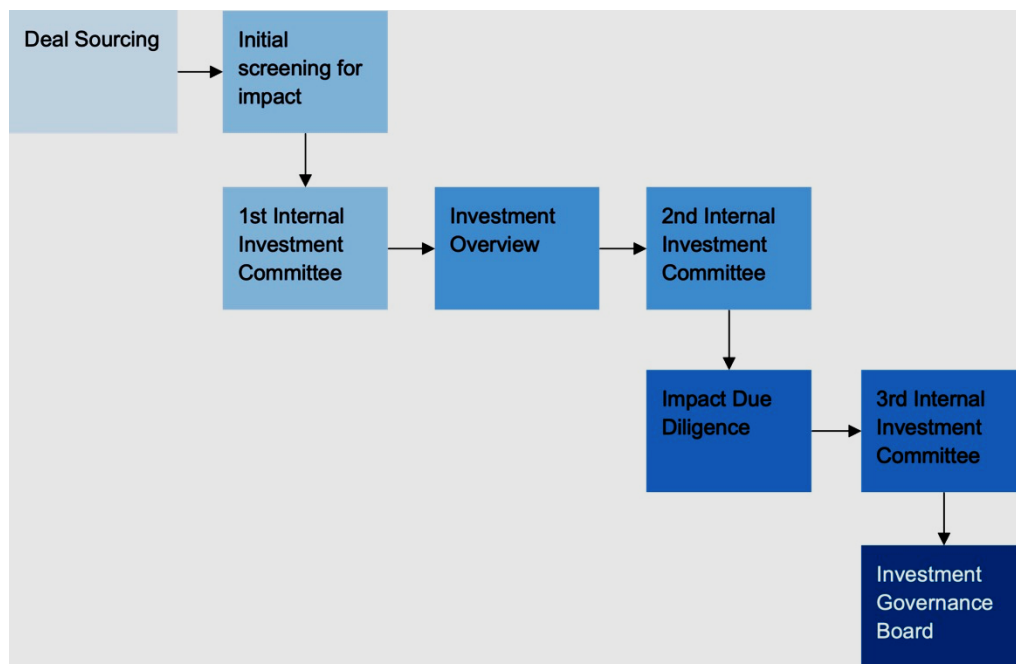
Future Planet Capital has developed a comprehensive impact framework based on five core principles of impact. These principles are to be *aligned* with FPC and emerging best practice, to be *robust* in a data driven approach, to be *consistent* and applied across all funds, to be *practical* in balancing accuracy, depth and cost, and to be *flexible* in terms of goals, teams and deals. To reinforce the credibility of their framework outputs, VC impact funds should ensure that impact due diligence processes are based on a set of impact principles.

Funds must also look to align practice with the UN's SDGs, recognising their importance in achieving positive social and environmental impacts. FPC has identified five areas of impact on which it intends to focus: *Climate Change, Education, Health, Security and Sustainable Growth*. Each impact area has been aligned accordingly with a handful of SDGs which, in turn, have been linked to investable sectors.

Finally, VC funds must generate a definition of impact. FPC has done so, labelling itself as a profit first impact investor in the firm belief that profit drives impact. Whilst seeking opportunities that offer potentially high risk-adjusted returns, FPC will only consider investments that promise to have an obvious positive impact on society and/or the environment in at least one of FPC's five 'impact areas' and clearly contribute to the SDGs - the ultimate aim here is for an investment to have the potential to help a billion people or be part of a trillion dollar market.

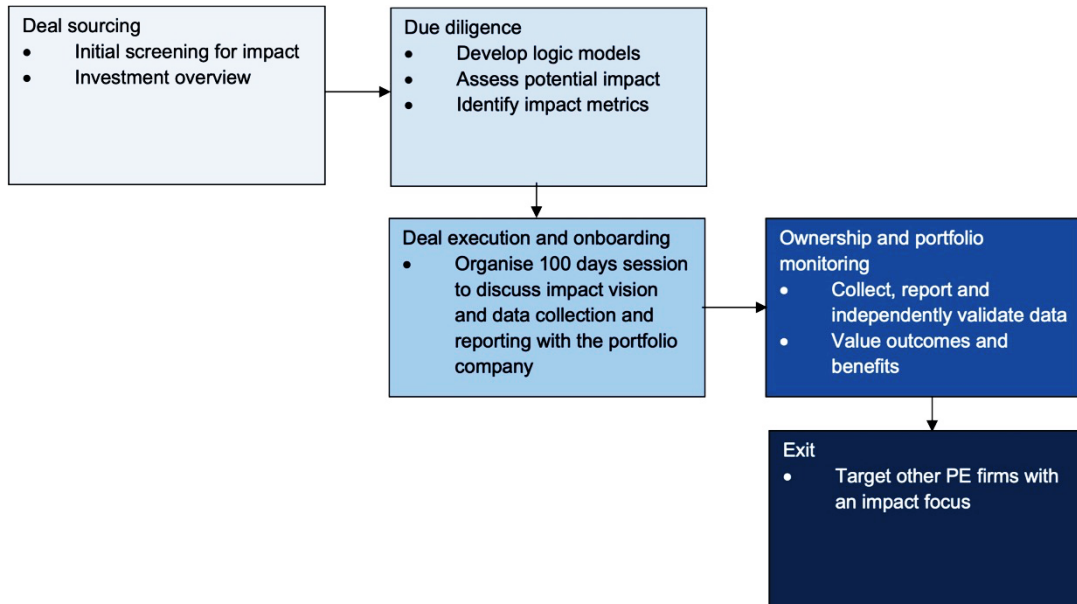
Step 2: Impact Governance

VC impact investors can put appropriate oversight bodies in place to ensure that impact objectives are met. FPC uses both an Internal Investment Committee (IIC) and an Investment Governance Board (IGB). A potential model for an investment oversight process is presented (opposite) by FPC.



Step 3: Impact in the investment lifecycle

FPC has developed a comprehensive investment cycle, incorporating and accounting for impact at each investment stage. This practical methodology can be used as a guide for incumbent impact investors, or as a model to be developed further. Below is a visual representation of the cycle and brief descriptions of each stage³⁴:



- Deal Sourcing
The initial stage consists of two steps. The first is a preliminary screening of all opportunities against pre-set screening criteria, details of which to be found in Appendix 5. The potential of maximal scale is checked, and if this is satisfactory and the screening results are approved by the first IIC, then an Investment Overview is conducted, detailed in Appendix 8. This investment overview is then put forward to a second IIC for review.
- Scale Check and Due Diligence (DD)
If the potential investment is approved at Stage 1, it proceeds to the impact due diligence stage. This process consists of three steps - developing a logic model, assessing potential impact and identifying impact metrics, details again to be found in Appendix 5. The results of this due diligence are then presented to the final IIC, and if approved, to the IGB.
- Deal Execution and Onboarding
During this stage, the investment opportunity is presented to financial compliance boards, before final legal negotiations begin and the subscription is executed. During onboarding, discussions are carried out with the investee company regarding its impact ambition within the fund and how data can be collected to manage impact and ensure progress.
- Ownership and Monitoring
This penultimate stage consists of tracking impact on beneficiaries, measuring explicit positive impact and reporting on progress. Any impact measures or KPIs identified form part of the core management information, also supporting FPC's impact value gap analysis.
- Exit
Whilst FPC is still developing their formal exit model, they have a preliminary process which they are using for their first two listed exits, details of which to be found in Appendix 5.

³⁴ More detailed information on how impact will be considered and managed throughout FPC's investment lifecycle can be found in Appendix 5.

2.2 Measurement as a barrier to entry

Measurement itself can create a load which is not always considered by those advocating metrics and, according to some interviewees, has the potential to create barriers to entry for participants wanting to engage with impact investing.

One interviewee stated that in the public sector, ESG and impact measurement around investments or spending can now account for up to 15% of the cost involved in a project or investment. TPG Rise Fund is known for creating the most detailed monetary estimates of its portfolio's impact³⁵, but few have felt the need to spend so much to achieve that level of measurement specificity so far. There is also the danger that companies focus too much on developing a measurement methodology that cannot be deployed at the necessary speed.

Some practitioners warned that increasing focus, solely on impact measurement, could risk propagating the message that, 'if you cannot measure it is not important.' A number of interviewees shared this reservation and encouraged investors to consider less absolute, more abstract measures; one interviewee highlighted the importance of, "direction, purpose and intentionality," processes which occur before and during the process, the importance of which can "often be lost in the management mantra."

Using the IMP's framework, a number of practitioners have started to evolve a lighter-touch screen at moments of investing when time is critical, with scope for more accurate measurement as portfolio companies mature. This balances the need to be pragmatic without succumbing to impact-washing.

2.3 Cutting edge 'light-touch' impact measurement: The Impact Value Gap

Practitioners have been combining the frameworks provided by the SDGs and IMP with 'impact monetisation', to create impact measurement processes that seem to reduce the amount of work required.

As shown in section 1.5, each impact measurement method requires a different amount of work. 'Impact monetisation' is a nascent, quantitative field of impact measurement which is both fast and light-touch. The developing practice assigns a monetary value to the estimated relative worth of social, environmental or economic impacts to people and society (Olsen, 2020; Nicholls & Zochowski, 2020). In doing so, impact monetisation aims to put a universally understood value on invisible social value creation (Shadbolt, 2021).

Future Planet Capital has begun to incorporate light-touch impact measurement into their investment process, using a model labelled the 'impact value gap'³⁶:

- The 'impact value gap' is the value, in dollar terms, of the solution to the problem that a business is attempting to solve.

³⁵ See (Addy et al., 2019).

³⁶ See Appendix 5 for an example of how Future Planet Capital have incorporated the impact value-gap into their impact measurement process.

- By calculating the potential value of the externality of an option, FPC can then compare this figure against the company's current value. This provides a ratio which generates the biggest gap between current market value and the potential impact-value of a solution. FPC aims to benefit from the arbitrage between these data points.
- To calculate an 'impact value gap', the investor must multiply the 'breadth' of the impact by its 'depth', and then multiply this figure by a (monetary) value factor (Fischer, 2020).
 - For instance, the value of a vaccination would be the number of people exposed to the disease, multiplied by the number of Quality Adjusted Life Years (QALYs) that each vaccine administered adds. This figure is then multiplied by the value of this QALY, which can be calculated using a global median.
 - The monetary impact-value of a solution provides a common language (dollars), which can be used to compare different investment opportunities within the same sector, and if all assumptions are robust enough, for inter-sector comparison.
- Whilst, "the business world has several universally accepted tools, such as the internal rate of return, for estimating a potential investment's financial yields; no analogue exists for evaluating hoped-for social and environmental rewards in dollar terms." (Addy et al., 2019).

Existing methodologies also exist, which can be exploited by impact orientated practitioners. One interviewee pointed towards the Unit Cost Database, a mature monetisation database developed by Greater Manchester Combined Authority (GMCA) Research Team and now used elsewhere within Government. The database employs a cost benefit analysis methodology in order to articulate the fiscal, economic and social value of interventions. These interventions are sorted into thematic areas, such as crime, education and skills, employment and economy, health and energy. The GMCA has made this publicly available³⁷. The Unit Cost Database has become nationally leading in its approach, with a reasonably long history of pragmatic implementation.

Using impact quantification approaches is not without challenges. From our research, we identified several concerns raised by VC practitioners about impact monetisation and value-gap approaches:

- Critics of explicit quantitative impact measurement methods express concern over their inaccuracies. They argue that "technical and data challenges often lead to a high degree of uncertainty and threaten credibility." (David Pritchard, cited in Olsen, 2020, p.5).
 - However, VC fund managers are constantly exposed to uncertainty especially in the earlier stages of a venture's life-cycle. Assumptions must be made during the deal-flow process, often based on unsatisfactory data sets.

³⁷See <https://www.greatermanchester-ca.gov.uk/what-we-do/research/research-cost-benefit-analysis/> for the Excel tool.

- One of our interviewees stressed the need to recognise the impact-value provided by FPC's impact value gap method. It "provides an order of magnitude", a range that is easy to interpret, and is comparable.
- During the comparison process, inaccuracies can be mitigated against by collating all the data available. This safeguard is used in practice at FPC. In our interview with FPC's Ed Phillips, Head of Origination, he emphasised the rigorous analysis of anchor studies and primary evidence required prior to the calculation of FPC's impact value gap.
- Another interviewee also acknowledged the benefits of the impact value gap in aiding intra-industry option comparison. As opposed to relying on a qualitative screen, the impact value gap provides a metric that allows "fund managers to differentiate companies that are trying to do something useful", against those that are "dragging their heels". This was a stance shared by a second contributor, who believed the impact value gap could thus be used to incentivise company management as a means of demonstrating the added value to the business of focusing on its impact and providing impact metrics in performance reports.
- Care must also be taken in deriving purchasing power parity calculations. A top-down approach may end up disincentivising investment in start-ups that positively impact developing countries.
 - As opposed to seeing the figure as an objective terminal value, it is evident that "impact measurement...is not all about a single, precise value itself. Rather, it is about encouraging better decision making" by bringing "the tools of modern finance and management to bear on social and environmental goals" (Fischer, 2020, p.1).
- Above all, the impact value gap is a tool that allows deals to be compared. However, reducing the social or environmental impact of a product or service to a dollar-figure seems to remove nuance from the process, especially if the product or service provides a solution to a problem that is not intrinsically quantifiable. For instance, "the value of sanitation, for example, includes the dignity of those who can access it, which is hard if not impossible to capture fully through quantification" (Olsen, 2020, p.7).
 - On the other hand, It is precisely within this rationalisation that the usefulness of the impact value gap can be identified. "Quantification allows us to evaluate trade-offs more explicitly" so, "if we can make the decision that we prefer A to B, we can express this idea quantitatively: the value of A > the value of B." (Fischer, 2020, p.5). In placing a dollar value on impact, generated from transparent and robust assumptions, impact monetisation "maintains a level of comparability whilst allowing for context." (Nicholls & Zochowski, 2020, p.3).
- Finally, different investors measure impact differently, as their values are heterogenous. Each fund manager perceives some industries as inherently more 'impactful' than others. Ultimately, by avoiding the use of an impact value gap, the fund manager can, as suggested by Jerome Engel, "avoid prioritising needs". This final 'sticking point' is difficult to resolve; "mere contemplation of trade-offs that touch on the sacred or taboo makes us all uncomfortable" (Tetlock, 2003 in Fischer, 2020, p.5).

- Whilst certainly valid, such concerns do not account for the advantage conferred by a common language which aids the discussion of impact between investors, stakeholders and limited partners. The impact value-gap enables opportunities to be balanced, and “allows enterprises and investors to make better decisions about impact and to effectively communicate the drivers of those decisions to their stakeholders.” (Fischer, 2020, p.6).

Whilst difficulties with the use of an impact monetisation and value gap calculations are present, the process still has potential which should be recognised. One of our interviewees emphasised the importance of recognising the monetised impact value as an estimate, one that has similar characteristics to the predicted financial return on investment (ROI), made at the pre-investment phase. This explains, to some extent, why a number of companies use an impact value gap to inform their decision-making process at the investment stage.

In the future, as the ranking of methodologies becomes more robust, there may be greater consensus about which ones to use and when to use them, based on return on measurement. Until then, there is going to be a tussle as enterprises and ventures mature, scaling up and beginning to use standardised ESG metrics. It was clear from our interviews that some investors did not want to measure impact at all. Instead, they emphasised the importance of intangible factors that influence the investor’s decision-making process.

2.4 Intrinsic Motivations: The importance of a founder’s desire to do good

Much focus has been on external levers to create impact within industry and management teams, governance and regulation. However, a number of interviewees stressed that a key dynamic in ensuring ventures deliver impact is intrinsic motivation; you cannot force companies to do good, they have to want to do so from the top down.

- One of our interviewees, who makes venture investments both at the seed and growth stages, contended that management’s innate desire to drive positive change was the most sure guarantee of an impactful investment. The interviewee suggested that, given the patient nature of capital in VC, impact measurement could not account for the ‘shocks’ that would inevitably be faced by a developing start-up from seed through to exit.
- Another interviewee took a similar stance, proposing that the best way to ensure impact was not to try to predict and forecast the future externalities of a product or service, but instead to understand the intrinsic drive of the founders.
 - The interviewee referred to the fact that during the journey from seed to maturity, the investment would be exposed to numerous unpredictable risks, as demonstrated by the COVID-19 pandemic. Such unpredictability jeopardizes the impact of that investment.
 - It is crucial, therefore, that at the origination phase, VC fund managers are assured that “[founders], when confronted with new uncertainties...will bring their set of values to bear in this unknown situation.” Investors should ask themselves repeatedly at the origination stage, “can we trust the founder in an uncertain future?” - Jerome Engel.

- Ventures may need to pivot due to unforeseen circumstances, or as a result of new insights about their market. A founding team's innate motivation is relied upon to maintain impact integrity. One interviewee noted that whilst the business case may evolve, the founder remains.
- In addition to the motivations of management teams, the question of whether a startup's culture and employee commitment aligns with the mission is also critical.
 - "A top-down approach to sustainability and good governance is not effective if it is not supported from the bottom up by a culture that rallies around ESG initiatives." (Serafeim, 2020).
- As one interviewee noted, investors must understand the importance of using motivation and culture as a metric to protect resources and effort. We have been sure to include intrinsic motivation as a measure of impact in our load table (Table 1), with which ventures at all stages, including start-ups, can comply. A useful example of intrinsic motivations as a pragmatic measure can be found in New Philanthropy Capital's (NPC) Impact Risk Classification. NPC's framework is designed to generate an impact profile for funds and enterprises based on an assessment of their culture, organisation and processes, rather than their outputs (Lomax et al., 2018). Whilst its primary function is as a predictive tool for future impact, our interviewee spoke on potential applications; "it works on start-ups (which haven't generated outputs yet), and it is vastly less labour-intensive than comprehensive output measurement, which can be useful for small ventures that are new or sparsely resourced."³⁸
- One interviewee remarked on the potential for investors to create a new norm around taking ESG and impact sensitive culture into account in asset allocation and valuing it commercially; that VC investors, in choosing which founders to back based on their ESG intrinsic motivations, ensure more positive impact ventures exist and grow.

A key finding of this report centred around the importance of a holistic impact approach. Such an approach has two dimensions. One dimension is the need for both intrinsic and extrinsic motivations to be leveraged by actors. The other dimension, explored later in this chapter, emphasises the importance of both the involvement of first-tier actors, such as VCs and entrepreneurs, and that of the wider second-order actors within the investment ecosystem. The following case study illustrates how first-actor VC funds can harness and propagate intrinsic motivations throughout the wider investment landscape.

'Harnessing Intrinsic Motivations': A case study of mentoring and inspiring within FPC

Future Planet Capital is a leading example of an inspiring VC fund in action, attempting to foster intrinsic impact motivations within others. Below is a list of ways in which FPC has leveraged its own intrinsic motivations, to do well by doing good, to inspire others.

- Education and Research
 - FPC publishes regular blogs, thought pieces, insights and podcasts under their Future Thinking and Thought Leadership initiatives. Informative articles, covering current developments in impact, SDGs and ESG, are an effective and accessible means of

³⁸ NPC are currently attempting to map their scoring methodology to realised outputs, to test the predictive value of the qualitative assessment, with results due later this year.

educating fellow actors and investors, inspiring discussion and engagement. An online presence can also document and share impact goals and progress with the public.

- FPC looks to involve itself in pioneering research around impact investing and ESG. Through contributions to white papers, research theses and public reports, members of the Future Planet team look to disseminate their message and research surrounding venture-based impact investment. As the sponsor of this report, it is clear that Future Planet Capital intends to be at the forefront of pragmatic, holistic impact.
- FPC's Future Fund aims to provide an opportunity for mentors and leading practitioners, such as Lord Wei of Shoreditch, to provide inspiration through talks, workshops, and smaller group mentoring sessions. When implemented, this will look to help founders, and those around them, better understand their potential to make impact, factoring it into their thinking and planning, as part of the process of scaling up and establishing a business.
- Awards
 - FPC has been involved in identifying some of the brightest impact prospects and start-ups, founding both The Future Planet Award and MIT Solve's Future Planet Capital Prize. Awards and prize funds present recipients with crucial resources, opportunities and recognition. Future Planet's role, as a guiding mentor and judge of impact, bolsters their practitioner-first, holistic impact approach.
- FPC Network
 - FPC has a growing network of Future Planet Alumni. This network facilitates discussion and exchanges between established investment actors and industry practitioners, and the wider impact ecosystem, from government and retail consumers, to academic researchers and leading minds from top universities. As the Executive Chairman highlighted, FPC's role is to encourage and enable the dots to connect, rather than connecting them itself.

2.5 How measurement affects the behaviour of VCs, investors and founders

There is an important question surrounding to what degree measurement affects, or should affect, behaviour, particularly of the VCs, investors and founders.

Within the impact investing industry, the current consensus seems to be to pressurise the investor, and by extension founders and entrepreneurial teams, to measure and facilitate positive impact. This can be achieved through the leverage upon investing or exiting, through board seats and voting rights, and by simply presenting and reporting impact information to investors and teams.

There are limits as to how much can be achieved via these primary players alone. For example, one interviewee said, "Investors cannot tell entrepreneurs what to do. They can either buy or sell stock. Boards only have a nuclear option, to fire the CEO." However, a number of our interviewees noted that many other actors within the VC ecosystem have increasingly helped to create and accelerate ventures that have a positive impact.

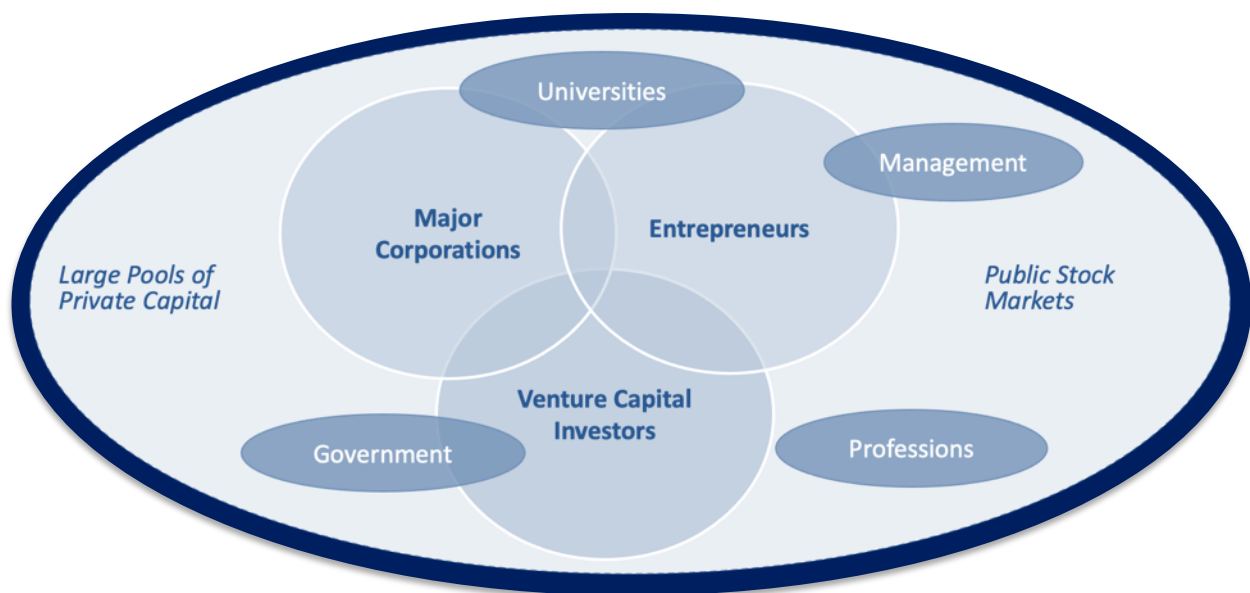
Our interviews have made clear that the relationship between measurement and investment decisions does not necessarily always flow in a predictable direction. This may be due to the varied nature of many organisations' goals, or to an individual decision-maker's behaviour. Whilst this interplay is complex and subject to change, there is consensus as to the need for willingness to adopt measurement data and to change according to its results. Interviews have produced limited evidence of measurement data forcing investors and entrepreneurs to change direction against their will or contrary to their preference. Further research is required to understand how often this happens, under what circumstances and to what

extent. Until then, the jury is still out on how much impact measurement actually changes investor and entrepreneurial behaviour.

2.6 How stakeholders can accelerate impactful innovation

It is important to understand how cluster participants can play a bigger role in accelerating impactful ventures. Key to this is exploring how governments, regulators, Limited Partners, consumers and activists can help create and shape impactful innovation.

The analysis in this following section gives a limited taxonomy of actions that different stakeholders within a Cluster of Innovation (COI) can take to support innovation and venture. Jerome Engel has helpfully provided a cluster diagram which elucidates the connections and interactions between different stakeholders within the VC ecosystem.



Source: Developed by author. Adapted from the version published in J.S. Engel, *Global Clusters of Innovation: Entrepreneurial Engines of Economic Growth around the World* (Northampton, MA: Edward Elgar Publishing Inc., 2014). By permission of the publisher.

Through interviews and extensive discussion with practitioners in COIs, we present a non-exhaustive landscape of possible interventions that are being, or can be, carried out to encourage greater impact orientated venture investment and activity. This report is not in a position to conduct a 'deep dive' into each component, rather, it highlights avenues deemed to have exciting potential. More concentrated efforts have been made regarding the government and pension funds' roles in contributing to impact, as we believe these areas hold particular promise in their potential for change and their complexities warrant a more rigorous investigation.

i. The role of Government in impact investing

- Mariana Mazzucato, Professor in the Economics of Innovation and Public Value at University College London, has made a compelling case for governments to provide

more capital to start-ups, showing that many of the technological breakthroughs we associate with Silicon Valley, such as GPS, Siri, the internet, and touchscreen, are actually the product of ambitious public investment. “Without ambitious public investment”, Mazzucato argues, “the private sector would have proved unwilling to invest in areas where the required funding was large, long-term and highly uncertain” (Mazzucato, 2021).

- Governments clearly have the capacity to stimulate impactful innovation on a large scale, and potentially can leverage that influence to support impact and ESG objectives. Accordingly, a number of our interviewees advocated that governments should play a larger role in the VC ecosystem, because positive impact technology often has a price premium. There is a need to move away from focus on ‘safe research’, according to the UK Research and Development Roadmap (July, 2020), and “accept the need to reverse the decline in funding for the long-term, fundamental research on which the entire system depends.” (p.9).
- The creation of ARIA, the UK’s Advanced Research & Invention Agency, and the publication of the UK R&D Roadmap, demonstrates a recognition that the Government needs to play a role in fostering innovation; to address the discrepancy between the UK’s ability to attract VC³⁹ and its underperformance in innovative initiatives, whilst also increasing investment in research:

“The UK’s R&D system is internationally recognised, but, like many research-intensive nations, we face systemic challenges that can make it harder for us to produce, translate and use great research. We know unnecessary bureaucracy is constraining the research process, making it risk-averse and inefficient...It is difficult for innovative firms to access finance required to scale, and our patterns of investment are concentrated on specific places and sectors. Our research and innovation system could be more resilient and more efficient.” - (HM Government, 2020, p.49).
- The Roadmap sets out a series of questions it looks to answer, surrounding:
 - embracing the high-risk, long-term reward nature of transformative research.
 - eliminating unnecessary bureaucracy.
 - strengthening the interactions between research, innovation, commercialisation and deployment.
 - supporting entrepreneurs and start-ups and increasing the flow of capital into firms carrying out R&D enabling them to scale up.
 - working collaboratively across the UK, “fostering greater collaboration and networks between funders, researchers, practitioners and civic leaders to embed a system that delivers stronger local economic benefit and improved quality of life outcomes from R&D” - The UK R&D Place Strategy. (HM Government, 2020).
- The Wei Forward Report has generated a set of non-exhaustive ways in which governments, with a particular focus on the UK, can address such questions and help stimulate more impactful innovation clusters (to be found in Appendix 6). These focus on the government’s roles in procurement, proof-of-concept funding,

³⁹ The Roadmap states, “We [the UK] already attract significant venture capital – at a level that exceeds that of Germany, France and Sweden combined,” citing *UK Tech Extends Lead over Europe*, TechNation (2018) <https://technation.io/news/uk-tech-extends-lead-over-europe/>

investment into innovation clusters, operating as an anchor LP and provision of fiscal incentives and tax breaks.

- Some of the most consistent calls from interviewees were for the government to play a first customer role in procuring innovative start-ups with a high long-term impact potential, but few initial customers.
 - “The government needs to take more risks as a customer in disruptive products and services, as it is a real challenge to companies in these spaces to get customers.” - Andy Muir, Investment Director of Future Planet Capital and Fund Principal of the UK Innovation & Science Seed Fund.
- Some of the most interesting findings pertaining to this sector concern how decentralisation of procurement can be helpful in the distribution of risk, thus encouraging investment into innovative start-ups.
 - The US is generally seen as having a more decentralised system of government procurement than the UK, which allows federal agencies to fund innovation and experiment on a smaller scale. The UK by contrast has a hyper-centralised system of procurement; *“all the benefits of a decentralised system are squished, as lots of promising stuff goes to Westminster and dies there”*.
 - Initiatives, such as the Camden Council and the UCL Institute for Innovation and Public Purpose’s (IIPP) Renewal Initiative⁴⁰, are promising steps towards decentralised innovation and ‘mission-oriented’ policy within the UK.
- Further interesting findings lie in the ways in which government could encourage impactful venture investing through the provision of green tax breaks.
 - A novel suggestion surrounds legal exemptions from Inheritance Tax (IHT) for defined benefit (DB) pensions, of which more than 5% is impactfully invested towards progress within the SDGs. There is room here for local authority pension providers, of whom only 30% engage in impact investing, to divert capital towards impact and engage with this transition directly.⁴¹
 - The government could also consider enabling FinTech players to include impactful investing as a tax-free investment (we suggest for quantities of up to £3000) for those saving via apps, or other means, into ISAs or defined contribution (DC) pensions annually.
- Recent UK Government pushes towards Net Zero are also promising springboards to increased early-stage funding.
 - The UK Government’s Net Zero strategy, and the accompanying £26 billion programme, aims to reduce net carbon emissions by 78% by 2035, compared to 1990 levels (GOV.UK, 2021). With this strategy and funding comes an opportunity for the Government to back British innovation and transformative start-ups, in line with calls from the Treasury for the pensions and investment sector to start aligning their funds with Net Zero (Gatten, 2021).
- An important avenue for future research, which is not covered in detail within this report, surrounds the role of sovereign wealth funds (SWFs). SWFs are “government-owned investment entities tasked with maximising long-term intergenerational savings.” (Engel et al., 2016, p.3). They pursue many complementary goals to

⁴⁰ See <https://camdenrenewal.com/>

⁴¹ This is covered further in Section 2.6.iii.

governments, with particular recent focus on disruptive and innovative technologies (Engel et al., 2020), enhancing domestic competitiveness over long-term time horizons⁴².

- The UK government may want to look towards countries like France, Ireland, Nigeria, Oman and Singapore, and funds, such as Mubadala, Temasek, and Khazanah. With UK pension funds' hesitancy regarding illiquid investment, SWFs may provide an alternative investment method.

ii. The role of limited partners (LPs) in impact investing

- LPs have a commitment to fiduciary duty which must be reworked to accommodate an impact conscious view of returns.
 - Currently, many LPs believe that they are unable to steer general partners (GPs) towards impact, for fear of detracting from current practice. A key contributing factor to LP hesitancy towards sustainable and impact investments surrounds the concern that, in pursuing sustainable investment, LP's may face stakeholder anxiety about fiduciary responsibility. This was cited as the biggest challenge to LPs' adoption of impact investment practices in a recent 'Sustainable Investor Survey' (Wiek, 2021a, p.21).
- Some LPs believe that championing a transition to impact investing is not their place.
 - The 'ESG and the Private Markets' report from PitchBook, authored by Wiek, notes that, "the blind pool aspect of these funds already presupposes that the LP has faith that the GP is best equipped to make decisions on behalf of the fund's investors." (2021b, p.9).
- In addition to these barriers to LP-led impact, many partnerships believe they are not large enough to pursue impact in addition to existing fiduciary duties.
 - Pitchbook identified that the substantial amounts of money involved in, and the rarity of, signed LP agreements being renegotiated, mean only the largest LPs can influence General Partners disinclined to consider ESG factors (Wiek, 2021b, p.9).
- A call for a change in mindset must be issued and answered. The economics of VC are well aligned between LPs, asset allocators and VC funds, with each element of the value-chain aligned to ensure that each decision maximises returns. Forgoing fiduciary duty should not be a result of impact investing.
 - The 'Impact Funds by Reason and Region' report (Wiek, 2021c), documented that some of its surveyed GPs preferred not to be categorised as impact investors, even if they were investing with that objective. They did not want potential LPs to, "misconstrue the label as an indicator that financial returns are a secondary focus." (p.2).
 - The majority of practitioners interviewed by PitchBook, and those consulted for this report, made clear, however, that financial returns are a clear primary motivation and are not sacrificed in pursuing impact investing; "Eventually

⁴² See (Engel et al., 2016) and (Engel et al., 2020) for extended literature pertaining to SWFs, VC and innovation.

LPs should come around when they recognize that fund managers still want to maximize their incentives.” (2021c, p.2).

- The move towards impact and ESG-orientated investing by LPs is underway and can be accelerated.
 - Those that serve LPs (i.e., GPs) have experienced increased interest in sustainable investment issues from LPs in the last three years (64% of respondents - Wiek, 2021a).
 - Where smaller LPs were unlikely to collaborate in making demands of GPs during agreement negotiations, there now exist organisations such as the Institutional Limited Partner Association (ILPA).
 - The ILPA is currently collecting best practices for LPs implementing ESG programs, from organizational policy and infrastructure to due diligence and investment decision-making⁴³.
- There is room for LPs, as providers of capital, to demand that they see a return on impact alongside financial return. A useful step in this direction would be for LPs to support calls for common and standardised frameworks, in line with Jerome Engel’s stance, as outlined in Section 1.4.

iii. The role of pension funds as impact investors

- UK pension funds might look to commit more capital to achieve impact through investment in higher risk ventures. Lack of pension fund investment into VC/Growth Equity (GE) is confined to the UK. In 2017, 3.7% of the £33 billion raised for UK VC investment came from UK pension funds, whereas 36.5% came from overseas pension funds. (British Venture Capital Association, 2017).
- Pension funds are committed to fiduciary duty. This commitment, a number of our interviewees argued, should actually stimulate investment in impactful ventures.
 - A recent study by the British Business Bank (BBB) has shown that investment in VC/Growth Equity as an asset class has delivered an average return, net of fees, of 7% higher per annum than that seen in public equity markets. This explains why a VC default fund could achieve a 7-12% increase in total retirement savings for the average 22-year-old if the fund chose to allocate a small proportion of funds into VC/Growth assets. The BBB recommends Pension Funds invest less than 5% into VC/GE assets (BBB & Oliver Wyman, 2019).
- UK pension funds are not fulfilling their fiduciary duty by avoiding diversification and investing only in public equity markets. This is not the case elsewhere. In the US, since the Bayh-Dole Act of 1980 and the Department of Labor’s clarification of the ‘Prudent Man’ rule, it has been commonplace for pension funds to invest in VC⁴⁴.
- Through research and conversation with practitioners within the pensions industry, this report presents a possible explanation as to why UK pension funds steer clear of VC, and potential solutions to bring about a change in mindset. A summary of these

⁴³See https://ilpa.org/ilpa_esg_roadmap/

⁴⁴ The ‘Prudent Man’ ruling amended restrictions on US pension fund investments relating to high risk assets. See (Collins, 2003).

findings is presented below, with a deeper dive into the landscape presented in Appendix 7.

- The UK pension funds market suffers from high levels of regulation and institutionalisation, avoiding investment into more expensive and potentially higher risk VC funds, even if they hold most promise of yielding high-return and high-impact results. This has resulted in extensive missed opportunity, be it the Universities Superannuation Scheme (USS) avoiding allocating to university spin-outs, or Defined Contribution (DC) pensions refusing to invest more than 1% into VC/GE funds, forgoing an asset class that returns higher per annum rates than other PE markets.
- There are solutions and directions of travel for the UK pensions industry in harnessing the power of VC. Multi-asset funds, offsetting VC's illiquidity and using buffers found in DB pensions to invest in higher risk asset classes are all examples of current and evolving industry solutions. Education around the potential for VC within pensions and a subsequent shift in mindset, to keep up with the democratisation of pension allocation caused by FinTech, are key areas for this cluster to work towards.
- One interviewee noted that the government has been trying to twist arms for years, attempting to encourage increased investment into all illiquid VC, not just that which targeted impact. There is continued pressure on the pension sector to change with impact coming in alongside and behind this to add pressure. This issue cannot be solely for the impact sector. It has to be solved for VC in its entirety.

'Death Duties to Breathe Life into Ventures?': A case study of potential pensions taxes.

Carl Emmerson, of the Institute for Fiscal Studies, a leading think tank often consulted by the UK Government, has deemed one of the greatest tax perks of pension saving to be 'indefensibly generous' (Beard, 2021). Currently retirement savings, harboured in workplace pensions, are exempt from inheritance tax. With Emmerson's announcement, however, there may be imminent changes to pensions' tax-free status. The Chancellor, Rishi Sunak, could announce plans to cease the tax break as soon as October 27, 2021, with the release of the Autumn Budget.

We believe that this proposed change could be leveraged to support impact and VC. If taxes upon pensions, as part of an individual's estate, are introduced, there is potential for loopholes to be embedded. These loopholes could allow pension holders to invest the taxable savings into earlier stage, non-publicly listed, impact venture funds, or those with clear ESG principles. This could be favourable to both the Government, who are trying to secure 'Build Back Better' funding, and those subject to tax, who are concerned about undefined changes to pensions. Returning the pension holder some autonomy around contribution decisions, and giving them a choice as to the taxes application, could be a popular alternative to a Treasury tax raid, the number one fear among pension savers (Beard, 2021).

Further research and round-table discussion would need to be conducted to check the feasibility of this suggestion. There are questions to be answered around how these pension tax alternative 'buckets' would be decided upon and assured, audited or approved. If the initiative were centralised then the Government would need to take the lead on classifying and offering loophole alternatives, or pension funds would have to focus resources on creating assured and legitimate impact options - this extra focus upon impact and ESG-aligned pension contributions may be a positive externality of the process.

iv. The role of retail investors in impact investing

- Retail investors can look to invest in VCs directly, or indirectly, via institutions with which they are engaged, such as endowments, pension funds and sovereign wealth groups. It is also important that retail investors understand their own personal exposure to the potentially negative impacts of their investment portfolio.
- Retail investors looking to make impactful investments in public limited companies could use the following tools to understand their exposure, and to inform their investment decisions.
 - Investors could try to limit the stocks they hold to those firms which rank their impact based on sensible and rigorous frameworks, such as those listed in 1.4 or credited frameworks like Global Impact Investing Network's IRIS+.
 - Investors should be aware of the dangers of green- or impact-washing, conducting due diligence of sustainable investment opportunities. Holdings such as Exchange Traded Funds (ETFs) or Mutual Funds may hold both ESG and non-ESG products.
 - Whilst the role of FinTech in impact-orientated VC has not been a focus of this report⁴⁵, the growing scope and sophistication of the 'FinTech Revolution', may open up avenues through which retail investors can take back some autonomy in vetting and assuring the nature of products they hold.

v. The role of activists and consumers in impact investing

- Companies are legally required to take account of their impact on society and the environment.
 - Companies Act of 2006, Section 172D: 'A director of a company must...have regard to the impact of the company's operations on the community and the environment'.⁴⁶ There is also now a new separate duty (414CZA), introduced in 2019, requiring companies to report on a "section 172(1) statement" documenting how directors have held regard for the section (Sales, 2019).
 - There is also progress towards company accountability on the wider, international scene. A recent Member's Bill proposed in New Zealand looks to amend section 131 of their Companies Act to introduce recognised ESG factors, which directors may take in mind (Moe, 2021).
- The Companies Act, however, has been described by some as a "toothless tiger" (Compton, 2021). The clause, to "have regard" for the environment, has seen many pay superficial lip service to the ruling; "It is likely to be sufficient for directors to justify an environmental harmful decision on the basis that 'we considered the effect of our decision on the environment and dismissed it given it would be adverse to the benefit of the members as a whole.'" (Compton, 2021). This was demonstrated in the decision of R (on the application of People & Planet) v HM Treasury [2009] EWHC 3020 Admin⁴⁷.

⁴⁵ This is addressed in Chapter 3 as an area of future research.

⁴⁶ See Appendix 8 for Section 12 of the Companies Act of 2006 in full.

⁴⁷ In this ruling, the World Development Movement, PLATFORM, and People & Planet brought a claim against the UK Treasury over its investment in the Royal Bank of Scotland (RBS), without due environmental and human rights considerations given for the controversial companies financed by RBS. The High Court did not grant permission to conduct a judicial review and ruled that if considerations had been made, they may have conflicted with the duty of the RBS Board "to promote

- However, activists should not be discouraged and should engage with future test cases to create a precedent for company directors to be made liable for negatively impacting society. There should be demands that the Directors provide evidence that they have fulfilled their obligations under the Companies Act. The above ruling can be seen, in part, as a judge deeming it a risk for a company to make environmental considerations that may impact share price and, consequently, stakeholders. For impact-orientated companies, we would hope that ESG principles would align with stakeholder motivations. For larger, existing companies, litigation proceedings and public cases may help attract more robust regulation for social and environmental failures at the venture stage. We cannot afford to have another wave of negative externalities knowingly incurred on society by directors, as was done by big tobacco in recent memory.
- The UK Corporate Governance Code⁴⁸ also sets out principles to which Directors and management teams might look to subscribe. Provision 28 of the Code requires boards to carry out “a robust assessment of the company’s emerging and principal risks”. These risks are defined as “events or circumstances that might threaten the company’s business model, future performance, solvency or liquidity and reputation”. Lord Sales, Justice of the Supreme Court, contended that, “Environmental impacts would seem to fall squarely within this definition.” (2019, p.8).⁴⁹
- Lord Sales has outlined a series of possible reforms, in order to ensure directors pay sufficient environmental, social and corporate governance consideration.
 - *“Even the new English provisions do not go as far as requiring large companies, to which the additional requirements apply, to produce statements that exclusively cover environmental factors and their impact on company decisions. Arguably, by combining the section 172(1)(d) environmental consideration with multiple other factors, both in terms of relevance to board decisions and reporting or disclosure requirements, climate change is not given the clear focus and prominence it deserves. In this respect, further thought should therefore perhaps be given to standalone environmental disclosure duties under English... company law.”* (2019, p.14).
- Whilst regulatory duties tend to fall on directors, liability must also be extended to all those within the management team, be they C-Suite, board members, founders or trustees. Currently, company directors in the UK are underpaid for the risks they undertake, with many standards set in a pre-litigious environment. The workload and liability to which they are exposed is incommensurate to their remuneration. Pension trustees, on the other hand, are not required to account for impact of operations, despite receiving tax exemptions from the public purse. Liability must be extended to those wielding power in the wider organisation.

the success of the company for the benefit of its members as a whole.” The Companies Act, 2006 - 172 1(A).

⁴⁸ See Appendix 8 for a link to the complete FRC’s 2018 UK Corporate Governance Code.

⁴⁹ Other legislation encouraging financial reporting includes Section 414C of the Companies Act (414C(7)(b)(i) requiring a “strategic report” which includes “environmental matters, including the impact of the company’s business on the environment”), the Companies (Miscellaneous Reporting) Regulations 2018, Regulation 40(3)(o) of the Charities (Accounts and Reports) Regulations 2008 and the Occupational Pension Schemes (Investment) Regulations 2005, 2(3)(b)(vi).

2.7 Recommendations

Recommendations for Government

- Governments can build narratives and arms-length arrangements, similar to those with DARPA. This would enable governments to harness national security criteria, deploying funds into risky, yet important, new industries tackling global issues, such as climate change.
- Develop effective regional first-loss mechanisms, encouraging regional governments to take on high-risk innovative products and services as first customers. This will help distribute the risk of failure.
- Adapt legislation to make it possible for government bodies to procure more easily from start-ups who may have a short trading history or be seen as higher risk. This should be done, even if it means setting aside a defined % of procurement budgets in order to trial new entrants.
- Look to introduce green tax breaks for VC funds, pension funds and individual investors and consumers.
- Invest in venture stage impact investors who have already developed rationalised procurement processes.
- Foster a culture and central government strategy which rewards and encourages civil servants and procurement leaders to search for innovative start-ups. This could include a program of rewards to recognise roles in enabling trials of new technologies and approaches that can solve major ESG and impact related problems.
- Consider setting aside funds to back critical proof-of-concept facilities such as factories or vaccine centres to increase the commercial traction of nascent, high-impact potential solutions to global problems.
- Provide stable and long-term funding for innovation clusters to provide entrepreneurs with the necessary environment and resources to commercialise impactful innovation.

Recommendations for limited partners and pension funds

- LPs, as the bodies with the capital, can demand impact returns alongside financial returns. An understanding that a robust value-chain exists between LPs and impact orientated VC can, and is being, reached.
- Harness mechanisms that help inspire founders and teams to stay true to their mission, such as mentoring and peer to peer communities, to maintain high levels of intrinsic motivation, without relying solely on extrinsic drivers.
- For UK pension funds as limited partners in VC:
 - UK Pension funds need to allocate a small portion, less than 5%, to venture, and accept higher management fees for this asset allocation.
 - They could also be willing to bear longer horizons and higher risk and recognise the prospect of an outsized long-term return. Further, they can also adopt a holistic view of returns.
 - A test case of our 'Death Duties' loophole may also be looked into.

Recommendations for retail investors

- Consciously and actively invest in VCs directly, or indirectly, which operate in ESG and impact.
- Retail investors need to better understand their personal exposure to non-impact and non-ESG investments in portfolios, and the effects of this.

Recommendations for activists and consumers

- Initiate and engage in test cases to create a precedent for directors of companies to be made liable for their companies negative impact on the environment and society.
- Attract attention to, and direct efforts towards, robust regulation as a result of perceived social and environmental failures.

CHAPTER 3:

FUTURE RESEARCH FOR HOLISTIC, PRACTITIONER- FRIENDLY IMPACT



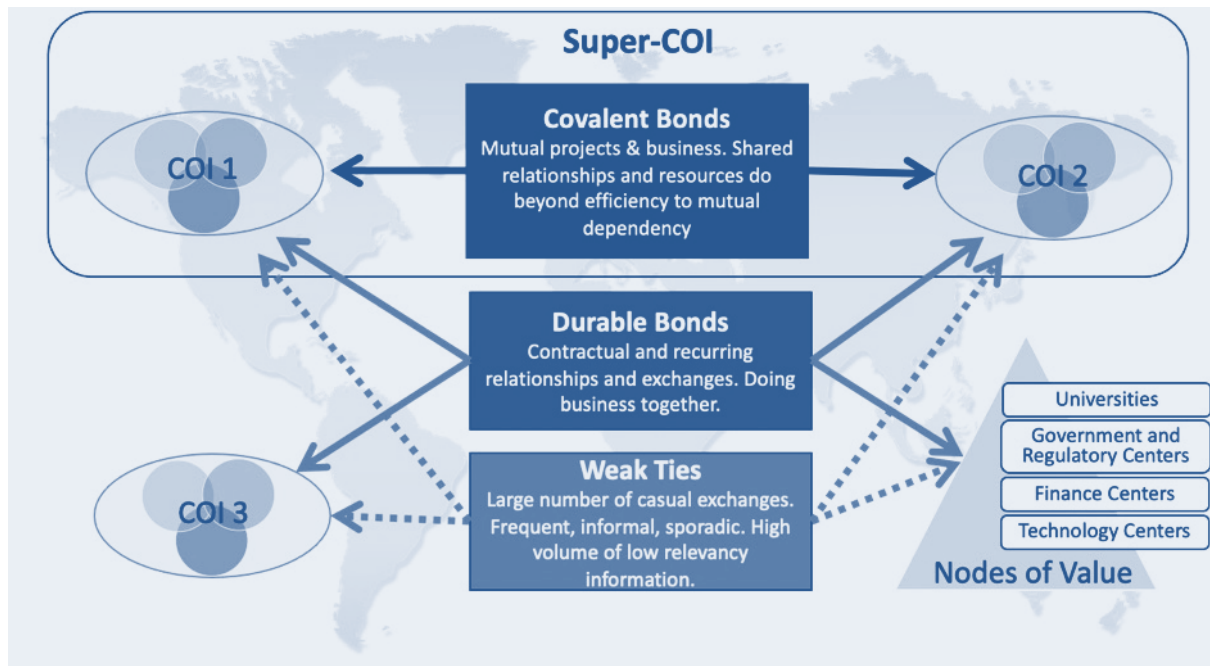
Chapter 3: Future research for holistic, practitioner-friendly impact

Chapter 3 looks to the future of impact-based VC. It examines how new and developing research avenues might shape the journey towards holistic impact; intrinsically and extrinsically, within both first and second-order actors. It acknowledges the need for further research into areas outside of the Anglosphere and explores how AI and digital technologies will influence impact measurement and reporting, harnessing extrinsic levers. It concludes with a study into the power of intrinsic motivations and how Agent-Based Models (ABMs) can be used to help us better understand investment decisions from a behavioural stance.

This report has focused on creating a pragmatic, practitioner-friendly approach to holistic impact investing. Whilst we appreciate that this is not an exhaustive guide, it has clearly outlined practical ways in which both first and second-order actors can harness intrinsic and extrinsic motivations to enact positive and impactful change in line with current research and current best practice. This final section explores how best to move forward with the nascent VC impact investing field, continuing the journey to truly holistic, practitioner friendly, venture-based impact.

3.1 Exploring how the findings vary when focus is applied to different regions

- We are conscious that this report, and the research on which it is based, is UK and US centric. There is a need to expand horizons to include Europe, Australia, Africa, Asia and Latin America. The varying investment ecosystems of each region will undoubtedly operate to different effects. First-order VC funds will have diverse motivations and leverage with which to influence diverse second-order agents. We intend this report to be the first of many, with future projects focusing on wider geographical regions to create appropriate and pragmatic frameworks.
- Whilst the nuances and complexities of different investment ecosystems should not be simplified and condensed into a 'one size fits all' impact methodology, there are many lessons that non-UK/US VC impact investors can onboard. These lessons surround intrinsic motivations and sound impact measurement frameworks based on best practice.
- We must come together as a global impact investing community. Many of the existential challenges that society faces, such as climate change and a global pandemic, can only be effectively addressed with collective action. To cooperate as an international community, it is essential that we each understand how VC and impact investing operate in different geographies.
 - Engel and del-Palacio's 'Global Network of COIs' (2011) visualises the symbiotic nature of clusters of innovation, illustrating how "individuals, companies, universities and other players in COI are connected to other, sometimes globally distant COI, through diverse mechanisms including weak ties, durable bonds and covalent bonds." (p.27). It is these global networks and mechanisms that investors should look to exploit and develop to accelerate innovation, and not neglect when pursuing domestic policy.



Source: Adapted from Engel and del-Palacio (2011); reprinted with permission from the California Management Review

3.2 The use of Artificial Intelligence and developing technologies to verify impact

- The growing sophistication of AI and machine learning technologies is beginning, and will continue, to have profound effects on impact and ESG data analysis. AI programmes are able to process large and complex amounts of traditionally incomparable ESG data. JPMorgan Asset Management's AI tool, ThemeBot, has begun to do this, building thematic funds with the use of Natural Language Processing (NLP). The NLP ThemeBot programme is capable of screening more than 10,000 stocks globally. It analyses 'hundreds of millions of data sources' from news articles to regulatory filings, and identifies stocks with the highest exposure to a theme to generate a high relevance portfolio (Lobo, 2019). So far it has been used to create and manage funds on themes such as Genetic Therapies and Climate Change, but there is clear scope for expansion to cover SDG-related themes. Truvalue Labs also uses AI and NLP, in a similar way, to provide alternative ESG data insights to institutional investors, such as the UK's Brunel Pension Partnership, State Street and GPIF⁵⁰. There are potential applications of NLP as comprehensive and efficient tools for impact investors, preventing missed opportunities, analysing previously incomprehensible levels of data and cutting out one of the most resource-heavy and time-consuming elements of the investment cycle. AI-enabled NLP is a pragmatic and practitioner-friendly future avenue. Further work is required to refine and scale this technology, making it available to funds of all sizes.
- Artificial Intelligence is also facilitating the measurement and monitoring of real-time impact and outputs. Treedom is beginning to show what is possible in terms of tracking the direct impact of an investment, presenting regular data to the consumer

⁵⁰ See <https://www.finextra.com/pressarticle/84018/truvalue-labs-and-solactive-launch-new-generation-of-ai-powered-esg-indexes>

rather than episodic analysis (See case study in Section 1.4.). Clarity AI is also leveraging big data and machine learning to create actionable impact insights to empower investors, be they funds, local governments or countries.⁵¹

- GPS and satellite imaging will play a key role in the real-time monitoring of impact. Such technologies may well feed into future impact audit or assurance proofs. Blockchain and distributed ledger technology (DLT) also promise to uphold the integrity of impact data, reporting impact peer-to-peer in a transparent way. G17Eco aims to deliver trusted and timely data to stakeholders, using DLT, whilst also providing impact measurement and monitoring platforms⁵². Whilst blockchain and DLT could provide a transparent way to legitimise purported impact and assign traceable responsibility, the problem of the medium's energy usage (needed for sufficient programming and computing power) must be addressed (Long, 2021).⁵³
- Artificial Intelligence and other disruptive technologies, such as blockchain and DLT, are set to be useful and practical tools for ensuring impact and extrinsic motivations are met, and reported reliably and transparently. However, such disruptive technologies must be used in a transparent and non-biased way. Community standards, interventions and regulations must be set in place so that technologies are implemented responsibly.

3.3 The power of inspiration

- There is real value in mentoring, brainstorming and encouraging lateral thinking in order to create pivots and alternative, impact-orientated paths for founders and their boards.
- Mentoring and inspiring investment actors can be done through the transparent sharing of experience. Community platforms, events and panels can facilitate the sharing of 'war stories'; learning from both those who failed, as well as those who succeeded, understanding the various moral dilemmas that exist and the trade offs that come with the conflicts between making money and ethics.
- Harnessing the potential for understanding risk and impacts, and how the two relate together, could enable founders and teams to engage with their shareholders, boards and stakeholders to find the right balance in conflicts of interest.
- A process of continuous review should be in place to ensure that, when a company pivots, impact is prioritised. The transitory nature of regulatory environments, seen in both the case of big tech and CO2 emissions, demonstrate the need for impact and innovation to be part of the ongoing reinvention of firms.

3.4 Envisioning a behavioural approach to understanding impact investment

- Behavioural economic approaches, such as the emergent field of Agent-Based Modelling (ABM), are beginning to be implemented to understand the behavioural dynamics involved in different systems. ABM has recently been harnessed to understand how the venture ecosystem operates, modelling not just the VCs and

⁵¹ See <https://clarity.ai/>

⁵² See <https://www.g17.eco/> and <https://monitoring.g17.eco/world-tracker>

⁵³ There are moves toward reducing blockchain's growing carbon footprint, with initiatives like the Crypto Climate Accord.

entrepreneurs, but also different sectors. Such modelling has the potential to highlight the most promising areas to generate desired impacts, such as government, director level board governance, consumer action, and pensions behaviour.

- The power of such simulations to understand new markets, where historic data on performance is limited, such as ESG and impact related markets, is highlighted by Jean Phillippe-Bouchaud, “when you understand better the mechanisms underlying the subjects you are studying, the more you can extract value from very weak signals... you can grasp very subtle effects...” He argues that, “there is a lot of analysis to be done on input and output of firms... you are green because of the other actors in your network.” (2020).
- ABMs simulate interactions between different agents. Each agent is autonomous, and the mechanisms which dictate its interactions are defined by the typology selected for the ABM. Environmental factors, or ‘shocks’, can influence the way these agents interact. ABMs are stochastic, in that each iteration “draws results different from the previous ones when it is repeatedly driven despite the same input values.” (Shim et al., 2012).
 - In the venture context, these models are being used to simulate the interactions between first-order agents: the management team, the nature of the product and intellectual capital. Quantitative methods are necessary when modelling the entrepreneurial process, because qualitative methods used (i.e., interviews with entrepreneurs) can provide inaccurate information, distorting the research process based on subjective views and aspirations (Mckelvey, 2004). ABM appears to be the “most compatible approach” for researchers looking for optimisation simulations in VC, “according to the complexity of the problem and the wide range of decision makers.” (Hasheminejad et al., 2021).
 - Using ABMs, researchers are endeavouring to predict the likely success of a venture by simulating the probable interactions experienced by the different agents involved. Environmental factors, such as the geographic location of each agent, are factored into these models.
- Notable, cutting-edge applications of Agent-Based Modelling in VC include:
 - Shim et al’s selection of key venture concepts using a domain corpus that pulled key terms from entrepreneurial research (2012). Establishing relationships between each of these key terms, the group built an ABM using the key concepts as nodes, and the relationship between each node as the interaction. This experiment was successful in quantifying opportunity-driven entrepreneurial activities.
 - The majority of ABMs observed interactions between primary agents. These studies did not analyse the relationship between these primary agents and secondary agents, a crucial determinant of a venture’s success. In response to this dearth of research, the model developed by Siallagan et al., (2017) aids investors in predicting future start-up performance based on stakeholder interaction effectiveness. This model was successful, and it enabled Corporate Venture Capital firms (CVCs) to select Indonesian start-ups in the mobile application, payment solution and digital advertising spaces. The research conducted by Siallagan et al., was place-based and regionally specific.

- Researchers at the University of Iran have aimed for a less geographically specific approach, simulating portfolio optimisation based on the key attributes of interaction between “VCFs [Venture Capital Funds] and start-ups as agents” (Hasheminejad et al., 2021). Again, the focus is on modelling interactions between primary agents, without incorporating the actions of broader players within the VC ecosystem as agents in the model.
- ABMs have also been used to model the ratio of capital invested by the entrepreneur in a venture to that invested by the VC fund and how this affects performance and profitability (Xu et al., 2021). The focus is again on first-order agents.
- Other behavioural approaches, such as the causal-loop diagramming and mathematical modelling of the Sustaining Peace Project⁵⁴, may well have useful secondary applications to impact VC. Causal-loop diagramming records and visualises the ways in which different factors and processes interact to influence the likelihood of an outcome. Within the Sustaining Peace Project this outcome is maintaining peace; for impact investing it could be the likelihood that an impactful externality is produced, or the likelihood of extrinsic and intrinsic levers influencing a second-order actor. The Sustaining Peace Project has gone further and mathematised this model⁵⁵, in order to see how distinct factors interact over time to produce ‘attractor patterns’ (high degrees of positive reciprocity between groups). There is room here for direct application to investment processes and for researchers to identify channels of reciprocity between different stakeholders. This has started to be looked into with the Impact Measurement and Management Systems Maps found in a University of Oxford, Saïd Business School and GSG lead report, ‘Impact Measurement & Management (IMM): Impact Investing’s Evolving Ecosystem’ (2021).

3.5 Recommendations for future research

- On the journey towards holistic impact, all elements of the practice must be addressed: intrinsic, extrinsic, first-order actors and second-order actors. Whilst this report did not investigate the roles of insurance and sovereign wealth actors in impact and VC, it recognises the importance of such actors in the field of impact investing and the need for future research into these groups’ role in the landscape.
- This report largely focuses on practices within the UK and the US, but there must be extrinsic pressure to develop truly global research; to examine how findings vary in different parts of the world, and how place-based practice can best inform each geographical region’s practitioners.
- Further research is required into the potential for VC funds to adopt AI impact tools, and for actors to harness developing, disruptive technologies, such as blockchain, DLT, FinTech, peer-to-peer sharing and satellite imagery.
- Future research might also look to understand how intrinsic motivations influence the investment landscape. This may be in the field of first-order VCs and entrepreneur’s mentoring groups, or in exploring the less understood, but equally important, roles second-order agents have to play in stimulating impactful ventures.

⁵⁴ See <http://sustainingpeaceproject.com/peace-tech/visualizing-sustainable-peace>

⁵⁵ See <http://sustainingpeaceproject.com/peace-tech/mathematical-model>

- Second-order levers could be modelled to understand the impact of other actors beyond entrepreneurs and VC. This exerted influence may prove more decisive than current approaches, such as legal requirements for Directors to help society, or government and investors, to underwrite large scale pilots, procurement carve outs, competitions and no-strings prizes for successful impact ventures.
- There is scope for a greater focus on ABM. FPC, and its partners, could potentially commission an ABM that simulates interactions between first and second-order agents. This could clarify an understanding of which actors have the greatest leverage on impact outcomes and issues. Harnessing ABM may assist in educating the industry, and beyond, as to the role of innovation clusters in impact; for better or for worse.
- Further avenues of research may look to big data to glean the extent to which actors' inherent bias influences investment decisions, both positively and negatively.
- Finally, the impact investing community must nurture healthy innovation clusters for impact and harness the insights gained from research and simulation to move towards standardisation.

In Conclusion

Impact investing is a nascent and rapidly evolving field with the potential to help address our most pressing societal, economic and environmental concerns during this time of immense change. Lord Wei and the Future Planet Capital team hope that this report will contribute to the rich and emerging literature in the impact space, provide food for thought for practitioners and policy makers, and above all lead to real change when action is needed, now more than ever.

APPENDIX



Appendix

1. The IMP's 'Dimensions of Impact'

Enterprises' intentions relate to three types of impact: A, B or C

Illustrative example



Source: Impact Management Project



Classifying an enterprise's impacts into A, B or C

Dimension	Assessment to look for...				
<input type="checkbox"/> What	Unknown	Important negative outcomes	Important negative outcome(s)	Important positive outcome(s)	Important positive outcome(s)
<input type="radio"/> Who	Unknown	Various	Underserved	Various	Underserved
<input type="checkbox"/> How Much	Depth	Unknown	Various	High degree of positive change	High degree of positive change and/or
	Scale	Unknown	Various	Various	Various
	Duration	Unknown	Various	Various	Various
<input type="checkbox"/> Contribution	Unknown	Various	Likely the same or better	Likely the same or better	Likely better
<input type="checkbox"/> Risk	Unknown	Various	Various	Various	Various
	↓	↓	↓	↓	↓
Classification of impact	May cause harm	Does cause harm	Act to avoid harm	Benefit stakeholders	Contribute to solutions

Source: Impact Management Project



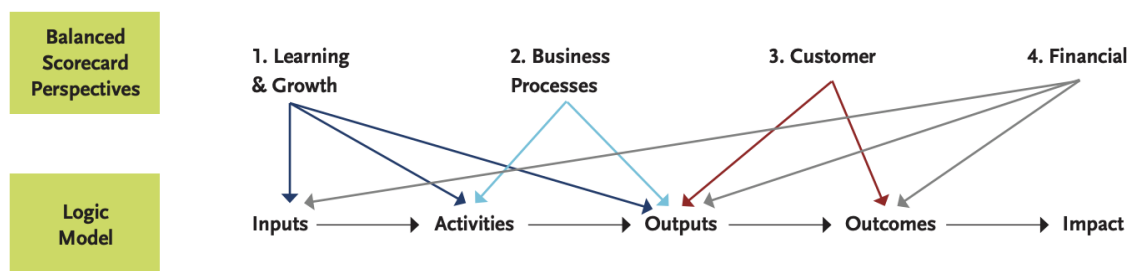
Source: <https://impactmanagementproject.com/impact-management/how-investors-manage-impact/>

2. Progress Benchmarks alongside the UN's SDGs:

- Social Progress Imperative
- Future-Fit Business Benchmark
- MSCI ESG Sustainable Impact Metrics
- Global Value Exchange
- UN IFAD Sustainable Livelihoods Framework
- Big Society Capital's Outcomes Matrix
- Cambridge Investment Leaders Group

3. So and Staskevicius' Balanced Scorecard Model (2015)

Figure 4.8 Link Between Balanced Scorecard and Logic Model



4. Article 9

As of March 2021, firms operating in the EU have additional sustainability-related disclosure requirements surrounding the manner in which sustainability risks are integrated into their investment decisions, as well as an assessment of the likely impacts of sustainability risks on the returns of funds.

An Article 9 product “has sustainable investment as its objective”. A “sustainable investment”, as defined under Article 2 (17) of the Sustainability Finance Disclosure Regulation (SFDR), is an

“investment in an economic activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and greenhouse gas emissions, or on its impact on biodiversity and the circular economy, or an investment in an economic activity that contributes to a social objective, in particular, an investment that contributes to tackling inequality or that fosters social cohesion, social integration and labour relations, or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance.” - 317/8, Article 2(17) ‘Definitions’, Official Journal of the European Union

The Investment Association (2020) notes that there are also incoming requirements, expected to be enforced from January 2022, for Article 9 products to disclose the extent to which they contribute to the six environmental objectives set out in the Taxonomy Regulation:

According to Article 9 of the Taxonomy Regulation, these objectives are as follows:

- a. climate change mitigation;*
- b. climate change adaptation;*
- c. the sustainable use and protection of water and marine resources;*
- d. the transition to a circular economy;*
- e. pollution prevention and control;*
- f. the protection and restoration of biodiversity and ecosystems.*

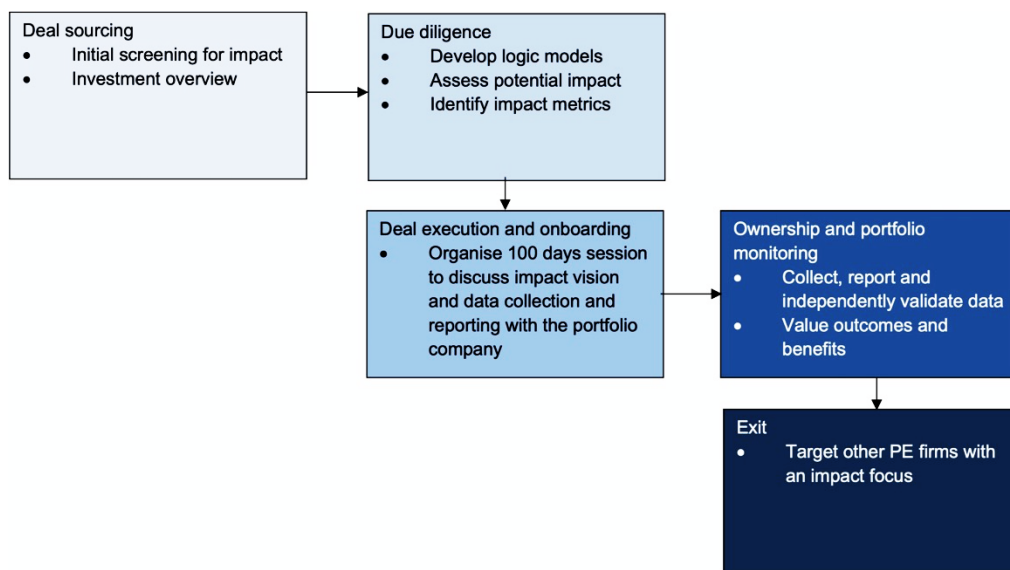
If you have Article 9 funds that are contributing to environmental objectives, from January 2022, you need to disclose whether they are contributing to climate change mitigation or climate change adaptation according to the Taxonomy. You also need to disclose the extent to which the funds' underlying investments qualify as Taxonomy-compliant. From the same date, these details will also need to be included in periodic disclosures. From January 2022, under SFDR, you will need to include how your Article 9 funds have met their sustainability objectives in periodic reporting.

In July 2019, the UK committed to match EU levels of sustainable finance governance and regulation. The UK is in the process of deciding which pieces of regulation it wishes to remain consistent with – in part or in full. Irrespective of whether the UK remains consistent with the EU regulatory regime with respect to sustainable finance, some firms may still adopt the EU requirements.

See The Investment Association's 'Fund Communication of Responsible Investment' (2020) or Deloitte's 'Sustainable Finance Disclosure Regulation' (2020-2021) series for further detail.

5. Impact Best Practice - Future Planet Capital (FPC):

Future Planet Capital's impact purview is divided into five key impact areas, aligned with the UN's SDGs: Climate change, Education, Health, Security and Sustainable growth. The impact due diligence conducted at the origination phase is intended to facilitate the comparability of impact between different investment opportunities. Comparability is achieved through the use of a consistent framework. Below is a visual representation of the cycle:



- Stage 1: Deal Sourcing

The first stage of FPC's management of impact during an investment is designed to be fast and intuitive, consisting of two steps - an initial screening and an investment overview. FPC screens all their opportunities against pre-set screening criteria, consisting of six dimensions.

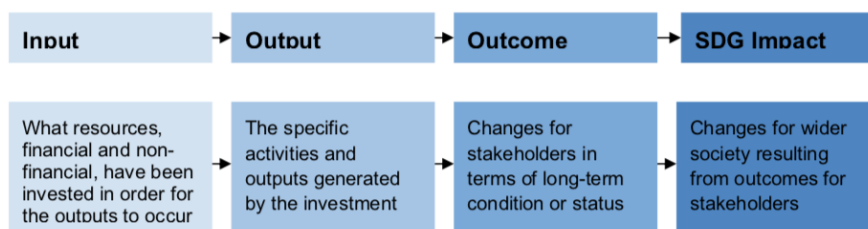
- Obvious impact - Does the company have a clear and obvious impact in one of FPC's five impact areas?
- Alignment - Do the company's products/services clearly align with at least one SDG target?
- What - How important is that impact in the context of the geography or market the company is operating in?
- How much and Who - At a high level, what is the breadth and depth of the impact, and who are the beneficiaries?
- Network - Is there potential for FPC to add impact value to the company by leveraging its network?
- Scalability – What is the current market size of the company compared to the size of the market?

They look to align deals to their own impact areas, the UN SDGs and Targets, and APG's Investable Sectors. During this stage, the opportunity is also checked for maximal scale: Does the company or service have a potential \$1trn dollar external value? Can it possibly help 1bn people? If the screening results are approved by the first Internal IC, then an Investment Overview is conducted. Within this Investment Overview the first of the impact value gaps is calculated as the full impact opportunity of the investment using purchasing power parity values. This investment overview is then put forward to a second Internal IC for review. The impact value gap process is captured, to some extent, below:

Impact		Criteria	Measure
Qualitative (Screening)		Obvious Impact	[Y/N]
		Impact	[FPC Five Areas]
		APG Taxonomy	[Industry(s)]
		Founders Mission (Impact) Driven	[Y/N]
		SDG Match	[SDG]
Quantitative (Ranking)		Importance (What)	[SDG Importance Ranking (0-5)] or [APG Rank of Investment Areas (0-50)]
		Scale (Breadth)	[#People in Addressable Market]
		Quality (Depth)	[1: Marginal Difference, 2: Meaningful, 3: Deep]
		Need (Who)	[Target Market Life Exp * Avg. Income * PPP] -- GPI...
		Additionality (Contribution)	[SMM Currently Invested Each Year (+ Human Capital?)]
	Risk (Outcome)	[Seed: 5, Series A: 4, Series B: 3, Growth: 2]	
		Score	[What*Breadth*Depth*Need/Who*Contribution*Risk]
Scalability		Criteria	Measure
Quantitative (Ranking)		Addressable Market Size	[\$]
		Capital Requirement	[Similar Companies, Total Raised to Exit]
		Score	[Normalized Mkt Size / Capital Requirement]
University		Criteria	Measure
Qualitative (Screening)		University Link	[5] Spinout from Partner University [4] Founder from Partner University [3] Research Link to Partner University [2] Benefits from Ecosystem, Human Capital etc. [1] Geographical Link - Based in Centre of Innovation [0] No Link
Quantitative		Score	[Multiple Choice]
Network		Criteria	Measure
Qualitative (Screening)			[Y/N]
		Ability to Raise Significant Capital	[Y/N]
		Clear Strategic Match to Advisor / Investor / SP	[Y/N]
		LinkedIn Connections	[Count]
		Score	[
Team / Track Record		Criteria	Measure
		Revenues?	[Y/N]
		Blue Chip Investor?	[Y/N]
		Repeat Entrepreneur Founder?	[Y/N]
		#Female Founders	
		#Male Founders	
		Score	[

- Stage 2: Scale Check, Due Diligence (DD) and Investment Overview

If the potential investment is approved at Stage 1, it proceeds to the impact due diligence stage. This process consists of three steps - developing a logic model, assessing potential impact and identifying impact metrics. Logic models are a crucial tool in impact management. Funds could use them to model the material impacts generated by a potential investment, and to identify the most relevant metrics for monitoring performance.

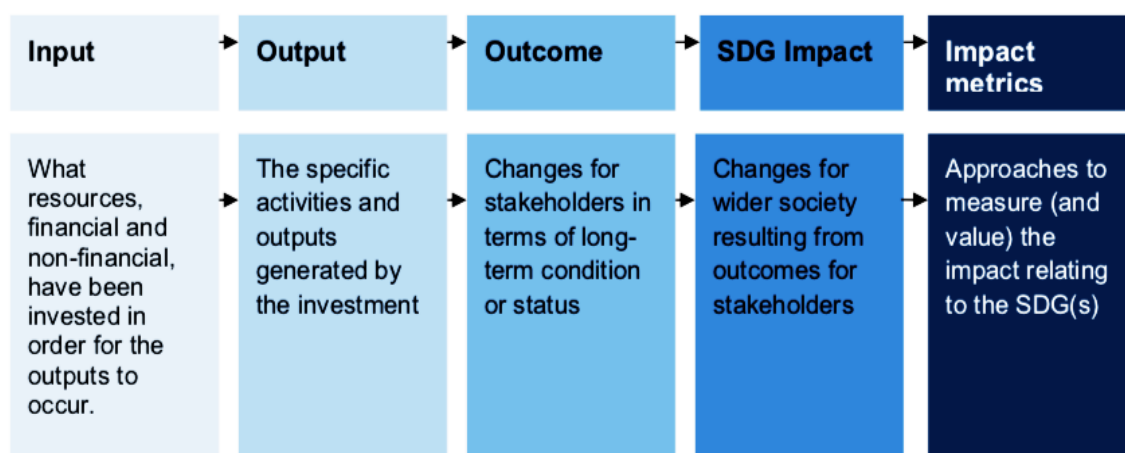


FPC's impact due diligence framework aligns with emerging best practice. Building on the findings of the IMP, it adopts the five dimensions of impact to best assess potential impact: What, Who, How Much, Contribution and Risk.

IMP's dimension of impact	FPC's application
WHAT	<p>What are the SDG related impacts and how important are they to the people or the planet?</p> <p>Assess the relevance/importance of the SDG targets identified by the logic model(s) in the context of the company's target geography.</p>
HOW MUCH	<p>How significant will the likely impact be in a given time period?</p> <p>Assess how deep the investment's impact is likely to be based on the following considerations:</p> <ul style="list-style-type: none"> - 'How deep' is the expected impact; - 'How many' people are expected to experience this impact; - 'How long' it takes for the impacts to materialise and how long it is expected to last for.
WHO	<p>Who experiences this impact and how underserved are they in relation to this impact?</p> <p>Consider the demographic and geographic characteristics of the beneficiaries (both people and the environment), including the extent to which they are currently underserved.</p>
CONTRIBUTION	<p>What is FPC's contribution as an investor?</p> <p>FPC targets growth-stage companies are generally in the Series B and C stage of funding. Investor contribution will be considered in the following areas:</p> <ul style="list-style-type: none"> - Impact influence: What is FPC's potential to enhance or amplify the nature and scale of impact through its investment, including through its network?

	- Systemic change: How significant is the potential for FPC to drive market-level change?
RISK	<p>What are the risks to the delivery of intended impact and how significant are they?</p> <p>Consider the risk factors that may result in the intended impact not being delivered, or the actual impact being different from the intended impact, and the likelihood of these risk factors materialising. Consider also any Environmental, Social and Governance (ESG) risks that could detract from the achievement of the intended impact.</p>

The output of this process is a dashboard showing how the investment has scored on the 1-5 scale for each of the five dimensions. Relevant metrics are then identified, enabling monitoring and management of the delivery of the envisaged SDG impacts. The logic model(s) developed help identify relevant metrics:



The DD process also incorporates FPC's plans to address the identified impact value gap. This involves calculating the net present value (NPV) of the impact with applied discount rates, using 'real' relative figures based on target market (e.g. QALYs). The results of this due diligence are then presented to the final Internal IC, and if approved, to the Investment Governance Board.

- Stage 3: Deal Execution and Onboarding

During this stage, the investment opportunity is presented to financial compliance boards and focus is on financial projections, structuring and risk. This stage is unique to each fund with no explicit focus on impact compliance present. Final legal negotiations begin and the subscription is executed. A key element of onboarding, identified by FPC, and to be followed by other VC actors, is discussion and agreement with the investee company regarding its

impact ambition and how it will be embedded into its engagement with the company. Following this, funds should discuss how the company can collect and report data to manage impact and ensure progress.

- Stage 4: Ownership and Monitoring:

This penultimate stage consists of tracking impact on beneficiaries, measuring explicit positive impact and reporting on that progress. Impact measurement methodologies at this stage will vary, depending on scale of the investee and resources present.⁵⁶ Any impact measures or KPIs identified form part of the core management information subject to governance, systems, processes and controls. Additionally, FPC uses this reported data annually to support its impact value gap analysis.

- Stage 5: Exit:

Whilst FPC is still developing their formal exit model, they have a preliminary process. FPC targets other investors that aim to invest in high-impact, or high-impact potential, companies. This provides an opportunity for other investors in the impact space to acquire a growing company and further scale its impact potential. Upon exit, Future Planet would also look to conduct an impact audit to determine, for themselves, partners and the investees, what positive externalities were created by the investment. This final step should be adopted by all VC funds, as it ensures the credibility of impact claims.

6. How government clusters can influence VC and impact

i. Procurement - Be a First Customer

- Start-ups can be innovative with high long-term impact potential, but may initially have no, or very few, customers. There is a role for the government to intervene here:
 - Accelerating the growth of innovative start-ups and scale-ups with high impact potential falls within a government's primary mandate - creating a safe stable society by solving key societal and environmental problems.
 - Governments have a public policy motivation to take risks that those with fiduciary duties cannot.
 - Many of our interviewees suggested that government procurement bodies should scale-up their acquisition of innovative products and services, taking more risk as a first customer.
 - *"The government needs to take more risks as a customer in disruptive products and services, as it is a real challenge to companies in these spaces to get customers."* - Andy Muir
 - Start-ups require custom and financing, both of which the UK government could provide as first customer.
 - The need to do so has been recognised by the UK R&D Roadmap, which describes procurement and first customer, early adopter measures as an "underutilised lever." (2020, p.28).

⁵⁶ Chapter 2 covers this in more detail.

- The Roadmap also suggests ways in which a first customer role might be adopted, pointing towards recently published guidelines for Government Artificial Intelligence procurement as an example⁵⁷. The focus on NHS England, one of the world's largest single procurers of technology and health innovation, and its taking a greater role in seeding and adopting innovation might also be explored; alongside exploitation of the Innovative Medicines Fund and the Accelerated Access Collaborative (AAC) initiatives.
- Whilst governments must play a greater role, their reservations and hesitance to do so are understandable. Governments are duty-bound to their citizens to spend public funds efficiently and to minimise waste. As a result, government procurement is, in general, risk averse, keen to avoid the public criticism attached to the failure of high-risk investments.
 - Barack Obama provided a \$535 million loan guarantee to Solyndra, a solar-cell manufacturer, and faced obloquy because the technology failed. Other investments performed, such as the January 2010 direct loan given to Tesla, but the noise generated by Solyndra's crash silenced the Government's efforts to validate the rest of the portfolio (Osaka & Penner, 2021).
- Current systems do not reward innovative procurement and a fear of failure creates an inertia that prevents rationalised procurement.
 - As one of our interviewees observed, "the public sector is allergic to failure. Every time there is a failure, you have to have a public inquiry into it. The cost of failure in the public sector is far too high."
 - There are also risks to the start-ups engaging in public procurement processes. The pressure of working for the citizenry, the glare of the media and the scrutiny of politicians, combined with the bureaucracy and delays of government process, are common reasons why only large companies tend to pursue government procurement contracts successfully.
 - One of our interviewees suggested that the only government procurement systems that might work more effectively are military and defence initiatives, under the auspices of national security. This is on the basis that the procurement happens out of the public eye making failure less visible and more justifiable. Higher costs would also more likely be tolerated, in order to achieve advantage.
- To overcome these challenges there needs to be greater measurement of, and accountability around, public funding of impact investments, ensuring it is aligned to the long-term nature of the investment.
- Governments can build up narratives and arms-length arrangements, for example DARPA (formerly ARPA), to manage public pressure and to encourage the deployment of funds into risky, but important, new industries, such as those focused on addressing climate change.
 - Efforts towards this are being made. The UK government has outlined its commitment to investing at least £800 million to establish an independent funding body for advanced research, the Advanced Research & Invention

⁵⁷ Guidelines for AI procurement - <https://www.gov.uk/government/publications/guidelines-for-ai-procurement/guidelines-for-ai-procurement>

Agency (ARIA). This body, modelled on the US' Advanced Research Projects Agency (ARPA), aims to experiment with new funding models across long-term time horizons, backing breakthrough technologies and reducing bureaucracy. However, ARIA is still yet to clarify its purpose and, according to one interviewee, is in danger of becoming a missed opportunity; "Having a new mechanism is useful, more money is useful, but it [ARIA] must address the pain point of procurement... there is a worry it won't, without an explicit mission."

- Rewarding corporates and multinationals, for working with start-ups to foster innovation and impact, may be another way to help level the playing field. This can be achieved through Corporate Venture Capital arms or, more directly, through mechanisms such as cooperative or mutual procurement.
- Governments could also stimulate future procurement of impactful innovation, without exposure to direct criticism, by investing in venture stage impact investors, who have already developed rationalised procurement processes.
 - This was touched upon in the UK R&D Roadmap – "We will explore experimental funding models, building on approaches developed by venture capital firms, enabling us to take more calculated risks." (2020, p.30).

ii. Procurement - Decentralisation can be helpful in the distribution of risk:

- The US is generally seen as having a more decentralised system of procurement than the UK:
 - US federal agencies fund innovation. Currently, 11 federal agencies participate in the Small Business Innovation Research (SBIR) program⁵⁸ and 5 of those agencies also participate in the Small Business Technology Transfer (STTR) program⁵⁹.
 - Beyond this, decentralised state and municipal bond issuance gives these regional governments real power and advocacy to purchase solutions. Both states, and tens of thousands of municipalities, compete to be the first customer for impactful ventures, increasing funding opportunities for entrepreneurs. As one of our interviewees noted, the patchwork of different sources of funding in the US federalist system, "actually creates quite an innovative environment."
 - Government can, in effect, experiment with innovation at the regional level. An investment that does not work in one region (e.g. rural), might be effective in another (e.g. urban).
 - In the US, an "aggregation of different sources of capital - federal money, state money, bank and philanthropic investment", all combine to help develop innovative start-ups.
- The UK, in contrast, has a hyper-centralised system of procurement - "most of the system for R&D is highly centralised, which has limited the scope" (UK R&D Roadmap):

⁵⁸ The SBIR = 3.2% of the extramural research budget for federal agencies with a budget greater than \$100 M per year ~\$3.2 billion minimum spend each year.

⁵⁹ The STTR = 0.45% of the extramural research budget for federal agencies with a budget greater than \$1B per year ~\$450 million minimum spend each year.

- Contracts and grants are awarded by the subsidiary of the Small Business Research Initiative (SBRI), itself a subsidiary of Innovate UK.
- Whilst the SBRI is used as a poster child in the UK for government procurement supporting innovation, several of our interviewees expressed concern about this method of procurement; “all the benefits of a decentralised system are squished, as lots of promising stuff goes to Westminster and dies there”.
- The current UK government will be unable to fulfil its promises to ‘Level Up’ without giving more autonomy on impactful innovation at the local level. The R&D Place Strategy is one solution being developed. It aims to coordinate approaches with devolved administrations to address regional imbalances in research and innovation.
- Channels for more decentralised innovation support in the UK include Local Enterprise Partnerships and Regional Mayors. These bodies have very limited ability to raise taxes or issue bonds to fund local economic development. Many of the laws that could be harnessed locally fall within the jurisdiction of national assemblies or the UK Parliament.
- A real challenge in the UK lies in whether the government can channel sufficient capital, and talent⁶⁰, to back impactful solutions and companies, or moves towards the US model of regulatory and incentive-based competition. Supercharged by first-loss mechanisms, this approach, according to one interviewee, leads to genuine community advocacy.
- One suggestion worth exploring further is the idea of enabling local bodies to allocate a fraction of their procurement budgets to backing solutions for future procurement rounds. Central government could then match the allocations on an escalator basis; the more the government matches, the greater the successes achieved by local procurement bodies in securing more impactful solutions, over multiple years.

iii. Procurement - Adapt legislation to streamline government procurement for impact:

- Aside from the need for governments to avoid failure, they must also prevent pork-barrel criticisms.
- This may explain why government procurement screens are so rigid, especially in the UK where centralised procurement methods are inextricably linked to the government at a national level.
- Rigorous screening methods prove a barrier to entry for high-impact potential start-ups.
- To address this, legislation must be adapted to make it possible for government bodies to procure more easily from impactful start-ups. Such start-ups might not have a long trading history, or who may be seen as higher risk. One option could be to allocate a percentage (e.g., 1%) of all public procurement budgets towards trialling new entrants. Another potential policy might be to waive state aid rules for transparent, impactful challengers.

⁶⁰ One interviewee noted here that, ‘The hyper centralised UK model means that the capacity and capability to thoughtfully procure risky new products currently cannot exist at scale regionally.’

iv. Procurement - Reward Civil Servants:

- In the face of a highly risk averse procurement culture, government civil servants should be incentivised to take on an element of risk.
- The government might consider rewarding those civil servants and procurement leaders who have enabled trials of innovative, impactful ventures, with lottery-style, life-changing prizes
- Currently the UK and US have various awards programmes in place to recognise innovative civil servants⁶¹, but these do not explicitly cover the procurement of innovation generally, or for impact.

v. Proof of concept funding:

- Seed to Series B start-ups with high-impact potential, but without proven commercial success, can fail to attract the necessary funding unless they can demonstrate proof of concept and get their initial facility and products into the marketplace. These ventures can often require more capital than venture funds or private sector customers can provide, given the risks involved.
- Larger institutional financiers, who have the necessary capital to provide proof of concept funding, do not take on high-risk ventures that require lots of resources to gain critical mass.
- There is a role for the government, therefore, in the provision of proof-of-concept funding. Institutions, such as Innovate UK and the SBIR/STTR programmes in the US, have set aside government funds to back critical proof of concept facilities, for example, vaccine testing sites.
 - As we have seen with the response to the COVID-19 pandemic, government funding is critical in proving concepts so that they can gain further investment and access new markets. At least 97% of the funding for the development of the Oxford/AstraZeneca COVID-19 vaccine came from taxpayers or charitable trusts (Safi, 2021).
- If proof of concept funding was provided by governments under normal circumstances, without the shock created by the pandemic, then governments could frequently increase the commercial traction of nascent, high impact potential solutions to global problems, such as climate change.

vi. Infrastructure - Invest in innovation clusters:

- Governments can often build innovation clusters at centres of learning, creating environments that accelerate innovation. The benefits provided by innovation clusters can be significant and help facilitate the commercialisation of impactful innovation.
- Governments could provide physical spaces and access to equipment, bringing together the best talent from diverse industries and companies.
- There are challenges with this approach since the establishment of innovation clusters often requires long-term planning and construction, misaligned to the short-term political cycle. There is a need for stable long-term funding so that the infrastructure achieves awareness and reliability. This may require dedicated

⁶¹ See <https://civilservice.blog.gov.uk/2021/03/10/civil-service-awards-2020-the-innovation-award/>

institutions; one interviewee suggested to look towards the NYC Economic Development Corporation for inspiration.

vii. Operate as an anchor LP:

- There are increasing calls for governments to develop stakes in funds as LPs and, by extension, take a position in start-ups directly. This could be done through open innovation commons approaches or via respective sovereign wealth funds.
- Regarding the international development landscape, one interviewee suggested governments of developing countries provide first loss insurance as patient LPs, for the higher risk, higher impact-return markets.
- Given that VCs are steered by what LPs want to invest in, this could represent a powerful way for governments to stimulate impact-driven ventures. In the UK, Britain's largest LP, the British Business Bank, has the potential to play this steering role, taking stakes in venture funds that can help address impact related challenges. It's mandate currently does not extend to impact, presenting a possible future avenue of exploration.
- The challenge with governments acting as LPs lies in most treasuries operating on annual or triennial cycles. One interviewee pointed out, "money will come back, but the problem is because it is a long-term investment - 'patient capital', it takes seven to ten years to come back, which governments tend to count as a loss or as spent."

viii. Provide tax and fiscal incentives:

- There are existing start-up mechanisms facilitated by governments. One interviewee noted that this part of the UK tax relief system has proven effective, illustrated by the Enterprise Investment Scheme (EIS), the Seed Enterprise Investment Scheme (SEIS) and Venture Capital Trusts (VCT).
- There is also room for innovative Research and Development tax credit schemes and broader support for businesses to start or scale-up (UK R&D Roadmap, 2020).
- The possibility of green equivalents to the EIS and SEIS has potential and is an avenue to be explored. Aligned to this, there is room for the introduction of green tax-breaks for early-stage investments in impact areas, and of legislation underlying impact, with green markets created by policymakers centred around incentives, such as the solar power feed in tariff, and fines around areas like the upcoming ULEZ.
- A novel suggestion surrounds legal exemptions from Inheritance Tax (IHT) for defined benefit (DB) pensions, of which more than 5% is impactfully invested towards progress within the SDGs. There is room here for local authority pension providers, of whom only 30% engage in impact investing, to divert capital towards impact and engage with this transition directly.
- The government could also consider enabling FinTech players to include impactful investing as a tax-free investment (we suggest for quantities of up to £3000) for those saving via apps, or other means, into ISAs or defined contribution (DC) pensions annually.

There appears to be a need to strengthen and refine the scale-up phase of venture across all sectors in the UK. Currently, the country is losing scale-ups across all sectors to countries, including the US.

The British Business Bank is often cited as a solution in roadmaps and policy; its goal is to retain and grow scale-ups in the UK. However, interviewees suggested that there is insufficient money in the system to assure scale. Announcements, like those in the 2020 Budget to increase the Research and Development Expenditure Credit (RDEC) rate and ensure the UK remains globally competitive, should be followed up, tracked, and held to account. Similarly, the impact community must see the results of schemes, such as Expanding the Enterprise Investment Scheme and Venture Capital Trust tax reliefs.

7. How UK pension fund clusters can influence VC and impact

- Within the UK pension funds industry, there appears to be a self-fulfilling prophecy of institutionalisation within the pension funds and governing bodies, and an inhibitory regulatory landscape with regard to fees and illiquid assets.
- High levels of institutionalisation has, in the past, resulted in trustees inhibiting change in favour of low impact, 'safe' investments. As one Executive Committee member of a leading UK pension fund stated, this sort of landscape 'doesn't always lend itself well to...innovation.' Emphasis is put on low-cost pensions rather than high returns.
- As a result of this safe, risk-averse mindset, the regulatory landscape around pensions has become incredibly restrictive. The products of this are identified below:
 - Misaligned incentives within UK pension funds prevent further allocation to illiquid assets. The Bank of England, CRA and pensions regulators are all involved in the allocation process, producing insurmountable red-tape and resistance. Centralised groups are uncomfortable in deviating from the norm and will continue to encourage the UK pension industry to compete on price, rather than commitments to maximising returns, whether financial or non-financial.
 - This somewhat explains the stance against illiquid investment in the UK press; that the government is trying to raid pensioners pockets and make them pay more to fat-cat VC fund managers with high take home fees. The industry looks for the lowest asset management fees, which is unlikely to be found in impact investing or VC.
 - UK pension funds used to do more illiquid allocation, but increasing consolidation means that funds are reducing percentage allocation. The Universities Superannuation Scheme (USS) subsequently has almost no allocation to university spin-outs because it is too risky, making pensions worth a lot less than what they should be.
 - An example of these extreme risk-averse tendencies are the UK pension funds' refusal to meet government calls for illiquid assets to finance low-risk infrastructure operations, like building bridges and roads.
 - The 2019 BBB report highlights that allocation to illiquid VC need not be extensive and risk-laden. In fact, allocation doesn't have to be higher than 5%, a level which would be transformational for the country. However, Defined Contribution (DC) pensions are refusing to do so, with most currently at sub 1% (BBB & Oliver Wyman, 2019).
 - Due to the reluctance to diversify allocation, UK government pension funds are inexperienced, 'They are not qualified to make decisions, they don't know anything about VC, and it's scary.' If groups do not know what they are doing

it gets more expensive. The asset class is not intrinsically too risky for pensions. This is apparent from US pension funds like Texas Teachers, with decades of experience in VC, increasing allocation to the asset class. It is the lack of capability and experience which is a hindrance to adoption in the UK.

- Finally, as one pensions expert noted, there is ‘disconnect between saver and decision maker’. Currently, pension holders have very little choice as to where DC pensions are placed or what investment ‘bucket’ their contribution is put into, be it positively impactful or not.
- Potential solutions for the problems facing VC and UK pension funds lie in reorienting the regulatory regime for pensions around impact and in changing entrenched mindsets and processes:
 - There are promising industry avenues of progress. One interviewee highlighted the need for liquidity mechanisms, revealing that were methods pension funds could use, like multi-asset funds, to offset VC’s illiquidity.
 - The interviewee also noted how once a fund has taken the Defined Benefits (DB) allocation of insurance companies, they are presented with a financial buffer which can mitigate potential VC risk; “what we’re doing, we’re... making the most of the fact that we have this very safe part, and then we’ve got our... bit that the regulator... you could argue sensibly makes us hold, and we’re using that bit to do our VC investing.”
 - Whilst this is promising, DB presents a limited amount of capital, with the future for change, for many, lying in DC pensions. In order to take full advantage of DC pensions, UK funds must shift focus towards impact to avoid inertia and focusing on low fees and ‘safe’ returns. Education is key in doing this, whilst the rise of FinTech may also give the consumer more choice in where contributions are placed, allowing for a ‘culture shift’ to occur.
 - For UK pension funds looking to make the transition towards VC, the American market presents a case of best-practice. American pension funds have been investing in illiquid assets for decades. The Texas Teachers Pension Funds channels more money into UK VC than any British pension fund. The US appears to know what it is doing, having hired the people in-house and developed the expertise necessary to leverage the VC market. The UK pension funds could either invest in VC funds or implement their own in-house screening processes to maximise financial and impact returns (British Venture Capital Association, 2017).
 - UK pension funds are committed to paying low asset management fees. A number of our interviewees stated that this commitment needs to be reoriented around impactful returns. Pension funds need to allocate a small portion of their assets, less than 5%, to venture, and accept higher management fees for this asset allocation. For this allocation, they should also be willing to bear longer horizons and higher risk and recognise the prospect of an outsized long-term return.⁶² They should adopt a holistic view of returns. The opinion that pensions investing in VC are simply paying the ‘fat-cat fees’ may quickly be altered when the positive impact of investment is felt.

⁶² This is not to say we should not be sympathetic to UK pension funds’ plight. Unless the government and regulators give them cover for higher fees, then funds are unlikely to do this.

- Finally, there may also be room for the government to introduce countervailing rules, policies or legal changes to make UK DB pension funds, and possibly DC funds, more responsible for the negative, or lack of positive, impact brought about by investments over time, rather than a sole focus on fiduciary obligation.
- Further, UK pension funds could also facilitate place-based impact⁶³, and help the government initiative to Level-Up:
 - In a recent white paper, the Impact Investing Institute demonstrated how the Local Government Pension Schemes, with £326bn of Assets Under Management (AUM), can invest to increase place-based impact (The Good Economy, Impact Investing Institute, Pensions for Purpose, 2021).
 - With the government looking for asset managers to help unlock the UK's long-term potential as part of an "investment big bang", there is political appetite for this transition. Some £1trn investment in place-based impact investments will be required to Level-Up between 2020-30. The role of the private sector in accelerating place-based impactful innovation in the UK is crucial.
- One interviewee noted that the government has been trying to twist arms for years, attempting to encourage increased investment into all illiquid VC, not just that which targeted impact. There is continued pressure on the pension sector to change things and impact has come in alongside and behind this to add pressure.
- This is not the kind of thing that will be solved just for the impact sector - this will have to be solved for all of VC.

8. Companies Act, Part 10, Ch 2 'The General Duties':

172 - Duty to promote the success of the company

(1) A director of a company must act in the way he considers, in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard (amongst other matters) to—

- (a) the likely consequences of any decision in the long term,
- (b) the interests of the company's employees,
- (c) the need to foster the company's business relationships with suppliers, customers and others,
- (d) the impact of the company's operations on the community and the environment,
- (e) the desirability of the company maintaining a reputation for high standards of business conduct, and
- (f) the need to act fairly as between members of the company.

Please also see the UK Financial Reporting Council's Corporate Governance Code, July 2018, available online at: <https://www.frc.org.uk/getattachment/88bd8c45-50ea-4841-95b0-d2f4f48069a2/2018-UK-Corporate-Governance-Code-FINAL.pdf>

⁶³ 'Place Based Impact-Investing' is defined by the impact investing institute as: 'institutional capital, including pension fund investment, into opportunities that enhance local economic resilience and contribute to sustainable development, creating tangible benefits for people, communities and businesses.'

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ABBREVIATIONS AND GLOSSARY OF TERMS



Abbreviations and Glossary of Terms

ARIA - The UK's Advanced Research & Invention Agency

ARPA - The US' Advanced Research Projects Agency

ABM - Agent-Based Modelling

AUM - Assets Under Management

BBB - British Business Bank

CO2e - Carbon equivalent emissions

COI - Clusters of Innovation

CVC - Corporate Venture Capital

DARPA - Defence Advanced Research Projects Agency

DB - Defined Benefit

DC - Defined Contribution

DD - Due Diligence

DLT - Distributed Ledger Technology

EIS - Enterprise Investment Scheme

ESG - Environmental, Social, Governance Factors

ETF - Exchange Traded Fund

FPC - Future Planet Capital

GAAP - Generally Accepted Accounting Principles

GAAS - Generally Accepted Auditing Standards

GE - Growth Equity

GHG - Greenhouse Gas Protocol

GIIN - Global Impact Investing Network

GMCA - Greater Manchester Combined Authority

GP - General partner

IFRS - International Financial Reporting Standards

IGB - Internal Governance Board

IIC - Internal Investment Committee

III - Impact Investing Institute

IMP - Impact Management Project

KPI - Key Performance Indicator

LP - Limited partner

NGO - Non-Governmental Organisation

NLP - Natural Language Processing

NPC - New Philanthropy Capital

PLC - Public Listed Company

PRI - Principles of Responsible Investment

QALY - Quality Adjusted Life Year

ROI - Return on Investment

SASB - Sustainability Accounting Standards Board

SBIR - Small Business Innovation Research (US), not to be confused with the Small Business Research Initiative (SBRI) (UK).

SEIS - Enterprise Investment Scheme

SFDR - Sustainability Finance Disclosure Regulation

STTR - Small Business Technology Transfer (US)

SDG - United Nations Sustainable Development Goals

SRI - Socially Responsible Investment

SROI - Social Return on Investment

SWF - Sovereign Wealth Fund

TCFD - Task Force on Climate-related Financial Disclosure

UKI2S - UK Innovation and Science Seed Fund

VC - Venture Capital

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