

Contracts with Benefits: The Implementation of Impact Investing[‡]

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ABSTRACT

Impact investing private equity and venture capital funds are a rapidly emerging force in capital markets, premised on the service of two goals at once: a financial goal as well as a social-benefit goal. The addition of this second objective complicates the already challenging problem of aligning incentives across layers of agency, and raises the question of how contracting practices should adapt. We draw on contract theory and a unique set of legal documents from impact funds to answer this both normatively and positively. Contracts struck by impact funds, both forward to portfolio companies and back to investors, use new terms to directly operationalize impact, and also adjust the use of existing terms on governance, investor protection, and other concerns to facilitate it. Moreover, funds' direct contracting on impact with investors passes through to their contracting with portfolio companies. For the most part, observed contracting terms align with theory, though they also differ in interesting ways, such as on compensation and covenants.

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I. Introduction

The flow of cash from investment to entrepreneurship is complicated by moral hazards, and this is true even when everyone is simply in it for the money. There are agency problems at every layer of intermediation, as is apparent in the contracting practices that have evolved to address them. The recent growth in impact investing—investing with both financial and social-benefit goals—adds a new dimension to this already challenging contracting problem by adding a new objective for the network of contracts to serve. This raises the question of how contracting practices adapt.

The question is both theoretical and empirical. In terms of theory, a rich literature has explored the benefits, and costs, of creating enforceable rights and incentives through contracts (see Bolton and Dewatripont 2005). Some have explored the problem of multi-tasking specifically (e.g., Holmstrom and Milgrom 1991). Still others have examined the appropriateness of ‘rigid’ versus ‘flexible’ contracts when the nature of the task is uncertain, as might be the case in impact (e.g. Hart and Moore 2008, Gilson et al. 2010). We draw on these models, and others, to generate predictions about optimal contracting for this rapidly emerging investment space.

We then empirically analyze contracts struck by impact funds – both forward to portfolio companies and back to impact investors – to determine whether and how they match the theory. Our sample is a unique set of 196 legal documents pertaining to impact funds, representing 51 separate funds and 93 of their portfolio companies.

Impact investing, a term that dates only to 2007 and with ongoing definitional debate,¹ has rapidly become a major force in both the public and private financial markets. In 2006, around 100 entities collectively managing \$7 trillion were signed to the UN Principles for Responsible Investment; by 2017, they were more than 1,750 collectively managing \$70 trillion,² most of this

¹ “The State and Future of Impact Investing,” *Forbes*, February 23, 2012. One definition of impact investment requires an outcome that would not occur but for the investment or, in other words, that the investment creates additionality. (Brest et al., 2017).

² “PRI Signatory Delisting Model to Come Into Effect Before Year-End,” *Intelligence on European Pensions and Institutional Investment*, October 20, 2017. Signatories commit, among other things, to “...incorporate ESG (i.e. Environmental, Social and Governmental) issues into investment analysis and decision-making processes.” <https://staging-web.unpri.org/about> .

presumably in the public markets. Private markets have also seen rapid growth: the 225 respondents to a 2018 survey by the Global Impact Investor Network (GIIN) report \$35.5 billion of investment in 11,136 deals.³ A number of states have passed laws in recent years enabling Benefit Corporations, charters which bind the company to a social-benefit purpose (Geczy et al. 2015). In just a decade or so, impact investing has grown both on the money-management side and on the entrepreneurial side from a niche to the sector it is now, and appears to be just the tip of a broader movement to incorporate social concerns into for-profit economic activities.

The essence of impact investing is the service of two goals at once. Investors and entrepreneurs could invest for profits and apply these profits to social causes, so that their economic interaction is all about making and sharing profits, and their social service plays out off-screen. Instead, impact investors and social entrepreneurs bundle these activities in their economic relationship, and therefore address the tensions expected from the dual mandate through the contracts that reduce this relationship to writing and through any fiduciary duties they owe. The contracts consequently present the opportunity to learn how the industry views the addition of social impact to the objective of a profit-seeking firm.

To analyze the contracts, we take advantage of two contrasts. One contrast is between our sample of impact funds and the samples of non-impact funds analyzed elsewhere in the rich literature on PE and VC contracting. Both non-impact and impact funds, especially the market-rate seeking (MRS) impact funds, seek competitive financial returns, so this contrast reveals how funds add the impact goal to the financial goal. The other contrast is between these MRS impact funds and *non*-market-rate seeking (NMRS) impact funds in our sample. As the label implies, NMRS funds have lower expected financial returns than MRS funds. This comparison sheds light on contracting from another direction, using the cross-section of tradeoffs between financial and non-financial goals to relate terms to the intended intensity of impact.

To report on the contracts in an efficient way, we develop a ‘scoring’ methodology that distills the strength of the contracts along seven different dimensions. One of these dimensions is *operational impact*, which regroups contracting terms that assign rights and duties on the basis of

³ https://thegiin.org/assets/2018_GIIN_Annual_Impact_Investor_Survey_webfile.pdf.

impact. Operational impact proves to be widespread in the contracts. For example, funds often build impact directly into the diligence process and impact measurement requirements. In the contracts with the funds' portfolio companies, impact is often operationalized through the fund retaining a veto right on deviations from the business model, and identifying, measuring, and reporting on the impact goal. The contracts also generally feature *aspirational impact*, which groups terms affirming the intention to deliver impact and also not to produce negative impact. Moreover, funds with a high incidence of operational impact in their contracts with investors also tend to have a high incidence of impact-focused terms in their contracts with portfolio companies (PCs). The contracts thus bear out the prioritization of impact, in contrast with widespread concerns of greenwashing, or impact 'in name only.'

What happens to the rest of the contracts? We build on existing contract theory to explore how funds should adapt governance and control terms to promote the additional social-benefit goal. We find that impact funds differ from non-impact funds especially in areas that pertain to involvement in the investment process (what we call *participatory governance*): at the fund level this means more advisory committees and at the PC level, more contracting for seats on the board. In both cases, the levels are higher among MRS impact funds.

The paper is in seven sections. Section II briefly reviews the relevant investment literature. Section III incorporates contract theory and develops hypotheses for how impact may alter contracting practices directly or indirectly, and Section IV outlines our sample and empirical approach. Section V formally relates empirics to our hypotheses. Section VII concludes.

II. Literature Review

Our paper, which analyzes contracts between impact-oriented PE/VC General Partners ("GPs") and their investors ("LPs"), as well as portfolio companies ("PCs"),^{4,5} contributes to the vast literature on the general principal-agent problem in incomplete financial contracting (e.g., Grossman and Hart (1986); Hart and Moore (1990)). It contributes specifically to empirical

⁴ With a slight abuse of language, but consistent with common practice in this space, we refer to fund managers as GPs and investors into funds as LPs regardless of the specific legal structure of the fund.

⁵ This builds on the sample in Geczy, Jeffers, Musto and Tucker (GJMT 2017) and a 2015 Wharton Social Impact Initiative (WSII) report on the state of impact investment. Gray, J., Ashburn, N., Douglas, H., Jeffers, J., Great Expectations: mission preservation and financial performance in impact investing (2015).

projects on PE/VC funds from the last two decades observing contracting trends and relationships between contract terms. Most notably among them is Kaplan & Strömberg's (2003) paper on VC and portfolio company contracting, which finds a relationship between contract terms on financial and control rights. They also observe the complexity of VC and portfolio company contracting and a preference to use contract rights as complements to, rather than substitute for, other control terms.

Observing VC contracts with LPs, Gompers and Lerner (1996) find that GP covenants counter act the principal-agent problem in VC contracts by mitigating conflicts of interests. Later work by Gompers, Gornall, Kaplan and Strebulaev (GGKS, 2016) deepens our understanding of PE and VC fund contracting preferences and approaches to controlling internal risks through provisions like pro-rata rights, liquidation preference, anti-dilution, valuation, board control, and vesting.

A survey of LP investors, by Da Rin and Phalippou (2017), finds that LP size in terms of absolute dollars invested in private equity (rather than investor identity, i.e., endowment, past performance, or vintage) accounts for investor heterogeneity in approaches to investment decisions. They find that large LP asset investment correlates with more time spent on due diligence (up to two-fold) and includes a more robust due diligence process.

Other work focuses on fund characteristics as drivers of GP covenants. Gompers and Lerner (1996) find that fund size, age, investment stage, sector focus, and performance-based pay sensitivity influence control rights (confirmed in part by Metrick and Yasuda (2010); Gompers and Lerner (1999)). Fund's past performance and reputation also shape contract preferences of VC and buyout firms (Kaplan and Schoar (2005); Gompers and Lerner (1999); Gompers (1996)).

A fund's investment strategy shapes contract preferences with observable preferences among leveraged buyout firms for equity ownership incentives, board of directors' control, and PC management support (Kaplan and Strömberg (2009)). Gompers, Kaplan and Mukharlyamov (GKM, 2016) also find PE and VC fund preference for equity incentives for PC management, as well as smaller boards with fund representation. Market forces such as supply and demand within the VC market may also shape contract terms (Gompers and Lerner (1996)).

GKM (2016) also contribute to our understanding of how to value a successful exit and therefore investment, documenting the PE belief that investors prefer absolute, over relative, returns on equity investments. Legal scholarship finds a relationship between a VC fund's exit rights and governance rights in the funds' portfolio companies (Smith (2005)).

Only recently have scholars such as Barber, Morse and Yasuda (2017) begun to explore how the addition of an impact goal is reflected in contracts, which introduces an interesting complication of the standard principal-agent challenge.⁶ They find that some impact investors are willing to earn lower returns in exchange for impact (Barber, Morse and Yasuda (2017)). A 2015 study of community development venture capital funds by Kovner and Lerner documents fewer successful exits as compared to traditional VC funds.

A recent legal essay by Brest, Gilson and Wolfson (2018) offers a taxonomy of investment preferences to match investor goals with manager investment strategies, describing investor preferences as socially-neutral, value aligned, or social-value creation. Their taxonomy is consistent with the three-way comparison we use in this paper.⁷ Their theoretical work explores the relationship between social value creation and financial returns and, in the context of MRS funds, focuses on the role of fund managers' private information in delivery on the dual goals. They look to deal terms such as benefit-linked manager compensation as a sign of strong impact commitment by MRS funds.

Our work connects recent impact investment work with traditional PE/VC literature, specifically focused on contracting terms, and contributes our observations about the implementation of impact in contracts and how the addition of impact affects other contract terms. Section III introduces and applies contract theory to impact investing, thus generating our testable hypotheses.

⁶ The paucity of scholarship reflects both an emerging trend and a relative lack of data.

⁷ Socially-neutral investors are consistent with our description (and data) of non-impact funds. Social value creation investors, split into non-concessionary investments, what we call market rate return or MRS funds, and concessionary investments, what we refer to as non-market rate seeking or NMRS funds. Brest et al. (2018), propose another category of investors—value aligned investors—who invest in companies with value aligned business practices and products, typically available in the public markets. Like Brest et al. (2018), we do not define value aligned investors as *impact* investors, and accordingly, our project does not include them, nor public market investors generally.

III. Hypotheses

How should contracts change to add the goals of impact investors? The contract theory literature proposes different takes on optimal contracting in principal-agent problems, depending on the nature and number of underlying tasks, the availability of information, and other parameters. In this section, we review the literature to generate predictions about the optimal way contracts should adapt to incorporate an impact goal alongside a financial goal. In Section V, we report on the contracting patterns we observe, and whether they confirm or contradict the predictions in this section.

A. Direct contracting

1. Direct contracting on impact

We begin by discussing the most straightforward option for parties looking to add an impact goal to their transaction: contracting directly on these goals, by inserting express intentions and verifiable obligations tied to impact. Unsurprisingly, the contract theory literature supports this approach in several ways.

Arguably the basis of contract theory is that contracts create enforceable rights, which can lead to damages, termination, renegotiation, or reputational costs if a term of the contract is violated (Hart and Moore 2008, Gilson et al. 2010, Gompers and Lerner 1996). In other words, contracting directly on the desired object is valuable because the agent will now incur costs if she fails to deliver the object. This generates two specific predictions for impact investing contracts. First, to create enforceable rights, contract terms must contain obligations that are actionable, as opposed to only declarations of intent. We refer to these terms as *operational impact*. Second, the enforceable rights view of contracts suggests that an agent subject to these terms would, in turn, impose similar obligations on agents to which she has delegated tasks. In other words, there should be a flow-through of terms. In our context, this suggests that a fund subject to direct operational terms in its contracts with LPs would, in turn, impose direct operational terms in its contracts with PCs.

A second motivation for direct contracting on impact comes from Hart and Moore's (2008) framing of contracts as reference points. In this framework, contracts play an additional role in

setting expectations for both parties. This provides support for also observing *aspirational impact* terms in our impact contracts, i.e., terms setting expectations about the broad intended goal of the fund. (Note that operational terms can also set expectations, at a more granular level, e.g., how impact will be achieved.) Aspirational terms can moreover serve a signaling purpose, to quickly differentiate funds with an impact goal.

Finally, contracts serve not only to define responsibilities and induce effort, but also to select parties with the right abilities and intentions (Prendergast 1999). We can view the inclusion of direct impact terms, and especially operational terms, as a way to screen out LPs, GPs, or PCs who are unwilling to commit to specific impact terms. In this sense, operational impact terms can help alleviate concerns of greenwashing.

Hypothesis 1

a) Impact fund contracts contain both aspirational terms – to differentiate the fund and set expectations – and operational terms – to create enforceable rights and screen out parties unwilling to commit to impact.

b) Funds with more operational terms in their contracts with LPs will have more operational terms in their contracts with PCs.

2. Direct contracting on multiple tasks

Since the defining characteristic of impact investing is the pursuit of two goals – social or environmental benefit as well as financial returns – a natural place to turn is the literature on contracts with multi-tasking. This literature provides predictions about how direct contracting may vary when the agent is responsible for two (or more) tasks.

Holmstrom and Milgrom's (1991) seminal paper makes the point that when an agent is responsible for multiple tasks, trying to reward only the measurable activities leads to the agent spending too much time on rewarded activities, and not enough on other desired activities. In the context of impact, assuming that impact performance is hard to measure (or at least harder than financial performance), it might be sub-optimal to tie compensation to measurable aspects of performance because it could lead to distortion. Especially in MRS funds, where the balance of goals is more delicate, it could thus be best not to tie incentives directly to either goal in order to avoid distortions in either direction.

Holmstrom and Milgrom further predict that in terms of incentive pay, incentives are more appropriate when (i) the agent is not too risk averse, (ii) the variance of asset returns is low, and (iii) the variance of measurement error in other aspects of the agent's performance is low. To the extent that the variance of asset returns is high in impact, and the variance of measurement error in the other aspects of the agent's performance – the impact aspect – is high, this provides additional support for less financial incentive pay in impact, all else equal.

Building on this setting, Prendergast (1999) notes that agents in complex jobs (i.e., whose work inherently involves multi-tasking) will distort actions to respond to incentive contracts, focusing too much on what is in the contract to the detriment of tasks that cannot (or are not) contracted on. This motivates, in his setting, the use of 'subjective' (or 'holistic') performance evaluations, i.e., based on outcomes that reflect a combination of actions, rather than 'objective' performance evaluations, i.e., tied to particular discrete actions. He argues that financial performance reflects a combination of actions, and in that sense is somewhat holistic (depending on the activities demanded of the agent), while "number of home runs hit" (or in our setting "number of companies funded") might be too discrete and thus distort incentives. We return to this in further detail below as it relates to flexible contracting, but for now note the prediction for not tying compensation to discrete actions, whether on impact or financial performance.

Finally, while these models generate predictions for incentive compensation, Gompers and Lerner (1996) make the interesting point that we can think of certain restrictions on agents as negative compensation. The argument is that the agent may get private benefits from choosing the opportunities that are best for her (e.g., as a GP, she can build expertise in a specific area), so that restrictions on her ability to choose among opportunities destroys a form of compensation for her. Focusing on impact investing, GPs may derive additional utility from having control over the decision because they derive a 'warm glow' from the action (Andreoni 1990).⁸ Gompers and Lerner also argue that deviations from the standard 80/20 form of compensation are likely to attract attention, whereas the inclusion or deletion of restrictions is less likely to attract notice. Extending their logic to our setting, and combining it with the prediction that agents responsible

⁸ This also aligns with the notion of agent responsibility in Hart and Zingales (2017).

for multiple tasks should not have compensation tied directly to the performance of one task or another, this suggests there should be few restrictions directly tied to impact or to financial performance. For example, there should be fewer covenants triggered by high (or low) financial performance in impact funds relative to non-impact funds. This also suggests there should be fewer covenants requiring a minimum personal investment of the GP into the fund, but possibly more imposing a cap on the GP's investment into the fund.

Hypothesis 2

a) There should be less financial incentive compensation in impact funds than in non-impact funds, and less in MRS funds than NMRS funds.

b) There should be less impact incentive compensation in MRS funds than NMRS funds. (There should be none in non-impact funds.)

c) To the extent that restrictions are a form of negative compensation, there should be fewer restrictions triggered by a particular level of financial performance in impact funds than in non-impact funds, and fewer restrictions triggered by a particular level of either impact or financial performance in MRS funds than NMRS funds.

d) There should be fewer covenants requiring a minimum personal investment of the GP into the fund, but more capping a personal investment of the GP into the fund, in impact funds relative to non-impact funds (and in MRS relative to NMRS funds).

B. Flexible and rigid contracting

The section above starts from the premise of a binary choice: whether to contract directly on a desired action, or not. There is another lever that contracts can use: the extent to which contract terms are flexible, or rigid.

A flexible contract allows parties to adjust their outcomes to uncertainty; a rigid contract creates a bright line where a binary outcome is easier to determine. There is some overlap with the concept of contracting directly or indirectly, but the two are distinct. Below we provide examples of terms that would be considered direct or indirect with respect to impact, and rigid or flexible.

	Direct	Indirect
Rigid	Adhere to ESG standards	Limits on reinvestment
Flexible	Incorporate impact into due diligence	Advisory boards

The notion of flexible contracts is a natural outcome of multi-tasking predictions. Holmstrom and Milgrom’s (1991) recognition that more complex jobs require less direct incentive compensation, lest they lead agents to just check the easiest box, is a precursor to this concept in that it recognizes the limits of contracts as a performance checklist. Prendergast (1999) also foreshadows flexible contracting – as we mention earlier – through what he calls ‘holistic’ measures of performance. Holistic performance reflects a combination of tasks, rather than tying it to one discrete action. This makes the concept, almost by definition, flexible: adjustable to uncertainty, rather than creating a bright line for a binary outcome. Thus, we already have a prediction, at a broad level, that we may see more flexible contracting in impact fund contracts.

Hart and Moore (2008) explore the concept in much more depth. They propose a model in which parties care not only about perfunctory performance (e.g., checking boxes), but also about consummate performance (e.g., getting quality from the other party). Intuitively, this makes sense when thinking about performance on social or environmental goals: parties care not only about checking boxes, but about meaningful impact.⁹ With this in mind, parties can choose to write flexible or rigid contracts regarding a future trade. The benefit of flexible contracts is that they allow adjustment to uncertainty, but their downside is that they can lead to inefficient “shading,” or shirking on the consummate task.¹⁰

⁹ There may be parties who care only about checking boxes to give the appearance of impact (“virtue signaling”). We derive predictions assuming that most principals care about meaningful impact. Writing clear tasks that can be treated as boxes to check may also be especially hard in impact because of the ambiguity around what constitutes meaningful impact.

¹⁰ It is worth allocating a note to illustrate the application of Hart and Moore’s framework to our setting in more detail. In their model, there are two stages to a relationship: a time 0 when parties agree to a trade, and a time 1 when the trade occurs. In our context, we can think of time 0 as when parties sign the LPA or term sheet, and time 1 as when investments occur. Parties feel entitled to the best outcome permitted by the contract. If the contract specifies more than one outcome (e.g., a range), there can be disagreement over what each party is entitled to. In our setting, imagine there is a range of impact allowed, because parties do not know the actual opportunities that will come up: for example, that could depend on what kind of climate or trade agreements are signed. There could then be disagreement ex-post over the appropriate level of impact to pursue, depending on the state of the world that is realized. The benefit of keeping the contract flexible is that it allows for more possible future situations where a

Within this framework, Hart and Moore predict that parties are more likely to put restrictions on variables over which there is an extreme conflict of interest, such as price, than on variables over which conflict is less extreme, such as the nature or characteristics of the good to be traded. In our setting, this suggests more contracting around financial terms (price), and less around the nature of impact (nature of the good).

More specifically, when the nature of the good is uncertain (e.g., the agent can invest in renewable energy or economic development), they predict that price should be fixed, because it is a zero-sum game, and that the flexibility of the contract with regards to the nature of the good will depend on the likelihood of disagreement on value of that good. If the expected disagreement over value is low, parties should leave the contract open regarding the nature of the good. If the expected disagreement is high, contracting on the nature of the good should be more rigid. In our setting, we view a greater potential for disagreement in MRS funds, because of the greater tension between a strong financial goal and a strong impact goal. Our sample also suggests PCs of NMRS funds have more embedded impact than MRS funds. Embedded impact could reduce potential disagreement on the value of the impact good. As a result, we expect there should be more rigid contracting around impact in MRS funds than in NRMS funds.

A separate work that supports the notion of flexible and rigid contracting is Gilson et al. (2010). Similar to Prendergast (1999), they argue that there is a balance in contract design between broad standards of performance, and precise, bright line rules specifying exactly what action the party must take. All else equal, it is harder, and therefore more costly, to verify the application of a broad standard than the application of a more precise contract term or rule – pointing to the potential benefits of rigid contracting when possible. However, Gilson et al. end up focusing on a slightly different angle, which essentially pertains to the optimal form that flexible contracting will take. In the following two sections, we delve into predictions about the form that rigid and

mutually-beneficial trade occurs. However, the downside is that disagreement in the future state will lead parties to shirk when their best outcome is not pursued. Continuing the analogy, suppose that international climate policy takes a turn for the worse, so the value of climate-related impact increases for one of the parties. Having left the contract open for that kind of adjustment means that mutually beneficial opportunity can be pursued, say by investing more heavily in carbon footprint reduction; but it can also lead one of the parties to shirk if this was not their best outcome under the contract. Consider a GP-PC relationship where the GP pushes the PC to reduce their carbon footprint, while the PC prefers to focus more effort on expansion. The PC, although willing to ‘trade’ with the GP, might withhold some effort because they feel aggrieved by the terms of trade in practice.

flexible contracting will take, conditional on this section's predictions about the overall balance of rigid and flexible contracting generally.

Hypothesis 3

- a) Impact contracts should fix prices but leave contracts flexible regarding the specific nature of impact.*
- b) The greater the likelihood of disagreement over the value of an impact activity, the more rigid contracting there should be. To the extent this is more likely in MRS funds, there should be more rigid contracting in MRS than NMRS funds.*

1. Rigid contracting

Conditional on there being rigid terms in contracts, does the literature contain predictions about what these terms will be? The answer is a qualified yes.

An early prediction on this front comes from Holmstrom and Milgrom (1991). They predict that "outside activities" should be most severely restricted when performance in the tasks that benefit the firm – the "inside activities" – are hard to measure and reward. Restrictions on outside activities, such as outside fundraising, are not uncommon in traditional VC (Gompers and Lerner 1996), but Holmstrom and Milgrom's work suggests there should be more of these restrictions in impact funds than non-impact funds. Moreover, to the extent that impact activities are harder to measure and reward than financial activities, and NMRS funds are more focused on these activities than MRS funds, there should be more restrictions on outside activities in NMRS than MRS funds.

A few additional predictions arise from Gompers and Lerner's (1996) discussion of the motivation for covenants in LP-GP contracts. First, they argue that ex-ante restrictions take on special importance in LP-GP contracts, because this relationship is characterized by an investment that is locked in for a long period of time, with few (if any) opportunities to renegotiate. In the GP-PC relationship, by contrast, there are more points of contact and thus opportunities to renegotiate (or exit), and so ex-ante restrictions take on less importance. Thus, the first conclusion is that we should observe more restrictive covenants in LP-GP contracts than in GP-PC contracts. Consistent with this, the following predictions pertain more specifically to LP-GP contracts.

One set of covenants that Gompers and Lerner describe relate to risk-shifting concerns: limits on amount invested in a PC, limits on the use of debt, and to a lesser extent restrictions on reinvestment and co-investment. Risk-shifting is a concern when the agent's compensation resembles a call option, as is the case with GPs who get paid after LPs are paid. This compensation structure creates an incentive for the agent to increase the riskiness of investment, because this increases the odds of passing the hurdle and being paid, but the agent is insulated from the downside. Two factors govern this concern: 1) the exposure of the agent to a call option feature of compensation, and 2) the relative ease/difficulty of increasing the volatility of the underlying asset. In the previous section, we discuss a prediction that agents in impact funds should be less exposed to the performance of the underlying asset (Hypothesis 2). If these predictions hold, and holding constant the ease of increasing volatility, risk-shifting should be less of a concern in impact funds – and consequently, we would expect fewer of these covenants in impact contracts. However, it is hard to determine whether increasing the volatility of underlying assets is easier or more difficult in impact funds than in non-impact funds. We posit a third hypothesis, but only weakly: *There may be fewer restrictions around risk-shifting in impact than in non-impact funds.*

Another set of covenants discussed by Gompers and Lerner pertain to restrictions on the type of investment. Gompers and Lerner highlight two concerns: 1) that GPs receive compensation that is inappropriately large relative to other investors in a particular asset class (e.g., public securities), and 2) that GPs choose asset classes in which they have little expertise in order to gain experience. A new concern arises in impact funds: that some investments directly conflict with one of the parties' values (e.g., investment in fossil fuels). As a result, we expect more covenants imposing restrictions on investment in impact funds than in non-impact funds.

Hypothesis 4

- a) There should be more restrictions on GP outside activities in impact funds than in non-impact funds, and more in NMRS than in MRS funds.*
- b) There should be more restrictive covenants in LP-GP contracts than GP-PC contracts.*
- c) There may be fewer restrictions around risk-shifting in impact than in non-impact funds.*
- d) There should be more covenants restricting asset classes in impact funds than in non-impact funds.*

2. Flexible contracting

Finally, what form should flexible contracting take? Here we turn to Gilson et al. (2010). They argue that in rapidly innovating environments, where parties need to assess the capacity (and willingness) of others to respond cooperatively and effectively to unforeseen circumstances, it is especially important to build trust and be able to solve problems as they arise. More broadly, in projects where the precise goal and optimal solutions only become clear in the course of collaboration, the governance process created by the contracts becomes especially important. The balance of goals inherent to impact funds, and especially to MRS funds, makes all of these concerns (e.g. trust, problem-solving ability) salient, and implies that the governance process should be especially important in impact investing, and particularly in MRS funds.

At the heart of Gilson et al.'s (2010) framework is the distinction between formal agreements, which are legally enforceable, and informal agreements, subject only to self-enforcement (e.g., because they are unverifiable by a third party such as the judge). Trust and willingness to problem-solve, for instance, are informal;¹¹ information rights and monitoring mechanisms are formal. Gilson et al. propose that formal mechanisms in the contract, such as information rights and monitoring, provide key support for necessary informal agreements (they refer to this as “braiding” of formal and informal elements of the contract).

More formally, they propose the following. When outcomes can be verified by a third party, formal contracts are preferred. Where outcomes are hard to characterize, and therefore difficult to verify, but the activity is observable to the parties, informal contracts are feasible. When uncertainty is high, the optimal approach is a balance of the two, where formal contracting establishes processes that make behavior observable enough to support informal contracting. Specifically, this balance takes the form of governance processes which support iterative joint effort and low-powered enforcement techniques, that protect the commitment to collaborate, but do not control the course or the outcome of the collaboration. We refer to the collection of these types of governance processes as “participatory governance,” and predict that it should be stronger in impact than in non-impact funds, and in MRS than NMRS funds.

¹¹ Note this relates to the idea of unverifiable quality in Hart and Moore (2008), which creates the potential for shading. Unwillingness to problem-solve would be a form of shading in their setting.

Hypothesis 5

Participatory governance, e.g. monitoring, information rights, supports for communication and problem solving, should be higher in impact than non-impact funds, and in MRS than NMRS funds.

We refer to participatory governance as a form of flexible contracting because its purpose is to allow adjustment to uncertainty. However, a more precise concept is the ‘braiding’ that Gilson et al. develop: this form of governance helps to bridge the gap between rigid (formal) and flexible (informal) contracting. As a result it does not stand in opposition to the rigid contracting we describe in Section B.1 and Hypothesis 4, but in fact should ideally be a complement to rigid contracting.

IV. Empirical approach

A. Sample

Our data come from a survey of impact funds administered by the Wharton Social Impact Initiative (“WSII”). WSII compiled an initial database of impact funds via primary research, by working with organizations such as B Lab, the Emerging Markets Private Equity Association (EMPEA), and Anthos Asset Management, and by referring to lists such as ImpactBase and Impact Assets 50. At the time of our document review 3 years after the first release of the survey, 456 fund managers were contacted and 85 had completed the survey, representing 108 separate funds and 1295 portfolio companies. Of these, 42 funds provided contracts. Another 11 funds provided contracts, without completing the survey at the time of writing. We categorize funds as MRS or NMRS primarily on the basis of their answer to the survey question: “What is the statement that best describes the fund’s financial return goals?” with the options being “Targeting competitive, market rate returns,” “Targeting below market, but close to market returns,” “Targeting below market, close to capital preservation returns,” and “Not Applicable (Explain).” In a few cases where we lack survey answers but the answer is clear from the fund’s information on line, we use that information. We drop two funds for which we only have side letters and no limited partner agreement or equivalent. The results is a set of contracts from 51 distinct funds. These contracts, supplemented by several survey questions, form the basis of our empirical review.

Tables 1 and 2 provide summary statistics of participating funds and our sample of impact contracts.¹² Table 1 Panel A describes the 100 GP-LP contracts provided by the 51 participating funds; Panel B describes the 96 GP-PC contracts on 93 portfolio companies. GP-LP contracts establish the contractual relationship between the fund managers and investors (i.e., private placement memoranda, partnership agreements, and side letter agreements). GP-PC contracts include term sheets, letters of intent, and investment agreements.

[Insert Table 1 about here]

Participating funds' average lifespan is 8 years, with a range of 5-10 years (Table 2). The contract dates in our sample range from 1988-2016, with the majority dated in the 2000s. The average vintage year for both GP-LP and GP-PC contracts is 2008.

[Insert Table 2 about here]

Appendix Table A-1 reports additional descriptive fund statistics. Participating impact funds are small. The assets under management (AUM) for our sample ranges from under \$10 million to over \$500 million, with 58% of participating impact funds holding assets under \$50 million, and 29% under \$10 million. Funds are primarily coming from the United States (49%), Europe (18%), Africa (18%), and Canada (8%). Stage focus seems to work a little bit differently in the impact space: while a group of funds specify early stage (22%) or later stage (18%) focus, a majority (55%) indicate that they focus across stages. Of the funds with a defined geographic focus, North America, Africa, and Latin America are common targets. Participating funds have diverse target industries—many with more than one—including finance, agribusiness, water, essential individual products, social/poverty alleviating services, and health.

Appendix Table A-1 Panel B reports portfolio company summary statistics, which is less robust because it is gathered primarily from term sheets with abbreviated descriptions, if any, of portfolio company operations. Of the identifiable industries, finance and agriculture focused portfolio companies comprise nearly 40% of the sample and match the identified industry focus

¹² We use the term contract to describe the legal documents we reviewed in our sample, including private placement memoranda (PPM) and term sheets. PPMs are not negotiated like traditional contracts, but are quasi contracts subject to fraud and disclosure claims after investment. Second, consistent with prior studies we treat preliminary agreements such as term sheets and letters of intent as a contract because performance mitigates enforceability concerns and elevates the contractual nature of the documents (GKM 2016).

of the funds. Other industries with more than two portfolio companies include technology/business services (9%) and manufacturing (5%). Portfolio companies operate in Africa (17%), South Asia (11%), and Latin America (6%), among other jurisdictions.

Both the GP-LP and the GP-PC targeted areas of geographic and industry investment, especially the full list reported in Appendix A-1, imply that impact motivations can be embedded in operations. For example, investments in water technology, housing in Africa, microfinance in South Asia, and employment in economically depressed areas of the US are intended to generate a social or environmental benefit, embedded in the nature of the business itself.

Finally, in Panel C we compare survey information for our sample funds to the information that we have for funds that participated in the WSII survey, but did not share contracts. The two groups of funds are overall fairly similar. Our sample funds contain slightly fewer MRS funds – though target net IRR is similar – and tend to be smaller than non-sample funds in terms of committed capital. The two groups appear to represent similar vintages and time horizons, as well as number of companies in which funds are invested. The most salient difference is that our sample funds tend to be part of larger and more experienced firms, as measured by the total number of funds managed by the firm and the number previously managed by the most senior member of the general partnership.

B. Comparison approach

Existing PE and VC literature on profit-only investments provides our first set of comparison points. We include both PE and VC literature in our comparisons because the two overlap for our sample in meaningful ways, and at the same time neither PE nor VC is a complete match with our sample.¹³

The deal pipeline and structure differ between PE and VC funds, but overlap with our sample. For example, PE funds tend to focus on mature companies in all industries, whereas VC funds focus on startups, particularly in the technology sector (Metrick and Yasuda (2010)). Impact

¹³ We are not the first to group private company investments into a common comparison point. See Cummings/Walz (2010), “[W]e use the term “PE” as a generic term that encompasses all investments in private firms. Likewise, for ease of exposition, we use the term “PE funds” to include earlier-stage venture capital (VC) funds and both ate-stage and mezzanine funds.”

investment funds, in comparison, target companies in a variety of industries, some of them technology focused, and in a variety of stages. Impact funds use both equity and debt in portfolio company investments (like PE funds), but our sample demonstrates a preference for equity positions (like VC funds) (Coyle and Green (2014)). Impact funds mirror VC funds in their preference for minority investments, as opposed to majority control or 100% ownership among PE funds (Bratton (2002)). Finally, impact investment funds' rights to exit PCs reflect aspects of both PE and VC including registration rights, redemption rights, and an emphasis on finding a private buyer (Smith (2005); GKM (2016)). In practice, impact investment fund exits may look different from both samples, with a greater emphasis on private sales to third party buyers and redemption rights where successful founder/company employees work to buy out the fund and regain control over the company (Geczy et al. (2015)). Finally, on a practical note, the paucity of private company empirical data on contracting norms necessitates us looking to both fields.

[Insert Table 3 about here]

In constructing the data comparison points, we look to seven empirical projects—six in finance journals and one in law. The projects report data collected from 1978 to 2016. Four projects report data on VC funds; two projects report data on PE funds; and one project reports data on both VC and PE funds.

[Insert Table 4 about here]

C. Contract coding

Using existing PE and VC finance and legal literature, we developed a list of contract variables and coding procedures. We hired, trained, and supervised law students to record the presence or absence of terms, record variations within provisions, and quote relevant language from the contracts. Text responses allowed us to verify coding entries, control for accuracy, and extract additional information on observable trends and nuances in contract provisions.

To make comparisons of contract terms easier to interpret and digest, we group like contract terms from our dataset of over 500 coded terms that broadly address similar concerns. For example, funds use different terms to give investors indirect control: information rights,

advisory committees, etc. We group these related terms into scores normalized to 100, described in Table 5. A full list of terms and the constituent components are in Appendix 2.

[Insert Table 5 about here]

We primarily report statistics on GP-LP contracts at the fund level, aggregated across contracts. For example, if Fund A has three contracts—a PPM, an operating agreement, and a side letter—we report the total of contracting terms across these three documents. In regressions, we control for the number of contracts available for the fund. We observe two contracts for the majority of our funds. For GP-PC contracts, we never observe more than one contract for a given GP-PC pair, although a handful of companies have agreements with more than one fund. We report contract-level data for the GP-PC documents, acknowledging that funds negotiate different deals with different portfolio companies.

Table 6 contains summary statistics of non-impact scores for GP-LP contracts in our sample, along with the break-down between MRS and NMRS funds. MRS fund scores are higher across the board, but especially in the areas of participatory governance and limits on manager discretion, both in terms of the average scores and in terms of the percentage of funds with non-zero scores (i.e., contracting in some way in these areas). Participatory governance provides LPs with tools, such as information rights or advisory committees, to monitor the GPs' choice of investments. Limits on manager discretion provide a complementary safeguard in the form of investment caps and prohibitions on types of investments. Together, these tools suggest heightened control over investment choice on the part of LPs, especially in MRS funds.

[Insert Table 6 about here]

Table 7 contains summary statistics of non-impact scores for GP-PC contracts, along with the break-down between MRS and NMRS funds. Governance, information rights, and exit controls are higher on average for MRS than NMRS-held PCs, while investment protection is higher on average for NMRS-held PCs.

[Insert Table 7 about here]

V. Results

In this Section, we discuss the contracts that we observe in our sample of impact funds, and how they compare with the literature on non-impact funds and the predictions from Section

III. First, we address direct contracting on impact goals. Second, we discuss direct contracting on multiple tasks, and examine compensation patterns. Third, we turn to evidence of flexible and rigid contracting.

A. Direct contracting on impact

1. Aspirational and operational impact

In Table 8, we report summary statistics for aspirational and operational impact scores for GP-LP contracts, as well as the incidence of the component terms. We assume non-impact funds and PCs do not include impact terms in their contracts, so that anything we observe in impact contracts is additional, i.e., reflects the addition of the impact goal.

[Insert Table 8 about here]

Panel A contains the summary statistics for the overall scores at the fund level. Results indicate that the impact funds in our sample do contract directly around impact. Looking to the last column, 98% of GP-LP relationships include some description of the impact goal (aspirational impact), and 94% include actionable terms (operational impact). These rates are similarly high for the break out of MRS and NMRS funds: 97% of MRS funds and 100% of NMRS funds have aspirational impact detailed in their contracts with LPs, and 94% of MRS funds and 93% of NMRS funds include some form of operational impact in their contracts with LPs.

Taken as a whole, Panel A provides support for Hypothesis 1a: impact funds contract directly on impact using enforceable terms—operational impact—and expectation-setting terms— aspirational impact. However, we observe a range of contracting scores: some impact funds have aspirational impact with low to no operational impact.

Do MRS funds contract more or less directly on impact than NMRS funds? MRS funds include operational impact terms slightly more than NMRS funds, although the difference is not statistically significant. This finding could be consistent with Hypothesis 3, that MRS fund contracts will contain more rigid contracting on impact, in keeping with the heightened tension in their dual goals to protect the fund’s unique balance between profit and impact. NMRS funds, with below market rate returns, inherently signal to their investors the fund’s balance between impact (high priority) and financial returns (medium/low priority). In contrast, MRS funds’ more

opaque balance of dual goals may necessitate signaling impact commitment in the contract to screen out investors with mismatched priorities.

In Table 9, we turn to PC-level contracts. In Panel A, we report summary statistics for the PC impact score in our sample. We find that 63% of funds' PC-level contracts include impact terms, and 86% of funds have at least one PC contract with direct impact terms. This is largely driven by MRS fund contracts: 71% of PC contracts with MRS funds contain direct impact terms, and 89% of MRS funds in our sample have direct terms in at least one of their PC contracts. In contrast, just 46% of NMRS funds' PC contracts include impact terms—a statistically significant difference. At the same time, 80% of NMRS funds have at least one PC contract with operational impact terms. In other words, NMRS funds include operational impact terms for some of their PCs, but for fewer of their PCs than MRS funds.

[Insert Table 9 about here]

Our findings are consistent with Hypothesis 3b that NMRS funds use less rigid contracting than MRS funds, because there is less potential disagreement over the value of the impact good in NMRS funds. One reason we posit less potential disagreement for NMRS funds is because of the relatively lower tension between goals. Another related reason is that NMRS PCs are more likely to have impact embedded in the business model. Indeed, the most common sector focus for PCs held by NMRS impact funds is Agribusiness/Farming, and the most common geographic focus is Africa, compared to Finance/Microfinance and South Asia for PCs held by MRS impact funds. The embedded nature of impact can also mean that operational terms are redundant or too costly relative to their benefit.

Panel B contains a break-out of terms comprising the operational impact score in the GP-PC contracts for both MRS and NMRS funds. Overall, these statistics indicate our funds generally contract directly on impact at the PC level, but also suggest slightly less emphasis on direct terms at the PC level than at the fund level. We dig deeper into these break-outs in sub-section 3 below.

2. Impact flow through

Next, we consider whether impact in GP-PC contracts reflects the impact terms in GP-LP contracts. We look at the correlation between the impact score of GP-PC contracts, and the aspirational and operational scores of the corresponding GP-LP relationship. Practically

speaking, we run the following regressions to adjust for the number of contracts we observe at the fund level, and report the results in Table 10.

$$PC \text{ impact score}_i = \alpha + \beta \text{ fund impact score}_i + \gamma \text{ num. contracts}_i + \epsilon$$

[Insert Table 10 about here]

Looking at the full sample, impact in the PC contracts is strongly positively correlated with operational impact in the GP-LP contracts. This evidence supports Hypothesis 1c: *Funds with more operational terms in their contracts with LPs will have more operational terms in their contracts with PCs.* However, the relationship between PC-level impact and fund-level aspirational impact is negative, suggesting aspirational impact terms at the fund level do not guarantee impact at the PC level. In Table A-3, we provide results for flow through of indirect fund-level terms to PC-level impact, and show these tend to be positively correlated.

3. Rigid and flexible operational impact terms

Both Tables 8 and 9 contain a break-out of terms which comprise the operational impact score, in Panel B. How funds contract around impact, not just that they do, sheds lights on our theoretical predictions. Focusing on the GP-LP relationships first, we see little GP compensation tied to impact: 10% of funds overall, with 9% of MRS and 14% of NMRS funds. The greater incidence in NMRS funds is consistent with Hypothesis 2b: *There should be less impact incentive compensation in MRS funds than NMRS funds.*

The most common ways that funds operationalize impact are by incorporating impact into their due diligence process (75% of funds) and committing to measure impact (73% of funds). We see more rigid impact contracting in MRS funds: MRS funds, for example, commit more to international ESG standards (33%) compared to NMRS funds (14%). MRS funds are also somewhat more likely than NMRS funds to contract on impact measurement (76% compared to 64% of funds). This is in line with the prediction regarding ‘participatory governance’ (e.g., governance terms supporting collaboration), from Hypothesis 5. When we drill down further, however, both funds contract consistently around third-party monitoring (roughly one third of all funds). Further, NMRS funds have a slightly higher incidence of impact committees (21% compared to 14% for MRS funds), whereas our predictions suggested that MRS funds would use this form of participatory governance more than NMRS funds.

Table 9, Panel B describes impact terms in GP-PC contracts. About twice as many MRS funds retain veto rights on deviation from the PC's business plan (49%) than NMRS funds (27%). We view this provision as an impact term, because the business plan has by default implications for the firm's impact. It is rigid in that it responds to a binary action (deviate or not) with a binary response (veto or not).¹⁴ We again see that MRS funds are slightly more likely to contract on ESG standards (15% compared to 8% for NMRS funds), another form of rigid contracting. These patterns suggest that rigid forms of impact terms are more common in MRS than NMRS PC contracts, consistent with Hypothesis 3.

To a lesser extent, we can think of specifying the PC's specific impact in the contract as rigid, in the sense that it creates the proverbial "box to check" and makes impact less adjustable. More than a third of MRS and NMRS funds address impact specifically in the contract, with an incidence of 39% for both. The pattern holds with 29% MRS funds identifying the PC's specific impact, but only 12% of NMRS funds doing so. The difference between the two is statistically significant at the 90% confidence level.

When we turn to information rights, contracting around PC impact measurement occurs in 27% of our NMRS GP-PC contracts, compared with just 17% of MRS PC contracts. Similarly, more NMRS funds contract for PC impact reports (19%) than MRS funds (10%), and more specify the form of the impact report. This is at odds with Hypothesis 5, which predicts that information rights should be higher in MRS than in NMRS funds.

Finally, we observe little to no compensation tied to impact, with slightly more in NMRS funds. This is in line with Hypothesis 2b, but the results are very weak. We discuss compensation in more detail below.

B. Direct contracting on multiple tasks: incentive compensation

In this section we examine whether a potential tension between two tasks—one (financial returns) with straightforward measures, and a second (impact) with more ambiguous measurements—is reflected in the amount of direct contracting on the financial goals.

¹⁴ MRS funds also contract more than NMRS funds to lock in a PC's mission at the time of the fund's exit—another example of rigid contracting—although the occurrence rate is low at 5%.

Compensation plans in the PE/VC space typically combine a guaranteed payment (management fee) with incentive provisions to share future profits, often using a waterfall structure. The management fee, typically around two percent per year earned on committed capital, offers downside protection for managers if fund returns never reach profit distributions to managers or are significantly delayed. The incentive pay is channeled through a waterfall payment structure. In a waterfall, the fund investors are paid annual profits up to a benchmark, the *hurdle rate*. Once the hurdle rate is reached, fund management can earn its incentive fee which may be comprised of a *catch up rate*—giving fund managers profits of up to 20% of the profits allocated to investors—and thereafter the *carried interest*—the manager’s split of any additional profits going forward. As explained by Metrick and Yasuda (2010)¹⁵, the base case of a waterfall payment in a fund with an 8% hurdle rate earns the LPs \$108 on every \$100 invested (return of capital plus 8% return). Next, if profits allow, the GP earns \$2 (20% of the \$10 profit), and thereafter LPs and GP split any remaining profits 80%/20%.

Table 11 reports on the management fees and incentive compensation structures for non-impact and impact funds, with an additional break-out of the rates for MRS and NMRS funds.

[Insert Table 11 about here]

A significant majority of impact funds, both MRS and NMRS, adopt management fees and waterfall compensation consistent with non-impact models. Occurrence rates for this compensation structure are higher for MRS funds (91%) than NMRS funds (64%), and the difference is statistically significant. The first finding, highest occurrence with non-impact funds, is consistent with Hypothesis 2a: *less incentive compensation in impact funds than in non-impact funds*. Contrary to our second prediction, however, MRS funds use the traditional compensation structure more frequently than NMRS funds. These results persist as we dig deeper into incentive compensation.

Overall, 57% of our sample funds have a non-zero hurdle rate. This lies somewhere in between the incidence rate reported by Metrick and Yasuda (2010) for hurdle rates in VC funds

¹⁵ Metrick and Yasuda (2010) document dispersion and complexity in waterfall structures because private markets are not standardized. We would expect similar dispersion and complexity because moving the incentive structure to impact investing would not address the standardization issues.

(45%) and in PE funds (92%), reflecting the discussion in Section IV B. The incidence is higher for MRS than NMRS funds, though the difference is not statistically significant. Conditional on having a positive hurdle rate, the mode is consistent across all types of funds (8%), though the range dips lower, especially for NMRS funds: several of our impact funds have hurdle rates below 6%. Lower hurdle rates imply a willingness to pay for impact (specifically in the NMRS context), consistent with Barber et al.'s (2018) findings.

A similar pattern emerges with carried interest and catch-up rates. All funds with a waterfall structure have a positive carry rate, so the difference here is the same as for waterfall incidence. The mode is consistent across the three groups (20% for both carry and catch-up rates), but the ranges indicate that these rates can be lower for some impact funds compared to non-impact funds. In particular, the carry range is 10-25% for MRS funds, and 10-20% for NMRS funds; the catch-up range is 3-25% for MRS funds, and 10-25% for NMRS funds. In contrast, Metrick and Yasuda report carry rates no lower than 17.5% (and as high as 30%), and catch-up rates no lower than 16.5% (but also no higher than 20%).

Management fees are an important revenue stream for GPs, and widely used by impact funds (69%), though not as uniformly as non-impact funds (100%). This reflects a divergence between MRS and NMRS funds, which contract 73% and 50% of the time, respectively, for positive management fees. This suggests that LPs alone may not shoulder the burden of decreased profit expectations with NMRS funds. However, when impact funds include management fees in the contract, especially NMRS funds, the fees are likely to be *higher* than non-impact funds' typical 2%. All NMRS funds contracted for management fees above 2% (in the range of 2.5-3%), as did 61% of MRS funds. Contrast this with non-impact trends: nearly all VC funds reported on by MY (90%) contracted for management fees at or *below* 2%, and 49% of PE funds in the same study reported fees at or *below* 2%. The range of impact fund management fees observed is consistent with Hypothesis 2, that manager compensation should not be too sensitive to fund financial performance, thereby inclining a manager to serve both the financial and impact goals.¹⁶

¹⁶ It is also possible that higher fees reflect the smaller size of the funds in our sample.

Collectively, our results indicate that non-impact funds have higher incentive compensation than impact funds in our sample, as predicted. However, the heightened dual goal tension in MRS funds generates results opposite to our prediction: instead of decreasing incentive compensation compared to NMRS funds, it increases it.

In Table A-2 in the Appendix, we examine whether compensation terms are correlated with impact terms in fund-level contracts. The small sample size limits the power, but there do not appear to be strong correlations between impact and compensation terms.

C. Indirect contracting: rigid and flexible terms

Next, we examine a broader range of contract terms that serve a fund's balance between profit and impact, albeit indirectly. We describe the balance of rigid and flexible contracting among these terms.

1. Covenants and restrictions as rigid contracting

Table 12 reports on terms that best map to rigid contracting in GP-LP and GP-PC contracts. Panel A describes limits to manager discretion, manager restrictions, and total combined covenants in non-impact and impact funds' GP-LP contracts. Impact funds, in our sample, include one or more contract terms limiting manager discretion, with a similar frequency between MRS and NMRS funds, although MRS is slightly higher. Similarly, impact LPs contract for manager restrictions, more so in MRS funds compared to NMRS funds.

[Insert Table 12 about here]

We predicted that impact agreements would use asset restrictions to mitigate potential conflicts between the GP and LPs when there is disagreement about the non-financial value of a PC investment (Hypothesis 3). Indeed, the vast majority of impact funds include asset restrictions in the GP-LP agreements (88%). Further delving into the role of rigid contracting, we report additional covenants that could prevent GP-LP values disagreements. One-fifth of impact fund contracts, both for MRS and NMRS, include prohibitions on outside of region investments. Impact funds also use prohibitions on outside sector investments (8%), and industry investment restrictions (20%), and the use of these does not differ across MRS and NMRS. Collectively, our findings support Hypothesis 4d that asset restrictions may be a useful tool to prevent GP-LP disputes over mission-alignment in portfolio investments.

If contracting ex ante for specific manager behavior is hard, especially with impact, another approach is to restrict what the manager can do outside of the fund, thus forcing manager attention to activities that benefit the fund and LPs (see Holmstrom and Milgrom 1991). In light of this, we expect that impact funds would impose more restrictions on managers' outside activities, but our results do not support this hypothesis. Rather, we see high manager restrictions in non-impact funds on prohibited outside fundraising, 58% as reported by Gompers and Lerner (1996), compared with approximately 27% for impact funds. General restrictions on outside activities are not much higher, at 35%.

Covenants against manager self-dealing may also reflect and protect the dual goals of profit and impact, as well as concerns that managers could use the difficulty of monitoring two, as opposed to one, goals to obfuscate self-dealing practices. We report covenants restricting a manager's ability to reinvest fund profits in 69% of impact fund contracts, with similarly high scores close to 65% for both MRS and NMRS funds. This is much more frequent than the 21% reported in by Gompers and Lerner (1996).¹⁷ While 15% of MRS funds prohibit conflict of interest transactions, no NMRS funds do. The prevalence of profit reinvestment prohibitions in impact funds contradicts our prediction in Hypothesis 4c that impact funds would have fewer risk-shifting provisions. However, few NMRS funds, and no MRS funds, include provisions prohibiting fund-family co-investments.

Risk shifting covenants must be considered in light of compensation structures, a parameter of Hypothesis 4c which we discuss in sub-section B above. Collectively, the incentive compensation ranges suggest lower upside for impact fund managers—a setting less conducive for risk shifting that may occur when managers, far from the strike price, swing for the fences with risky or inappropriate investments. In light of this context, our findings do not contradict Hypothesis 4c, although more is required to confirm it.

Finally, impact funds have fewer average restrictive covenants (3.4) compared to non-impact funds (5.6), but MRS have more (3.5) than NMRS funds (2.6). Covenants in MRS funds may be more important than in NMRS funds because of MRS managers' dual and seemingly

¹⁷ Relatedly, few MRS funds (6%), but no NMRS funds include covenants capping industry investments. We have no comparison point with non-impact funds.

equal imperative to pursue both profit and purpose. Our results are in contrast, however, with prior theoretical predictions that covenants are more important in younger and less mature fields, which would suggest that impact funds overall should have *more* restrictions compared to non-impact funds (Gompers and Lerner 1996). As VC contracting matured, restrictive covenants may have become more specific, or replaced by the reputation of managers. MRS funds may adopt non-impact funds' evolved approach to covenants, so that despite the impact field's relative youth, it incorporates more mature contracting practices.

Turning to Panel B, which reports investment protection and exit in GP-PC contracts, we report how impact funds use contract terms to protect the fund's PC investment. Impact GP-PC contracts do not contain covenants similar to those used in the GP-LP contracts. The difference is likely due to the dissimilarity of transactional settings between the two, as predicted in Hypothesis 4b. GP-PC transactions typically involve more *active* investment by the fund (more on that in the following section) and flexible exit terms. Accordingly, the contract terms should reflect those differences.

Panel B, reporting the frequency of investment protection terms, shows that many impact funds use one or more contract terms to protect their investments. MRS and NMRS funds have similar overall scores on investment protection, but some differences emerge on the individual terms. MRS funds include anti-dilution provisions (77%) more than NMRS funds (58%), whereas NMRS funds contract more for fund liquidation rights (81%) compared to MRS funds (38%). Both differences are statistically significant. MRS funds contract more overall on exit compared to NMRS funds, though less than non-impact funds. Interestingly, NMRS funds contract slightly more for registration rights to facilitate a going-public transaction. This result is counterintuitive, and may reflect our small sample size.

Taken as a whole, our findings on Hypothesis 4 are mixed. Our findings do not confirm all subparts of Hypothesis 4, but overall suggest that rigid contracting is an important tool in impact contracts, especially in GP-LP contracts where we see widespread use of asset restrictions and generally more covenants than in GP-PC contracts. We also have supporting, but inconclusive, results on covenants used to stem risk shifting, and no observable increase in restrictions of outside activities to mitigate the difficulty of measuring impact.

2. Participatory governance as flexible contracting

Finally, we turn to governance terms that protect the commitment to collaborate, in the spirit of Gilson et al. (2010). We first compare GP-LP contracts on the dimension of participatory governance in Panel A.

[Insert Table 13 about here]

Participatory governance allows investors to supervise and continue to participate in the operations of a fund for the 7-10 years after the GP-LP contract is struck. Advisory committees to fund managers are one such tool for which we have a comparison point in non-impact funds (GKM).

Table 13 Panel A shows that nearly all impact GP-LP contracts (92%) include advisory committees to support or supervise fund management activity. Comparatively, non-impact funds contract for formal advisory committees 40% of the time and broader advisory functions, including senior advisors and other management supports, 66% of the time. MRS funds also use formal advisory committees (94%) more frequently than NMRS funds (86%). MRS funds also have a statistically significantly higher overall score on participatory governance than NMRS funds. Together, these results provide clear support for *H5: Participatory governance, e.g. monitoring, information rights, supports for communication and problem solving, should be higher in impact than non-impact funds, and in MRS than NMRS funds.*

The stated role of these advisory committees can also be informative. Advisory committees can provide technical support through approving loans, budgets, valuations, compliance, due diligence, and audits. They can also influence fund strategy and investment policies. Unfortunately, the non-impact PE/VC literature does not provide a comparison point to our sample on advisory board function, but we provide the break-out for MRS and NMRS impact funds. Across both categories, with a few exceptions,¹⁸ MRS funds have higher frequency of discretionary and technical assistance functions compared with NMRS funds. Most notably, MRS fund managers receive significantly more support than their NMRS counterparts on investment

¹⁸ The main exception is loan evaluation, which may reflect more common use of debt for the types of PCs in which NMRS funds invest.

strategy, due diligence, investment approval, and fund compliance. The first two largely invoke management discretion and judgment. They also shape a fund's core investment operations as well as opportunities to pursue financial goals and social-benefit goals. In this way, they appear quite consistent with the role put forward by Gilson et al. (2010) of supporting informal agreements, say perhaps on the balance of impact and financial priorities.

In Panel B, we turn to governance provisions in the GP-PC contracts. These provisions, including fund ownership percentages, seats on the PC board, and veto rights, allow funds to participate in the ongoing operation of the PC – an analog to participatory governance, at a different level.

The literature on non-impact funds provides comparison points on fund voting controls and PC boards, so we examine these in comparison to our funds' contracts. The first point to note is that none of the impact funds in our sample have majority control positions in PCs (defined as greater than 50% ownership), whereas non-impact funds invest as the majority owner in 25% of PC contracts. Impact funds hold an average minimum voting position of 21%, compared to non-impact funds' average voting position of 53.6%. NMRS funds have particularly low position on average, at just 9%. The minimum voting percentage reflects a fund's position at the outset of the investment before options, additional financing rounds, executed rights of first refusal, and other scenarios allow a fund to gain additional shares and increase voting control. Also note that the non-impact average voting percentage is 53.6%, but only 25% of non-impact funds hold majority ownership positions, signaling either the use of preferred voting stock or an average skewed by outliers with all, or nearly all, voting shares.

It is unclear whether the differences in ownership and voting control reflect different balances of goals, or unique aspects of impact investment, such as smaller AUM or different lifecycle stages of PCs. Another possibility is that shared ownership with entrepreneurs may be an impact end itself (Geczy et al. (2017)). Either way, it provides important context for the contracting we see around board seats.

Impact funds contract for a guaranteed seat on PC boards 80% of the time, compared with 41% of the time in non-impact funds. This is higher for MRS funds (86%) than NMRS funds (69%), but both levels are clearly higher than for non-impact funds. By itself, this evokes a similar pattern

of emphasis on participatory governance as we saw in impact GP-LP contracts. However, as we noted, non-impact funds have a majority control position in 25% of contracts. Majority voting obviates the need for a guaranteed seat on the board, so the minority position itself could explain some of the greater emphasis on board seats in our impact contracts.

Still, the extremely high incidence of board seats in MRS fund contracts (80%), and the statistically significant difference between MRS and NMRS contracts, provide support for Hypothesis 5: that participatory governance takes on additional importance in impact funds, and especially in MRS funds.

VI. Conclusion

Impact investing is a rapidly emerging force in capital markets, at the tip of a broad movement to incorporate social concerns into traditional profit ventures. Its essence is the service of two goals at once: a financial goal as well as a social-benefit goal. The addition of the latter objective complicates an already challenging contracting problem, and raises important questions about how contracting practices can adapt for this emerging space.

To answer these questions, we investigate a unique set of 196 legal documents pertaining to impact funds, including both forward to portfolio companies and back to impact investors. Drawing on contract theory, we generate five specific predictions about optimal contracting for this rapidly growing asset class.

First, we predict that impact fund contracts will contain both aspirational and operational impact terms. We also anticipate that more operational impact terms in the GP-LP relationship will correspond with more impact terms in contracts with PCs. We confirm both of these hypotheses. These findings run against the idea that impact investing is solely greenwashing.

Second, building on models of multi-tasking, we predict there should be less financial incentive compensation in impact funds than in non-impact funds, to prevent distraction from the impact task. This is consistent with what we observe: we find impact funds tend to use waterfall incentive compensation less, and that some funds have somewhat lower catch-up and carry rates than non-impact funds. Within impact funds, we predict there should be less of both financial and impact incentive compensation in MRS than NMRS funds. However, this is not what we see: MRS funds use the traditional compensation structure more frequently than NMRS

funds. Looking to impact incentives, we find few in our sample contracts, but the little we observe are in NMRS.

Our third hypothesis predicts that impact contracts should be generally flexible regarding the nature of impact. It also predicts that impact contracting should be more rigid in MRS than in NMRS funds. We find fairly strong support for this hypothesis, observing more rigid contracting on impact in MRS than NMRS, at both fund and PC levels.

Fourth, we extend a series of predictions on non-impact restrictions. In impact relative to non-impact contracts, we expect fewer restrictions around risk-shifting, but more restrictions on outside activities (especially in NMRS) and on asset classes. Our findings are mixed: we see fewer restrictions on outside fundraising, a mix on risk-shifting provisions, and while we do not have a comparison point on asset restrictions, the very high incidence (91% in MRS) suggests a heightened role.

Finally, we predict participatory governance, e.g., monitoring, information rights, and other collaborative supports, should be higher in impact than non-impact funds, and in MRS than NMRS funds. We find strong support for this, in particular in the form of advisory committees at the fund level and board seats at the PC level, but also looking at overall scores on this dimension.

This paper is the first analysis of the effect of impact goals on contracts, so its findings naturally raise more questions for this and similar databases. Among these questions are the role of GP power in shaping impact investment contracts, the potentially dilutive effects of the growing impact-investing deal flow, and the tradeoff or complementary nature of profit and social-purpose benefits. We look forward to addressing these and other questions in future work on impact investing.

Bibliography

- Andreoni, James (1990). "Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving". *Economic Journal*. 100 (401): 464–477.
- Axelson, U., Strömberg, P., and Weisbach, M. (2007). Why are buyouts levered: The financial structure of private equity funds. Working Paper, NBER No. 12826.
- Barber, B., Morse, A., and Yasuda, A. (2017). Impact investing. Working Paper, SSRN <https://ssrn.com/abstract=2705556>.
- Bolton, P., and M. Dewatripont (2005). *Contract Theory*. Cambridge, MA. MIT Press.
- Bratton, W. W. (2002). Venture capital on the downside: Preferred stock and corporate control. *Michigan Law Review* 100(5), 891-945.
- Brest, P., Gilson, R., and Wolfson, M. (2018). How investors can (and can't) create social value. Working Paper, ESGI series in law.
- Broughman, B. and Fried, J. (2013). Carrots and sticks: How VCs induce entrepreneurial teams to sell startups. *Cornell Law Review* 98, 1319–1358.
- Coyle, J. F. and Green, J. (2014). Contractual innovation in venture capital. *Hastings Law Journal* 1, 133-183.
- Cumming, D. and Walz, U. (2010). Private equity returns and disclosure around the world. *Journal of International Business Studies* 41, 727–754.
- Da Rin, M. and Phalippou, L. (2017). The importance of size in private equity: Evidence from a survey of limited partners. *Journal of Financial Intermediation* 21, 64-76.
- Ewens, M., Jones, C., and Rhodes-Kropf, M. (2013). The price of diversifiable risk in venture capital and private equity. Unpublished Working Paper.
- Geczy, C., Jeffers, J. S., Musto, D., and Tucker, A. (2015). Institutional investing when shareholders are not supreme. *Harvard Business Law Review* 5, 73-139.
- Geczy, C., Jeffers, J. S., Musto, D., and Tucker, A. (2017). In pursuit of good & gold: Data observations of employee ownership & impact investment. *Seattle University Law Review* 5, 555-609.
- Gilson, R. J., Sabel, C. F., and Scott, R. E. (2010). Braiding: The interaction of formal and informal contracting in theory, practice, and doctrine. *Columbia Law Review*, 1377-1447.
- Gompers, P., Gornall, W., Kaplan, S. N., and Strebulaev, I. A. (2016). How do venture capitalists

- make decisions? Working Paper, NBER No. 22587.
- Gompers, P., Kaplan, S. N., and Mukharlyamov, V. (2016). What do private equity firms say they do? *Journal of Financial Economics* 121, 449-476.
- Gompers, P. and Lerner, J. (1999). An analysis of compensation in the U.S. venture capital partnership. *Journal of Financial Economics* 51, 3-44.
- Gompers, P. and Lerner, J. (1996). The use of covenants: An empirical analysis of venture partnership agreements. *Journal of Law and Economics* 39, 463-498.
- Gompers, P. A. (1996). Grandstanding in the Venture Capital Industry. *Journal of Financial Economics* 42, 133-156.
- Grossman, S. J. and Hart, O. D. (1986). The costs and benefits of ownership: A theory of vertical and lateral integration. *Journal of Political Economy* 94, 691-719.
- Hart, O. D. and Zingales, L. (2017). Companies should maximize shareholder welfare not market value. Working Paper, ECGI - Finance No. 521/2017.
- Hart, O. (2017). Incomplete contracts and control. *The American Economic Review* 107(7), 1731-1752.
- Hart, O. and Moore, J. (2008). Contracts as reference points. *The Quarterly Journal of Economics* 123, 1-48.
- Hart, O. and Moore, J. (1990). Property rights and the nature of the firm. *The Journal of Political Economy* 98(6), 1119-1158.
- Holmstrom, B. and Milgrom, P. (1991). Multitask principal-agent analyses: Incentive contracts, asset ownership, and job design. *Journal of Law, Economics, and Organization* 7, 24-52.
- Jensen, M.C. and Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305-360.
- Kaplan, S. and Schoar, A. (2005). Private equity performance: Returns, persistence, and capital flows. *The Journal of Finance* 60(4), 1791-1823.
- Kaplan, S. and Strömberg, P. (2003). Financial contracting theory meets the real world: An empirical analysis of venture capital contracts. *The Review of Economic Studies* 70(2), 281-315.
- Kaplan, S. and Strömberg, P. (2009). Leveraged buyouts and private equity. *Journal of Economic Perspectives* 23(1), 121-146.

- Kovner, A. and Lerner, J. (2015). Doing well by doing good? Community development venture capital. *The Journal of Economics & Management Strategy* 24(3), 457-685.
- Ljungqvist, A. and Richardson, M. (2003). The cash flow, return and risk characteristics of private equity. Working Paper, NBER No. 9454.
- Ljungqvist, A. and Richardson, M. (2003). The investment behavior of private equity fund managers. Working Paper, RICAFA No. 005.
- Metrick, A. and Yasuda, A. (2010). The economics of private equity funds. *The Review of Financial Studies* 23(6), 2303–2341.
- Phalippou, L. (2007). Investing in private equity funds: A survey. *The Research Foundation of CFA Institute* 2(2), 1–22.
- Rauterberg, G. and Talley, E. (2017). Contracting out of the fiduciary duty of loyalty: An empirical analysis of corporate opportunity waivers. *Columbia Law Review* 117, 1–62.
- Smith, G. D. (2005). The exit structure of venture capital. *UCLA Law Review* 53, 1–36.

Tables

Table 1: Summary Statistics for Sample of Impact Funds & Documents

This table presents summary statistics for the types of GP-LP and GP-PC contracts we analyze. We exclude funds for which we only have side letters. We are unable to categorize as MRS or NMRS four of the funds in our GP-LP sample, and two of the funds in our GP-PC sample.

Panel A: GP-LP contracts

	All funds		MRS funds		NMRS funds	
	N	%	N	%	N	%
Number of funds	51		33		14	
Number of documents	100		67		33	
Document type						
PPM	40	40%	29	43%	11	33%
Limited Partnership Agreement	24	24%	20	30%	4	12%
Side Letter	19	19%	9	13%	10	30%
Operating Agreement	7	7%	4	6%	3	9%
Investment Agreement	4	4%	2	3%	2	6%
Other	3	3%	2	3%	1	3%
Issue Document	2	2%	0	0%	2	6%
Fact Sheet	1	1%	1	1%	0	0%

Panel B: GP-PC contracts

	All funds		MRS funds		NMRS funds	
	N	%	N	%	N	%
Number of funds	16		8		6	
Number of PCs	93		57		25	
Number of documents	96		58		26	
Document type						
Term Sheet	66	69%	37	64%	20	77%
Investment Agreement	17	18%	15	26%	2	8%
Letter of Intent	7	7%	6	10%	0	0%
Loan Agreement	3	3%	0	0%	2	8%
Other	3	3%	0	0%	2	8%

Table 2: Horizons and Years for Sample of Impact Funds & Documents

This table presents summary statistics for the horizon of the funds in our sample, as well as document years. Life span is defined as the original investment term. It is missing from eight of our funds. Likewise, document years are missing or redacted from some documents: one GP-LP document, and 18 GP-PC documents.

	N	Mean	Min	Percentile					
				10 th	25 th	50 th	75 th	90 th	Max
Life span (years)									
All	43	8.53	2.35	1	5	7	10	10	10
MRS	27	8.59	2.27	3	5	7	10	10	10
NMRS	12	8.75	2.7	1	7	8.5	10	10	10
GP-LP doc. year									
All	99	2008.3	5.32	1991	2001	2003	2010	2012	2014
MRS	63	2009.6	3.89	1999	2003	2007	2010	2013	2014
NMRS	32	2004.9	6.31	1991	1998	2001	2002	2012	2013
GP-PC doc. year									
All	78	2008.7	5.04	1988	2003	2005	2010	2012	2015
MRS	58	2009.9	3.98	2003	2004	2007	2010	2013	2016
NMRS	19	2005.0	6.29	1988	2000	2002	2004	2011	2012

Table 3: Characteristics of PE, VC, and Impact Spaces

This table outlines similarities and differences between PE and VC, to put into context our choice to compare to both literatures.

	PE	VC	Impact
Similarities			
<i>Function</i>	Raise capital to invest in private companies		✓
<i>Compensation</i>	Compensation structures including management fees and waterfall structures at the fund level		✓
<i>Operational Focus</i>	Fund involvement with PC operations to promote growth		to some degree
Differences			
<i>Industry & Stage</i>	All industries, mature companies	Technology startups such as biotech, clean tech, apps, etc.	Both
<i>Control</i>	Majority control or 100% investment in PC	Minority control/investment in PC	Minority control
<i>Investment</i>	Debt and equity investments in PC	Equity in PC	Debt and equity, preference for equity
<i>Fund Exit</i>	Private company sale, spin off, relisting a company, etc.	Private company sale, IPO, later stage financing redemption	Sale or redemption

Table 4: Comparison Points From Literature on VC/PE

Author/Date	Sample size	Input	VC/PE	Data date range	Abbreviation
Gompers & Lerner (1996)	140	Partnership agreements	VC	1978-1992	GL '96
Gompers & Lerner (1999)	419	Fund fee contracts	VC	1978-1992	GL '99
Kaplan & Stromberg (2003)	213	Portfolio company investments	VC	1986-1999	KS
Metrick & Yasuda (2010)	238	Funds (contracts + fund research)	VC/PE	1993-2006	MY
Gompers, Kaplan & Mukharlyamov (2016)	79	Investor surveys	PE	2011-2013	GKM
Gompers, Gornall, Kaplan & Strebulaev, NBER 2016 paper	885	Investor surveys	VC	2016-2016	GGKS
Smith (2005) (*law)	367	Registration statements of venture-backed IPO's	VC	1997-2002	S

Table 5: Contract Dimensions (“Scores”)

This table summarizes the contract dimensions that we score at the GP-LP and GP-PC levels. Full detail is available in Appendix 2.

GP-LP contract dimensions	
1- Aspirational impact	Terms which describe intended impact. <i>E.g. social or environmental impact addressed, negative impact prohibited.</i>
2- Operational impact	Terms which incorporate impact goals into contract in actionable way. <i>E.g. commitment to ESG standards, compensation tied to impact.</i>
3- Investor return protection	Direct contract rights that protect investors’ investment in the fund. <i>E.g. investor call/put options, tag along/drag along rights, liquidation cash flow rights.</i>
4- Participatory governance	Rights for investors to participate in the fund’s governance, or otherwise monitor/supervise the funds. <i>E.g. information rights, presence and role of advisory committee.</i>
5- Limits to manager discretion	The discretion afforded to fund managers under the terms of the agreement. Made up of two sub-categories: asset restrictions, and prohibitions. <i>E.g. investment cap in PCs, sectors, regions; prohibition on investment in harmful substances, prohibition on hostile transactions.</i>
6- Manager restrictions	Restrictions imposed on managers. <i>E.g. fiduciary duty, ability to reinvest funds, restriction on manager’s outside activities.</i>
GP-PC contract dimensions	
1- Impact	Terms which incorporate impact goals into the PC contract. <i>E.g. mission lock, impact measurement.</i>
2- Exit control	Fund’s exit paths from the investment in the portfolio company. <i>E.g. put option in PC securities, tag along/drag along rights, termination rights.</i>
3- Investment protection	Fund’s direct contract rights to protect its investment in the portfolio company. <i>E.g. ROFR in other PC securities, preemptive/anti-dilution rights, liquidation cash flow rights.</i>
4- Governance	Fund’s ability to participate in the going operation of a portfolio company. <i>E.g. ownership, board seats, veto rights.</i>
5- Information rights	Fund information rights. This is a possible subset of governance rights. <i>E.g. quarterly or annual information rights, form of information shared.</i>
6- Fund restrictions	Restrictions imposed on fund. <i>E.g. ROFR on fund securities, non-compete with PC.</i>

Table 6: Non-impact Contracting Scores at the GP-LP Level

This table presents summary statistics for fund-level governance and control contract provisions outlined in Table 5, except for impact dimensions which are reported in Table 8.

	N	Mean	S.D.	Min	10 th	25 th	<u>Percentile</u>			Max	% ≠ 0
							50 th	75 th	90 th		
Investor return protection											
All	51	31.21	18.62	0.00	8.33	16.67	33.33	41.67	50.00	66.67	92.16
MRS	33	33.33	19.76	0.00	8.33	16.67	33.33	50.00	66.67	66.67	96.97
NMRS	14	29.17	15.93	0.00	0.00	25.00	33.33	41.67	41.67	50.00	85.71
<i>Difference NMRS-MRS</i>		-4.167									-11.26
Participatory governance											
All	51	74.95	24.25	0.00	50.00	66.67	77.78	94.44	100.00	100.00	96.08
MRS	33	79.12	20.79	22.22	55.56	66.67	88.89	94.44	100.00	100.00	100.00
NMRS	14	61.90	30.34	0.00	0.00	55.56	63.89	83.33	100.00	100.00	85.71
<i>Difference NMRS-MRS</i>		-17.22**									-14.29**
Limits on manager discretion											
All	51	17.71	13.74	0.00	0.00	6.67	13.33	26.67	40.00	43.33	88.24
MRS	33	17.58	14.68	0.00	3.33	6.67	13.33	26.67	43.33	43.33	90.91
NMRS	14	15.24	12.45	0.00	0.00	6.67	13.33	23.33	33.33	40.00	78.57
<i>Difference NMRS-MRS</i>		-2.338									-12.34
Manager restrictions											
All	51	23.64	33.47	-17.65	-11.76	-5.88	11.76	52.94	76.47	88.24	90.20
MRS	33	24.60	33.61	-17.65	-11.76	-5.88	17.65	52.94	76.47	88.24	96.97
NMRS	14	18.07	30.48	-17.65	-5.88	0.00	2.94	29.41	76.47	76.47	71.43
<i>Difference NMRS-MRS</i>		-6.532									-25.54***
Num. contracts per fund											
All	51	2.06	1.27	1.00	1.00	1.00	2.00	2.00	4.00	6.00	
MRS	33	2.03	1.05	1.00	1.00	1.00	2.00	2.00	3.00	6.00	
NMRS	14	2.36	1.78	1.00	1.00	1.00	1.50	3.00	5.00	6.00	
<i>Difference NMRS-MRS</i>		0.327									

Table 7: Non-impact Contracting Scores at the GP-PC Level

This table presents summary statistics for PC-level governance and control contract provisions outlined in Table 5, except for impact dimensions which are reported in Table 9. Because there are only 14 NMRS funds, the 10th and 90th percentile are interpolated from the 2nd and 3rd, and 11th and 12th ranked funds for each term.

	N	Mean	S.D.	Min	10 th	25 th	50 th	75 th	90 th	Max	% ≠ 0
Exit control											
All	96	28.65	17.24	0.00	6.25	17.19	28.13	43.75	50.00	62.50	90.63
MRS	69	30.39	17.93	0.00	6.25	18.75	34.38	43.75	50.00	62.50	91.30
NMRS	26	25.12	14.18	0.00	6.25	18.75	21.88	40.63	43.75	46.88	92.31
<i>Diff. NMRS-MRS</i>		-5.27									1.00
Investment protection											
All	96	33.96	21.77	0.00	0.00	18.18	30.30	54.55	60.61	84.85	86.46
MRS	69	33.47	21.32	0.00	0.00	18.18	30.30	54.55	60.61	84.85	86.96
NMRS	26	36.60	22.59	0.00	0.00	18.18	37.88	60.61	60.61	66.67	88.46
<i>Diff. NMRS-MRS</i>		3.13									1.51
Governance in PC											
All	96	28.36	13.55	0.00	4.71	20.59	29.41	37.65	44.12	51.76	92.71
MRS	69	29.82	13.1	0.00	8.24	25.29	32.35	37.65	45.88	51.76	94.20
NMRS	26	25.25	14.11	0.00	0.00	11.76	28.24	36.47	41.18	41.18	88.46
<i>Diff. NMRS-MRS</i>		-4.57									-5.74
Information rights											
All	96	55.90	34.37	0.00	0.00	33.33	66.67	66.67	100.00	100.00	77.08
MRS	69	57.97	34.13	0.00	0.00	33.33	66.67	66.67	100.00	100.00	79.71
NMRS	26	52.56	34.22	0.00	0.00	0.00	66.67	66.67	100.00	100.00	73.08
<i>Diff. NMRS-MRS</i>		-5.41									-6.63

Table 8: Direct Impact Terms at the GP-LP Level

This table presents summary statistics for fund-level impact terms. Because there are only 14 NMRS funds, the 10th and 90th percentile are interpolated from the 2nd and 3rd, and 11th and 12th ranked funds for each term.

Panel A: Scores by fund type

	N	Mean	S.D.	Min	10 th	25 th	Percentile			Max	%≠0
							50 th	75 th	90 th		
Aspirational impact											
All	51	81.05	24.27	0.00	66.67	66.67	100.00	100.00	100.00	100.00	98.04
MRS	33	80.81	25.04	0.00	66.67	66.67	100.00	100.00	100.00	100.00	96.97
NMRS	14	78.57	24.83	33.33	33.33	66.67	83.33	100.00	100.00	100.00	100.00
<i>Difference NMRS-MRS</i>		-2.237									3.030
Operational impact											
All	51	41.53	23.16	0.00	18.18	27.27	45.45	54.55	72.73	100.00	94.12
MRS	33	43.25	24.06	0.00	18.18	27.27	36.36	54.55	72.73	100.00	93.94
NMRS	14	40.26	22.19	0.00	18.18	27.27	45.45	54.55	72.73	81.82	92.86
<i>Difference NMRS-MRS</i>		-2.991									-1.082

Panel B: Break-out of impact terms

	Score weight	<u>Incidence (% funds)</u>			<i>Difference</i> NMRS-MRS
		All	MRS	NMRS	
<u><i>Aspirational impact terms</i></u>					
Social impact addressed in agreement	1	96%	94%	100%	6.1%
Agreement generally prohibits negative impact	1	59%	58%	50%	-7.6%
Fund commitment to social impact	} 1 if either	82%	88%	71%	-16.5%
Fund commitment to environmental impact		65%	70%	50%	-19.7%
<u><i>Operational impact terms</i></u>					
Fund commitment to international ESG standards	0.5	29%	33%	14%	-19.1%
Fund GP/Manager compensation tied to benefit/impact performance	1	10%	9%	14%	5.2%
Fund investment due diligence policy addresses impact generally	0.5	75%	82%	64%	-17.5%
Fund investment due diligence policy addresses portfolio company impact	1	61%	64%	64%	0.6%
Fund measures social impact	1	73%	76%	64%	-11.5%
Fund uses external, third party monitor or reporting system	0.5	31%	33%	36%	2.4%
Fund has an impact committee	1	18%	15%	21%	6.3%

Table 9: Direct Impact Terms at the GP-PC Level

This table presents summary statistics for PC-level impact terms. “% funds with >0” refers to the fraction of funds in the group that have at least one PC contract with a positive impact score.

Panel A: PC impact score

	N	Mean	S.D.	Min	10 th	25 th	50 th	75 th	90 th	Max	% > 0	% funds with >0
All	96	10.9	13.5	0.0	0.0	0.0	8.5	12.8	31.9	53.2	63.5	86%
MRS	69	11.0	12.5	0.0	0.0	0.0	8.5	12.8	29.8	53.2	71.0	89%
NMRS	26	11.1	16.2	0.0	0.0	0.0	0.0	12.8	40.4	42.6	46.2	80%
<i>Diff. NMRS-MRS</i>		<i>0.476</i>									<i>3.182***</i>	

Panel B: Break-out of impact terms

	Score weight	Incidence (% funds)			Difference NMRS-MRS
		All	MRS	NMRS	
PC's mission locked in at the fund's exit	1	3%	4%	0%	-4.4%
Fund exit right if change in location or business model or benefit	0.5	1%	0%	4%	3.9%
Fund veto right on deviations from the business plan of the PC	1	43%	49%	27%	-22.4%*
PC has an impact committee	0.5	0%	0%	0%	0.0%
Fund participates in PC impact committee	0.5	0%	0%	0%	0.0%
Fund information rights include impact information	1	9%	10%	8%	-2.5%
PC environmental or social benefit is measured	1	20%	17%	27%	9.5%
Internal impact measurement	0.5	2%	3%	0%	-2.9%
External impact measurement	0.5	9%	7%	15%	8.1%
PC impact performance is reported	1	13%	10%	19%	9.1%
Impact performance reporting done annually	0.25	8%	7%	12%	4.3%
Compensation tied to benefit/impact performance	1	2%	1%	4%	2.4%
Impact addressed generally	0.25	39%	39%	39%	-0.7%
Impact identified	0.25	24%	29%	12%	-17.4%*
Additional social impact channels (e.g. ESG standards)	1	13%	15%	8%	-6.8%
Document specifies impact performance reporting	0.25	13%	10%	19%	9.1%

Table 10: Correlation of PC Impact Score with GP-LP Impact Terms

This table presents the estimates of a simple correlation of the impact score at the GP-PC level with impact scores at the GP-LP level, controlling for the number of contracts at the fund level. The observation level is a GP-LP contract. The exact equation estimated is:

$$PC\ impact\ score_i = \beta\ fund\ impact\ score_i + \gamma\ num.\ contracts_i + \epsilon$$

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

	(1) PC Impact	(2) PC Impact
Fund aspirational impact	-0.166* (0.0938)	
Fund operational impact		0.214*** (0.0673)
Num. contracts fund-level	2.001* (1.046)	-0.120 (1.038)
Observations	94	94
R-squared	0.052	0.117

Table 11: GP Compensation

This table presents a comparison of the compensation terms observed for impact funds, relative to non-impact funds documented by Metrick & Yasuda (2010) (MY) and Gompers & Lerner (1999) (GL '99). The incidence rate is defined as the percent of funds with a non-zero value for the term in question. The mode and range are only reported for these non-zero values. For the management fee break-outs, funds with no management fees are counted in the "<2%" group.

	Non-impact		All	Impact		Difference NMRS-MRS
	Reference	Non-impact		MRS	NMRS	
<u>Waterfall</u>						
Incidence	MY (VC+PE)	100%	82%	91%	64%	-27%**
<u>Hurdle rate</u>						
Incidence	MY (VC)	45%	57%	61%	43%	-18%
	MY (PE)	92%				
Mode	MY (VC)	8%	8%	8%	8%	
	MY (PE)	8%				
Range	MY (VC+PE)	6-10%	3-10%	5-8%	3-10%	
<u>Carried interest</u>						
Incidence	MY (VC+PE)	100%	82%	91%	64%	-27%**
Mode	MY (VC)	20%	20%	20%	20%	
	MY (PE)	20%				
	GL '99	20%				
Range	MY (VC)	17.5-30%	10-25%	10-25%	10-20%	
	MY (PE)	all at 20%				
	GL '99	0-45%				
	GL '99	0-45%				
		(81% in 20-21%)				
<u>Catch-up rate</u>						
Incidence	MY (VC+PE)	99%	71%	79%	50%	-29%**
Mode	MY (VC+PE)	20% ¹⁹	20%	20%	20%	
Range	MY (VC+PE)	16.5-20%	3%-25%	3%-25%	10-25%	
<u>Management fee</u>						
Incidence	MY (VC+PE)	100%	69%	73%	50%	-23%
Range			1.50%-3%	1.50%-3%	2.50%-3%	
% of funds:						
< 2%	MY (VC)	43%	41%	39%	50%	
	MY (PE)	8%				
=2%	MY (VC)	47%	0%	0%	0%	
	MY (PE)	41%				
> 2%	MY (VC)	10%	59%	61%	50%	
	MY (PE)	51%				

¹⁹ MY uses 100% to represent that the GPs get 100% of their profit allocation under the contract before the remaining profits are split between the manager and the investors, where that profit allocation is usually 20%. We express that number directly as 20%.

Table 12: Covenants**Panel A: Fund Limits to Manager Discretion and Manager Restrictions at the GP-LP Level**

	<u>Non-impact</u>		<u>Impact</u>			<u>Difference</u>
	Reference	Incidence	All	MRS	NMRS	NMRS-MRS
<u>Limits to Manager Discretion</u>						
<i>Limits to manager discretion – total score</i>			17.7	17.6	15.2	-2.338
Asset restrictions	n/a		88%	91%	79%	-12%
Conflict of interest transactions	n/a		10%	15%	0%	-15%
Fund family co-investment prohibition	n/a		2%	0%	7%	7%
Region investment cap	n/a		0%	0%	0%	0%
No outside region investment	n/a		20%	18%	21%	3%
No outside sector investments	n/a		8%	9%	7%	-2%
Industry restrictions y/n	n/a		20%	15%	14%	-1%
Industry cap	n/a		6%	6%	0%	-6%
<u>Manager Restrictions</u>						
<i>Manager restrictions – total score</i>			23.6	24.6	18.1	-6.532
Reinvesting fund profits	GL '96	21%	69%	67%	64%	-2%
Coinvesting with fund	GL '96	73%	51%	67%	21%	-45%***
Outside fundraising	GL '96	58%	27%	30%	14%	-16%
Outside activities			35%	33%	36%	2%
<u>Combined</u>						
Average number of covenant classes	GL '96	5.6	3.4	3.5	2.6	-0.9

Panel B: Investment Protection and Exit at the GP-PC Level

	<u>Non-impact</u>		<u>Impact</u>			<u>Difference</u>
	Reference	Incidence	All	MRS	NMRS	NMRS-MRS
<u>Investment protection</u>						
<i>Investment protection – total score</i>			34.0	33.5	36.6	3.13
Anti-dilution of fund investment	KS	95%	71%	77%	58%	-19.1%*
Full ratchet preemption	KS	22%	19%	16%	27%	11.0%
Weighted average preemption	KS	78%	13%	15%	8%	-6.8%
Founder/entrepreneur non-compete	KS	70%	50%	49%	54%	4.6%
Fund liquidation rights	KS	71%	49%	38%	81%	43.1%***
<u>Panel C: Exit</u>						
<i>Exit control – total score</i>			28.7	30.4	25.1	-5.27
Fund put/redemption right	KS	79%	52%	54%	50%	-3.6%
	S	43%				
Registration rights	S	90%	45%	42%	54%	11.8%

Table 13: GovernancePanel A: Participatory governance at the GP-LP Level

	<u>Non-impact</u>		<u>Impact</u>			<i>Difference</i>
	Reference	Incidence	All	MRS	NMRS	<i>NMRS-MRS</i>
<i>Participatory governance – total score</i>			75.0	79.1	61.9	-17.22**
Advisory committee incidence	GKM	40%	92%	94%	86%	-8.2%
Advisory capacity incidence (committee, senior advisers, etc.)	GKM	66%				
Advisory committee role:						
Generally advise GP or BOD		n/a	67%	73%	64%	-8.4%
Technical assistance to GP or BOD		n/a	10%	6%	21%	15.4%
Policy assistance to GP or BOD		n/a	14%	12%	21%	9.3%
Evaluate loans		n/a	4%	0%	14%	14.3%**
Investment strategy		n/a	45%	58%	29%	-29.0%*
Due diligence		n/a	41%	52%	21%	-30.1%*
Approve investments		n/a	43%	55%	14%	-40.3%***
Investment financial performance review		n/a	8%	9%	0%	-9.1%
Investment impact review		n/a	6%	6%	7%	1.1%
Approve conflict of interests		n/a	41%	42%	43%	0.4%
Asset valuations		n/a	33%	33%	29%	-4.8%
Approve exit scenarios		n/a	24%	24%	14%	-10.0%
Approve reports and audits		n/a	8%	9%	0%	-9.1%
Approve budgets, reserves, draw downs and/or fees		n/a	18%	18%	14%	-3.9%
Fund compliance		n/a	27%	33%	7%	-26.2%*
Fund life: terminate or extend the fund		n/a	8%	12%	0%	-12.1%
No description		n/a	8%	6%	14%	8.2%

Panel B: Governance at the GP-PC Level

	<u>Non-impact</u>		<u>Impact</u>			<i>Difference</i>
	Reference	Incidence	All	MRS	NMRS	<i>NMRS-MRS</i>
<i>Governance – total score</i>			28.4	29.8	25.3	-4.57
Investor board seats guaranteed	KS	41%	80%	86%	69%	-16.3%*
Number of guaranteed seat?	GKM	2.80	1.4	1.3	1.7	0.38***
PC board size	GKM	5-7 mem.	6.0	6.1	5.9	-0.11
	KS	6 mem.				
Investor majority control	KS	25.4%	0%	0%	0%	0%
Investor min. voting %	KS	53.6%	21%	25%	9%	-15.6%***

Appendix 1

Table A-1: Additional Summary Statistics for Sample of Impact Funds & Documents

Panel A: GP-LP contracts

Panel A: GP-LP contracts	<u>All funds</u>		<u>MRS funds</u>		<u>NMRS funds</u>	
	N	%	N	%	N	%
Number of funds	51		33		14	
Number of documents	105		67		33	
Fund Size						
< \$10 M	15	29%	10	30%	4	29%
\$10-50 M	15	29%	10	30%	4	29%
\$50-100 M	3	6%	3	9%	0	0%
\$100-500 M	6	12%	3	9%	2	14%
> \$500 M	2	4%	1	3%	0	0%
Unknown	10	20%	6	18%	4	29%
Stage focus						
Early	11	22%	8	24%	3	21%
Later	9	18%	6	18%	3	21%
Multiple	28	55%	17	52%	7	50%
Sector focus	6	12%	3	9%	2	14%
SME focus	6	12%	2	6%	2	14%
Undefined	15	29%	11	33%	3	21%
Stage unknown	3	6%	1	3%	2	14%
Geographic focus						
Undefined	18	35%	13	39%	4	29%
United States and Canada	18	35%	11	33%	6	43%
Europe	4	8%	1	3%	3	21%
Latin America	10	20%	6	18%	4	29%
Africa	15	29%	6	18%	6	43%
South Asia	7	14%	6	18%	1	7%
Southeast Asia	3	6%	3	9%	0	0%
Asia - Other	6	12%	3	9%	3	21%
Global	1	2%	1	3%	0	0%
Other	3	6%	3	9%	0	0%
Industry focus						
Finance and Microfinance	12	24%	7	21%	5	36%
Agribusiness/Farming	17	33%	13	39%	4	29%
Sustainable Development	9	18%	7	21%	1	7%
Tech. & Business Services	9	18%	6	18%	3	21%
Water and Sanitation	10	20%	8	24%	2	14%
Energy	8	16%	8	24%	0	0%

Housing	5	10%	3	9%	1	7%
Essential Individual Products	9	18%	8	24%	1	7%
Education	9	18%	9	27%	0	0%
Manufacturing	9	18%	5	15%	3	21%
Handicrafts	1	2%	1	3%	0	0%
Environment	7	14%	6	18%	1	7%
Social/Poverty	12	24%	11	33%	1	7%
Health	13	25%	9	27%	4	29%
Employment	3	6%	3	9%	0	0%
Other	11	22%	6	18%	4	29%
Undefined	21	41%	14	42%	6	43%
Country of origin						
Belgium	1	2%	0	0%	1	7%
Botswana	2	4%	1	3%	0	0%
British Virgin Islands	1	2%	1	3%	0	0%
Canada	4	8%	4	12%	0	0%
Cayman Islands	3	6%	3	9%	0	0%
India	1	2%	1	3%	0	0%
Luxembourg	5	10%	1	3%	4	29%
Mauritius	3	6%	2	6%	1	7%
Netherlands	2	4%	2	6%	0	0%
South Africa	2	4%	0	0%	0	0%
United Kingdom	1	2%	0	0%	1	7%
United States	25	49%	18	55%	6	43%
Unknown	1	2%	0	0%	1	7%

Panel B: GP-PC contracts

	<u>All funds</u>		<u>MRS funds</u>		<u>NMRS funds</u>	
	N	%	N	%	N	%
Number of funds	16		9		6	
Number of PCs	93		67		25	
Number of documents	96		69		26	
Industry focus						
Finance and Microfinance	16	17%	14	20%	2	8%
Agribusiness/Farming	21	22%	13	19%	8	31%
Sustainable Development	0	0%	0	0%	0	0%
Tech. & Business Services	9	9%	8	12%	1	4%
Water and Sanitation	2	2%	2	3%	0	0%
Energy	2	2%	1	1%	1	4%
Housing	2	2%	2	3%	0	0%
Essential Indiv. Products	1	1%	1	1%	0	0%
Education	1	1%	1	1%	0	0%
Manufacturing	5	5%	5	7%	0	0%
Handicrafts	3	3%	3	4%	0	0%
Environment	0	0%	0	0%	0	0%
Social/Poverty	1	1%	1	1%	0	0%
Health	5	5%	5	7%	0	0%
Employment	0	0%	0	0%	0	0%
Other	3	3%	2	3%	1	4%
Undefined	40	42%	23	33%	16	62%
Geographic focus						
US and Canada	4	4%	0	0%	4	15%
Europe	2	2%	2	3%	0	0%
Latin America	6	6%	6	9%	0	0%
Africa	16	17%	8	12%	8	31%
South Asia	11	11%	10	14%	1	4%
Southeast Asia	3	3%	3	4%	0	0%
Asia - Other	0	0%	0	0%	0	0%
Global	2	2%	2	3%	0	0%
Undefined	53	55%	38	55%	14	54%
Fund investment position						
0-10%	6	6%	2	3%	4	15%
10-25%	29	30%	27	39%	2	8%
25-50%	22	23%	18	26%	4	15%
50%+	7	7%	6	9%	0	0%
Unknown	32	33%	16	23%	16	62%

Panel C: Comparison of Survey Responses, Sample v. Non-Sample Funds

	<u>Provided Contracts</u>					<u>Did Not Provide Contracts</u>					Difference
	N	mean	p25	p50	p75	N	mean	p25	p50	p75	
Market-rate seeking	44	68%	0	1	1	54	72%	0	1	1	4.04%
Vintage year	44	2008	2005	2009	2012	45	2007	2006	2009	2011	-0.99
Committed capital (\$million)	42	92.3	12	28	74.4	41	195.1	12.19	42.45	220	102.80
Fund's initial term (years)	35	9.3	8	10	10	30	8.9	8	10	10	-0.41
Latest age of fund	29	7.1	4	6	9	31	7.1	4	6	9	0.03
# companies invested	40	14.4	5	8	12	52	14.6	7	11.5	17	0.27
# funds currently managed by firm	29	3.7	1	2	3	31	2.1	1	2	3	-1.66
# funds managed by most senior firm GP	27	8.4	2	4	7	27	3.6	2	3	5	-4.82**
Target Net IRR	33	15%	10%	15%	20%	26	14%	6%	15%	17%	-0.86%

Table A-2: Correlation of Impact and Compensation Terms at the GP-LP Level

This table presents the estimates of a simple correlation of different compensation terms with the impact scores, controlling for the number of contracts at the fund level. The exact equation estimated is:

$$compensation\ term_i = \beta\ fund\ impact\ score_i + \gamma\ num.\ contracts_i + \epsilon$$

Compensation terms are in percentage points (e.g., 8 for an 8% hurdle rate). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Panel A: Aspirational impact

	(1) Hurdle rate	(2) Carry rate	(3) Catch-up rate	(4) Management fee
Aspirational impact	0.00744 (0.0231)	0.0375 (0.0454)	-0.0132 (0.0555)	0.0137* (0.00716)
Number of contracts	0.394 (0.441)	1.307 (0.868)	0.901 (1.060)	-0.0962 (0.137)
Observations	51	51	51	51
R-squared	0.020	0.064	0.015	0.075

Panel B: Operational impact

	(1) Hurdle rate	(2) Carry rate	(3) Catch-up rate	(4) Management fee
Operational impact	0.0194 (0.0247)	0.0550 (0.0485)	0.0414 (0.0594)	0.00833 (0.00788)
Number of contracts	0.324 (0.449)	1.146 (0.883)	0.682 (1.081)	-0.102 (0.144)
Observations	51	51	51	51
R-squared	0.031	0.076	0.024	0.027

Table A-3: Operational Impact in GP-PC Contracts and GP-LP Indirect Terms

This table presents the estimates of correlations between impact at the PC level with other scores at the fund level, controlling for the number of contracts at the fund level. The exact equation estimated is:

$$PC\ impact_i = \beta\ fund\ score_i + \gamma\ num.\ contracts_i + \epsilon$$

Each cell represents the result of a separate regression. The coefficient on number of contracts is omitted for brevity.

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

	All	MRS	NMRS
Investor (LP) return protection	-0.100 (0.0758)	0.005 (0.084)	-0.486 (0.4401)
Participatory (LP) governance	0.257*** (0.0868)	0.659*** (0.1065)	0.001 (0.1465)
Limits to manager (GP) discretion	0.315** (0.1468)	0.781*** (0.1529)	-0.029 (0.4802)
Manager (GP) restrictions	0.012 (0.0591)	0.216*** (0.0738)	-0.071 (0.1261)
N	94	58	25

Appendix 2: Scoring Notes

Available [here](#).