What Do Impact Investors Do Differently? *

Shawn Cole, Leslie Jeng, Josh Lerner, Natalia Rigol, Benjamin N. Roth

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Abstract

In recent years, impact investors – private investors who seek to generate simultaneously attractive financial and social returns – have attracted intense interest and controversy. We analyze a novel, comprehensive data set of impact and traditional investors to assess how the non-financial characteristics of impact portfolios differ from their traditional counterparts. We exploit the co-investment network between venture investors to identify the extent to which impact investors expand the financing frontier, versus invest in companies that could have attracted traditional venture financing, and find considerable heterogeneity across impact investors. We then explore the portfolio allocation decisions of impact investors and document that they are more likely to invest in disadvantaged areas, crowd in non-impact follow-on investors, and are more likely to invest in "pioneer companies" – the first 30 or 40 companies in new industries. Relative to traditional investors, impact investors select companies that are less likely to reach exits and take longer to do so, which is consistent with greater risk tolerance and longer time horizons. These patterns are most pronounced amongst the impact investors that seek out deals that did not attract traditional investors.

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1 Introduction

In recent years, impact investors – private fund managers who seek to generate both financial and social returns – have attracted intense interest. Large traditional private investors, such as Bain Capital, KKR, and TPG, have raised substantial funds seeking to accomplish these twin goals. Meanwhile, dedicated impact-focused groups have proliferated.

The expansion of activity in this area has proven highly controversial. In a high-profile illustration, Florida's state pension fund announced in August 2022 its intention to eliminate from consideration any funds that use environmental, social, and governance (ESG) considerations when making investment decisions, arguing that maximizing returns for shareholders should be their primary focus (Ramkumar 2022). Conservative observers have argued that targeting social goals is likely to lead to lower returns and limited societal benefits (Ramaswamy 2021). Meanwhile, liberal critics have wondered whether these funds can achieve desirable social goals in the absence of government regulations (e.g. Fancy 2021), or even whether their presence actually slows social progress (Giridharadas 2019). Academic research has suggested that the financial returns of impact funds have substantially underperformed private market benchmarks (Barber et al. 2021; Kovner and Lerner 2015), though Jeffers et al. (2021), whose sample of impact funds excludes concessionary funds, finds a more positive picture.

While the bulk of the literature has focused on the financial performance of these funds, much less is known about the social impact of impact investing.[1] Of course, social outcomes are more difficult to assess. But this omission is surprising, given the extensive focus in the literature about traditional private equity on both financial returns (e.g. Kaplan and Schoar 2005; Harris et al. 2014) and social impact. Examples of the latter

[1] Geczy et al. (2021) is a partial exception, studying how *contracting choices* in impact investing relate to measures of social impact. That paper finds that while impact investors rarely tie compensation to social impact, they nevertheless incorporate impact goals in other ways into both LP agreements and governance contracts.

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include studies of employment and productivity (Davis et al. 2014), innovation (Lerner et al. 2011) and numerous industry-specific studies beginning with Bernstein and Sheen (2016).

This paper seeks to characterize the non-financial characteristics of impact investments to shed light on several core mechanisms (or, "theories of change") by which impact investors may create impact. We compare the investment behavior of impact investors with that of traditional venture and growth equity investors, to highlight the special role that impact investors play in the financing landscape. The four theories of change that we evaluate are that:

1. Impact investors prioritize portfolio companies that would have trouble attracting traditional financing;

2. Impact investors prioritize poorer or otherwise disadvantages regions of the US and the world;

3. Impact investors are pioneers in new industries and they utilize their capital to attract traditional investors;[2]

4. Impact investors exhibit more risk tolerance and patience.

To assess these theories of change we construct a new comprehensive data-set covering a broad spectrum of impact funds. To identify the impact funds, we combine a wide variety of data from impact organizations, investment group websites, and commercial databases. Together this information gives us an exhaustive view of impact-focused private capital groups. In order to contrast the investment activity of impact and non-impact investors, we use activity as recorded in PitchBook. This approach facilitates an "apples-to-apples" comparison of activity.

[2]Anecdotally, many important new industries, from health maintenance organizations to microlending, initially had philanthropic or impact investors as key financiers before experiencing an influx of private funding.

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The first step of our analysis utilizes the co-investment network between investors of different types to characterize the extent to which impact investors seek to be *additional* – our first theory of change. A growing body of theoretical work argues that a promising way to create impact, relative to the level of social impact achieved by traditional investors, is to seek out investments that traditional investors would reject, i.e. that they are additional (Brest and Born 2013; Oehmke and Opp 2020; Green and Roth 2021). In these models, if impact investors are not additional, and simply finance socially beneficial enterprises that would have attracted traditional venture capital anyway, then the net effect of the investment is simply to displace socially neutral investors. In contrast, if impact investors explicitly seek out high-impact companies that could not attract traditional capital, then at worst they are displacing other socially motivated investors who go on to support other impact enterprises.[3]

We exploit the network structure of our data to characterize which impact investors are additional and which are not. We utilize a revealed preference approach, exploring how frequently impact investors co-invest (in the same round of investment) with traditional investors. Any time traditional investors co-invest with impact investors in the same round, we argue that the investment is unlikely to be additional, as traditional investors have demonstrated their willingness to support the deal on its financial merits alone. Perhaps surprisingly, we find that 60% of all deals that involve an impact investor also include traditional venture investors, indicating that these deals would have occurred in the absence of investors who prioritize impact.

There is also a considerable degree of heterogeneity across impact investors in terms of the frequency with which they co-invest with traditional investors. We utilize a network theoretic approach to identify additional impact investors. Specifically, we use a minimum cut algorithm, which partitions the set of investors into two distinct sets. It does so

[3]To be sure, impact investors can add value in other ways than providing advice or introductions to other investors and corporations.

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by minimizing the number of "links" (pairs of investors who co-invest) that cross the partition. This approach identifies impact investors who do not co-invest with traditional investors, those who do not co-invest with impact investors who co-invest with traditional investors, and so on. Using this approach we identify that 12% of impact investors are additional. We describe the characteristics of additional and non-additional investors. For instance, we frequently encounter impact funds co-investing with traditional groups in later rounds of well-funded companies such as Tesla.

Our next analysis is to characterize the investment strategies of impact investors, with regard to theories of change 2 – 4 above. We pay special attention to heterogeneity in behavior based on whether impact investors are additional. We also examine whether they self-identify as concessionary (i.e., are willing to accept below market risk adjusted financial returns).

We highlight three key sets of findings. First, impact groups are more likely to invest in poorer regions, both within the U.S. and across the world. They are also likely to select more rural regions of the U.S., as well as those where a greater share of the population has only a high school education, and where there is more mortality from drugs and alcohol. These patterns are driven primarily by the subsets of impact investors that are either explicitly willing to accept concessionary returns, or who are identified as additional using our revealed preference approach. For the most part, other impact investors display no such preferences.

Second, we find evidence generally consistent with the importance of impact investors as pioneers in new industries. Impact investors are more likely to be among the first few dozen investors in an industry class. Interestingly, the industry pioneers are most likely to be the non-concessionary and non-additional impact investors. We further find that impact investors often "step aside" in favor of traditional private investors as their portfolio companies seek additional rounds of financing. Here, the patterns are strongest among additional impact investors, who are more likely to step aside as their portfolio

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companies progress through successive rounds of financing.

Finally, we examine the claim that impact investors have greater risk tolerance and/or are willing to invest in companies with longer time horizons to exit. Here the evidence is less conclusive. Impact funds do invest in companies with lower ultimate success rates and that take longer to reach a successful liquidation event. This pattern, however, may be interpreted in different ways: it may reflect a greater tolerance for risk ex-ante, but is also consistent with a lesser ability to evaluate potential investments or to add value to the firms in their portfolios.

To investigate the extent that lower success rates of impact investors are a result of them searching for deals in more difficult industries, we compute the average success rate and time to success for portfolio companies in each of the 215 industries classified by PitchBook in each year of our data. We then evaluate whether impact investors are investing in industry $\times$ year categories with lower success rates and longer time to success. We find that about three-quarters of the difference in success rates and nearly all of the difference in time to success come from within industry variation, indicating that the lower rates of success do not come from the choice of tougher industries in which to invest. (Of course, impact investors could intentionally be picking more challenging firms to invest in within industry $\times$ year categories.) Regardless of the channel, our findings suggest that impact investors tolerate more risk and exhibit more patience in their ultimate portfolio outcomes.

This analysis suggests several take-aways. The first is the substantial heterogeneity amongst impact investors in the degree to which they prioritize impact. Much of this heterogeneity is not readily apparent even based on their own classification as concessionary vs. market-return seeking. Rather, the extent to which impact investors are additional – a characteristic illuminated by our co-investment network – is highly correlated with the extent to which they prioritize impact. Second, our analysis provides support for many impact investors' "theories of change," with varying emphasis on disadvantaged areas,

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pioneering investments, and investing in riskier transactions. Whether the benefits from these investment approaches are sufficient to compensate for the lower returns found in the literature is an issue that we hope future work will be able to answer.

The rest of the paper proceeds as follows. Section 2 describes our data and key descriptive statistics. Section 3 presents our analysis of the extent to which impact investors do or do not seek out deals that would have been made by traditional investors. Section 4 presents our analysis of the characteristics of impact investments and Section 5 concludes.

2 Data and Descriptive Statistics

2.1 Data Construction

This paper is the first to use a newly created data set, which we believe is the most comprehensive data set on impact investors and their portfolio companies. An accompanying technical paper (Burton et al. 2021) describes the data construction process in detail – here we focus on the key elements. Appendix Section B provides more details on the data set construction.

We define impact investors to be investors with the explicit dual objective of generating social good and financial returns (we note there is not yet a single widely adopted definition of impact investing.) To compile our catalog of impact investors and portfolio companies, we draw upon information in multiple financial databases, performing extensive matching and data quality checks. We then compare our results with expert judgments, published reports, and other independent research to remove firms that do not target both social good and financial returns.

We identify impact investors using nine established resources on impact investing[4]:

[4]The version of the databases that we used were as follows: ImpactBase as of 01/15/2018, Community Development Venture Capital Association (CDVCA) as of May 2019, Impact Assets for the period 2011-2019, Preqin's alternative assets database as of 06/30/2018, Impact Capital Managers members as of May 2020, list of asset managers who are GIIN members as of May 2020, GIIN's Investors' Council members

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1) ImpactBase, the global directory of impact investment funds from the Global Impact Investing Network (GIIN), 2) the Community Development Venture Capital Association (CDVCA) website, 3) the Impact Assets website, 4) Preqin's alternative assets database, 5) Impact Capital Managers ("ICM") members, a consortium of general partners, 6) the list of asset managers who are GIIN members, 7) GIIN's Investors' Council members, 8) the signatories to the Operating Principles for Impact Management originated by the International Finance Corporation, and 9) the Private Equity International ("PEI") "Impact Investment Firm of the Year" top three honorees for the years from 2017 onward.

Aside from Preqin, all of these are special compilations that focus specifically on impact investors. In Preqin, the "fund ethos" variable allows investors to self-identify as having a focus on at least one of the following five categories: "Microfinance"; "Economic Development"; "Socially Responsible"; "Environmentally Responsible" and "Sharia Compliant." We expand this preliminary list by adding investment firms whose stated industry focus corresponds with so-called impact sectors. In particular, we add investment firms that primarily invest in "Clean Technology," "Education/Training," and "Environmental Services." Finally, we further add investment firms that primarily invest in low-income countries, identified as those countries with a GDP per capita of less than U.S. $1,400. This process results in a total of 2,747 potential impact investors for further investigation. We then narrow this set by eliminating those that do not align with our definition of impact investors. We manually search their websites, if available, to see if they make any mention of a dual aim of generating social and financial returns.[5] Through this process,

as of May 2020, signatories to the Operating Principles for Impact Management originated by the IFA as of May 2020

[5]We accomplish this by using Amazon's crowdsourcing marketplace, Mechanical Turk ("MTurk") and their online workforce of "MTurkers." We asked the MTurkers to collect the description, stated mission, and investment strategy as listed on the potential impact investor's website, and to identify whether or not they make mention of the dual aim of generating both financial and social returns. For each potential impact investor, we asked three MTurkers to review its website. If two of three MTurkers voted to exclude an investor, it was excluded. Using this approach, we narrow the list of 2,747 to 624 potential impact investors. Again, following Barber et al. (2021), the remaining 624 were then manually verified by a member of the Project on Impact Investments team, through a careful review of the background and strategy on the impact investor's website to identify any mention of the dual objectives of social impact

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we identify 199 impact investors from Preqin, compared to the 159 identified by Barber et al. (2019) in the period from 1995 to 2014.

We combine the information from all of the above listed sources to create a list of 445 unique impact investors. Next, we eliminate traditional private equity firms that have large impact investment funds (13 impact investors).[6] Lastly, we eliminate development finance institutions such as the International Finance Corporation (a subsidiary of the World Bank) and groups that were launched without an impact mandate but subsequently added one (46 impact investors). These criteria left us with 386 impact investors.

An important contribution of our efforts is a recognition of the significant and material heterogeneity within the impact investing sector, as noted above. We identify and analyze differences along several dimensions: legal form (profit or non-profit), co-investor network, and financial objective (targeting competitive market-rate returns or promising concessionary returns).

Having created this list of impact firms, we wish to compare their investment activity to other private equity groups. The source of our data on portfolio companies of both impact and traditional investors is the complete database of PitchBook, one of the most comprehensive databases which links investors to investments. We did not use any data set that lists only impact-specific investments, as we wanted an equivalent level of comprehensiveness for both impact and traditional firms. We detail our sample inclusion criteria in Appendix B; the following paragraphs provide an overview.

We extracted all pre-venture, venture capital, private growth equity, and private equity investments as of May 2021, identifying over 20,000 investors. From the PitchBook data, we remove investor categories which do not have venture capital or private equity growth

and financial returns. Only those investment managers who make explicit statements that signal a dual objective were classified as impact investors.

[6]This approach screens out funds such as the Texas Pacific Group ("TPG") Rise Fund and Bain Capital's Double Impact. While these funds are large, they present a challenge in identifying portfolio companies, as data sources often indicate the firm (e.g., Bain Capital), rather than the fund. Their newness also means outcome data for portfolio companies are typically not available.

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as a main part of their overall investment strategy.[7] Of the remaining investors, we further restrict our sample to focus on investors that have at least four private capital portfolio companies, thus removing investors that may only have one-off venture capital or PE growth investments (e.g., we do not want to include a mutual fund that has a few private equity investments, where private equity is not a main part of its investment strategy).[8] In addition, we drop failed deals, companies without any venture rounds, and debt rounds. We also remove companies whose first investment is an LBO, as well as a handful of companies with multiple buyout/LBO transactions.

This process reduces the number of impact investors in the database to 275,[9] which have made investments in a total of 6,064 portfolio companies. The comparable set of non-impact investors includes about 20,000 traditional investors, which have invested in 209,000 companies. Like most data sources derived from securities filings such as U.S. Securities and Exchange Commission Form D, PitchBook does not typically identify the amount of capital or ownership stake of each individual investor in each investment round, just the aggregate amount in the round.

Appendix Table B.III provides a complete list of the 275 impact investors included in the analysis.

[7] We exclude the following PitchBook categories of investors: Angels, Business Development Company, Corporate Development, Corporate Venture Capital, Corporation, Family Office, Fund of Funds, Fundless Sponsor, Government, Hedge Fund, Holding Company, Investment Bank, Limited Partner, Merchant Banking Firm, Mutual Fund, Other, Private Equity-Backed Company, Secondary Buyer, Sovereign Wealth Fund, Special Purpose Acquisition Company, University, and Venture Capital-Backed company.

[8] Given the comparatively smaller number of impact investors in our data set, we were able to manually assess each investor to ensure that venture and private equity investing are a core part of their strategy. Thus we do not apply the criterion that impact investors have at least four venture capital or private equity deals.

[9] 96 of the impact investors on our list did not have investments in Pitchbook; 15 groups that have no successfully completed investments in PitchBook, are subsidiaries of other groups, or have no VC or PE growth investments.

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2.2 Descriptive Statistics

Table I provides basic descriptive statistics about the investors in our sample. Column 1 presents statistics about traditional venture investors. Column 2 presents the difference between impact and traditional investors for each outcome. Panel A of Table I shows that on average, traditional investors and impact investors have similar portfolio sizes, having supported approximately 25 companies with 30 investments. However, there are substantial differences in average deal size: the average for traditional investors is $8.7 million, as against $4.9 million for impact investors.

In Panel B of Table I, we also see significant differences in investment location. Relative to traditional investors, impact investors are more likely to invest in low income regions of the world: Sub-Saharan Africa, South Asia, and Latin America, and the Caribbean, and less likely to invest in Canada, East Asia, Europe, Middle East, North Africa, Russia, and Central Asia. We also see differences in sector allocation (Panel C in Table I): impact investors are more likely to invest in consumer staples, energy, financials, industrials, materials, real estate, and utilities, and less likely to operate in communication services, discretionary consumer goods, healthcare, and information technology. The latter set of sectors have been the focus of many traditional venture capital and growth investors.

In Figure 1, we document the growth of the impact investment sector, plotting over time the number of impact deals, the number of impact investors, and an estimate of the total dollar value of impact financing over time.[10] To our knowledge, these are the first comprehensive data on the size of the impact investing sector. Twenty years after the birth of impact investing, we see that 6,064 firms have received funding from impact investors, in 8,855 investment rounds. These represent approximately 2% of all venture-investment and private equity growth rounds and 3% of all venture-funded and private

[10]Pitchbook provides the dollar amount of each investment round, but does not identify how much each participating investor contributed; we impute the amount invested by an impact investor by dividing the total amount invested in the round by the number of investors.

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equity growth enterprises.

3 Do Impact Investors Seek "Additional" Investments?

Our first point of analysis is to characterize the extent to which impact investors finance portfolio companies that could not attract traditional venture capital. This phenomenon is colloquially referred to as "additionality" (e.g. Brest and Born 2013), and we will refer to impact investors who exhibit this behavior as *additional*.

The literature studying the theory of investors with social preferences has typically modeled these preferences in two ways. In addition to their financial return, socially motivated investors either care about the social value of firms within their portfolio (e.g. Pástor et al. 2021; Pedersen et al. 2021; Landier and Lovo 2020), or they care about the contribution of their own actions to social welfare (e.g. Oehmke and Opp 2020; Landier and Lovo 2020; Green and Roth 2021; Gupta et al. 2022). These two preferences have been shown to lead to divergent behavior. Investors who care only about the social value of the firms in their portfolio tend to invest in the most socially valuable firms, whereas investors who care about the contribution of their own actions to social welfare tend to exhibit additionality – that is, they prioritize investment in high-impact firms that could not have attracted traditional capital.

A growing body of theory argues that being additional is a promising way for investors to create impact, relative to the baseline level of social value created by traditional venture investors (Brest and Born 2013; Oehmke and Opp 2020; Green and Roth 2021). The underlying logic goes as follows. Some impactful companies are also sufficiently profitable such that they could attract traditional venture investors. A non-additional impact investor could amass a portfolio of many of these companies. Yet in financing these companies, if the impact investor does not at least give these companies more capital than a traditional investor would have, the impact investor is merely displacing traditional

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venture investors. The net impact of these investments is then not the impact of the portfolio companies that the impact investor supports (as these companies would have been financed regardless), but rather the impact of marginally expanding the pool of traditional, purely financially motivated venture capital. Therefore, this non-additional impact investor does not create more impact than a traditional venture investor would have, regardless of how impactful her portfolio companies are.[11] In contrast, an additional impact investor would prioritize investing in portfolio companies that are both impactful and would not have been able to attract traditional venture investors. In so doing, the additional impact investor expands the total set of impactful companies that receive venture financing, and therefore has more impact than a traditional venture investor would have had in her stead.

3.1 How Many Impact Investments are Additional?

While a number of papers have illuminated the theory underlying additionality in impact investing, the extent to which impact investors prioritize additionality in practice remains an open question. The conceptual challenge in addressing this question is identifying which portfolio companies could have been financed in the absence of impact investors. We overcome this challenge by following a revealed preference approach to identify non-additional impact investments. Any time a traditional investor co-invests with an impact investor in the same financing round of a particular company, we conclude that investment cannot have been additional, as a traditional investor has demonstrated the deal was worth investing in on the basis of financial considerations alone.[12]

Table II presents our key co-investment statistics. Our first result is that the majority

[11] This logic abstracts from ways in which impact investors can have impact post-investment, by exerting influence on the direction of a company's development. These considerations are beyond the scope of our analysis.

[12] This approach abstracts from the possibility that traditional investors come into a deal because an impact investor enticed them to join. To the extent that impact investors are ever the "anchor investor" in a deal, our metric will understate the degree of additionality amongst them.

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of impact investments are not additional. Specifically, of the 8,121 deals that include an impact investor in our data set, 61.4% of them have a traditional venture co-investor. More than half of the investments made by impact investors in our data were also attractive to a traditional investor solely on the basis of financial considerations. For reference, 31.2% of deals that include only traditional investors have one or more co-investors. The practice of co-investing with traditional investors is therefore much more prevalent amongst impact investors than amongst traditional investors with one another. Across both impact and traditional investors, co-investment is substantially more frequent in venture capital relative to private equity deals. And across traditional and impact investors, co-investment is more common in later rounds of a company's financing than in early rounds, though it is relatively common in both cases.

3.2 How Many Impact Investors are Additional?

While the majority of impact deals are not additional, there is considerable investor-level heterogeneity. To characterize which impact investors are additional and which are not, we exploit the network structure of our data where each node is an investor and there is a link between two investors any time that they have co-invested in the same financing round of a company (e.g. Hochberg et al. 2007).

Throughout our analysis, we utilize two network-based measures of the degree to which an impact investor aims to be additional. The first and simpler measure is *Fraction of Impact Only*, defined as the fraction of an impact investor's deals for which all of the co-investors are also impact investors. *Fraction of Impact Only* is 1 if an impact investor never co-invests with a traditional investor, and is 0 if all of an impact investor's deals have at least one traditional investor in them.

Figure 2 plots the distribution of *Fraction of Impact Only* for the population of impact investors. The distribution has mass throughout the full range, though with distinctly

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more mass at the low end. About 7% of impact investors never co-invest with a traditional investor, while about 14% of impact investors always co-invest with at least one traditional investor. The average over all impact investors is that 58% of their deals are co-invested with traditional investors.

Our second measure of additionality comes from a network-theoretic algorithm meant to divide impact investors into those that regularly co-invest with traditional investors and those that do not. We utilize a variant of the minimum-cut algorithm (Stoer and Wagner 1997). Specifically on top of our co-investment network, we create two additional nodes, one of which we call *Impact*, and which is linked to every impact investor, and one of which we call *Traditional* and is linked to every traditional investor. These nodes are meant to represent the self-identification of impact and traditional investors. The algorithm then partitions the investors into two sets, so as to minimize the number of links (co-investments) that cross the partition. For details of the implementation of this algorithm, see Appendix Section C.

The result of this algorithm is a partitioning of impact investors into two sets, where investors in one set rarely co-invest with investors in the other set. Impact investors in the "impact partition" rarely co-invest with traditional investors, and also rarely co-invest with impact investors who regularly co-invest with traditional investors. We refer to these impact investors as *additional* and we refer to the impact investors who fall into the "traditional partition" as *non-additional*. By this metric, approximately 12% of impact investors are additional (Table II). Both of the above measures of investor additionality highlight that while a material fraction of impact investors appear to be additional, the vast majority do not.

How do additional impact investors differ from non-additional impact investors? The first dimension we investigate is whether impact investors declare themselves to be concessionary – i.e. whether they are willing to accept below-market risk adjusted financial returns. Seventeen percent of all impact investors in our sample identify as concession-

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ary (Table II). Surprisingly, concessionary impact investors are not more likely to make additional investments, relative to the full population of impact investors. Only 14% of concessionary investors are additional, which is not statistically significantly different from the 12% additional impact investors in the full population. That is, impact investors who express willingness to accept below-market returns are no more likely to support portfolio companies that could not attract traditional venture financing relative to the full population of impact investors.

Table I explores a number of other characteristics of additional impact investors. Recall that Columns 1 and 2 compared the full population of impact investors to traditional investors. Columns 3 and 4 of Table I compare additional impact investors to non-additional impact investors, and, for reference, Column 5 and 6 compare concessionary impact investors to non-concessionary impact investors.

Relative to the non-additional impact investors, additional impact investors have invested in 33 fewer deals on average, and each deal is on average $2.2 million smaller (though this latter difference is not statistically significant). Additional impact investors are also somewhat younger than the non-additional impact investors on average. Additional impact investors are more likely to invest in Latin America, the Caribbean, and Sub-Saharan Africa, though these differences marginally miss traditional levels of statistical significance. Additional impact investors are more likely to invest in consumer staples and less likely to invest in real estate.

Consistent with the above finding that concessionary investors are no more likely to be additional, Table I indicates there are few significant differences between impact investors who designate themselves as concessionary and those that do not. This is a finding that will be reinforced throughout the subsequent analysis. While several differences will emerge between impact investors that self-identify as concessionary and those that do not, our revealed preference measure of investor additionality is a stronger predictor of heterogeneity in behavior.

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4 The Portfolio Allocations of Impact Investors

Having characterized the extent to which impact investors seek to be additional, we next turn to the key characteristics of their portfolio allocations, and how they differ from traditional venture investors. For each analysis, we will investigate differences between investments at the portfolio company level and at the investor level.

At the portfolio-company level, along the lines in the previous section, we will differentiate between companies that have ever had a financing round comprised only of impact investors, what we term *impact-only* firms, companies that have had an impact investor but never an impact-only round (an *impact-present* firm), and companies that have only had traditional investors (*traditional-only* companies).

In Appendix Section A, we also differentiate amongst portfolio companies that received an impact investment in their first round of financing, and those that received an impact investment only in subsequent rounds of financing. Our goal here is to investigate whether portfolio companies that required an impact investment in their earliest stages systematically differ from those companies in which impact investors merely "tag along" once they have gained momentum. However, for the most part, we do not find significant differences along these lines.

At the investor level, we compare both the aggregate portfolios of impact investors to traditional investors and the portfolios of different kinds of impact investors. As above, our areas of focus are concessionary impact investors and additional impact investors. In Appendix Section A we also investigate heterogeneity by whether impact investors are for-profit or nonprofit, and we explore heterogeneity based on our alternative measure of additionality: the fraction of an impact investor's deals that include traditional investors (*Fraction of Impact Only*).

A consistent finding throughout is a great deal of heterogeneity amongst impact investors and impact deals. Impact-only companies appear more oriented towards social

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impact than impact-present companies. At the investor level, concessionary impact investors, nonprofit impact investors, and additional impact investors appear more socially oriented than other impact investors and traditional venture investors, with the differences often being most pronounced for the additional impact investors.

Appendix Table A.I defines the key variables we will use throughout the analysis to follow, at both the portfolio and investment round level.

4.1 Geographic Drivers of Impact Investments

What characteristics of a geography do impact investors prioritize? Panel A of Table III reports results from the following regression:

$$y_i = \alpha + \beta_1 ImpactOnly_i + \beta_2 ImpactPresent_i + \varepsilon_i \quad (1)$$

where y_i is the outcome of interest for company i, $ImpactOnly_i$ is a dummy taking a value of 1 if company i is an impact-only company (i.e., ever had an impact-only round) and $ImpactPresent_i$ is a dummy taking a value of 1 if company i was ever supported by impact investors but never had an impact-only round. The omitted group is companies exclusively financed by traditional investors.

Relative to traditional investor-only companies, impact-only companies are more likely to operate in poorer areas. Restricting the sample to investments within the U.S., Column 1 shows that impact-only companies on average operate in counties with median household income $3,982 lower than traditional-only companies. This is about 6% lower than the median household income in the counties of the average traditional-only portfolio company. We see a similar pattern when looking at the country level (Column 7), which demonstrates that impact-only companies on average operate in countries with $9,982 lower GDP per capita relative to traditional-only companies, a roughly 25% difference.

Relative to traditional-only companies, impact-only companies in the U.S. operate in

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areas that are 36% less densely populated (Column 2), and with 6% higher per capita deaths from drugs and alcohol. Impact-only companies also appear to operate in "middle education" areas, in the sense that on average there are more people with a high school education but fewer with a college degree (Columns 5 and 6).

Turning our attention to impact-present companies, all of these patterns either disappear or reverse. There is no significant difference between the average income in areas where traditional-only companies operate versus impact-present companies. Impact-present companies operate in more populated areas, in areas with smaller Black and Hispanic populations, and in areas with more college graduates. In summary, while impact-only companies clearly prioritize disadvantaged areas, there is no evidence that impact-present companies are more likely to operate in disadvantaged areas. In fact, there is some evidence to the contrary.

In Appendix Table A.II Panel A, we investigate the same outcomes, but differentiate portfolio companies based on whether impact investors were present in the first round or only in later rounds. The results strongly mirror the analysis based on impact-only vs. impact-present companies. Relative to traditional-only companies, first-round impact companies lean strongly towards social impact, while later-round impact companies by and large do not.

Thus far, we have established that impact-only deals appear more social impact-oriented than impact-present deals. To what extent do these patterns reflect across-investor differences in the degree to which they prioritize social objectives? Or do these patterns reflect within-investor variation, whereby the same investors sometimes prioritize social objectives and sometimes prioritize financial objectives? To shed light on this, we directly investigate investor-level heterogeneity in Panel B of Table III. Panel B1 compares traditional investors to concessionary impact investors and non-concessionary impact investors using the following specification:

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$$y_i = \alpha + \beta_1 ConcessionaryImpact_i + \beta_2 NonConcessionaryImpact_i + \varepsilon_i \qquad (2)$$

where y_i is the outcome of interest, $ConcessionaryImpact_i$ is a dummy variable taking a value of 1 if investor i is a concessionary impact investor, $NonConcessionaryImpact_i$ is a dummy taking a value of 1 if investor i is a non concessionary impact investor, and the omitted group is traditional investors.

The patterns for concessionary impact investors closely parallel those of the impact-only companies. Concessionary investors focus on significantly poorer areas, both within the U.S. and globally, regions with significantly less population density, and those with significantly higher deaths from drugs and alcohol. On average, the areas they invest in have significantly higher high school graduation rates and lower college graduation rates (though the latter pattern is not statistically significant).

The differences between non-concessionary impact investors and traditional investors are much more muted. Within the U.S., there is no statistically significant difference between the incomes of counties that receive investments from traditional investors versus non-concessionary impact investors. Globally, non-concessionary impact investors do invest in statistically significantly poorer countries. The only other significant difference is that non-concessionary impact investors do invest in U.S. areas with higher deaths from drugs and alcohol, though to a significantly lesser extent than concessionary impact investors.

Appendix Table A.II Panel B1 investigates investor heterogeneity based on nonprofit status and reaches similar conclusions. Nonprofit impact investors invest in poorer and less densely populated areas, and areas with more deaths from drugs and alcohol. In contrast, the differences between for-profit impact investors and traditional investors are more muted.

The other dimension of impact investor heterogeneity that we focus on is the extent

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to which an impact investor co-invests with traditional investors. Recall, a priori theory suggests that the investors who actively seek out deals that would not be attractive to traditional investors may be more oriented towards creating an impact than those who compete with and regularly co-invest with traditional investors (e.g. Oehmke and Opp 2020; Green and Roth 2021). Our evidence suggests that this theory is borne out in the data.

Table III Panel B2 replicates specification (2), replacing $ConcessionaryImpact_i$ with $AdditionalImpact_i$, which is a dummy equaling 1 if investor i is an additional impact investor. The results are qualitatively similar for additional impact investors and concessionary impact investors, with additional impact investors within the U.S. placing even more emphasis on poorer counties and those with high rates of death from drugs and alcohol. Appendix Table A.II Panel B3 presents similar conclusions utilizing our alternative measure of investor additionality – the fraction of their deals that do not include a traditional investor.

Together, these results demonstrate that there is important heterogeneity in the interests and strategies of impact investors – a lesson that will be reinforced in each of our subsequent analyses.

4.2 Do Impact Investors Help Create New Industries?

Impact investors often argue that part of their strategy is to support companies in markets and industries that have not yet proven sufficiently profitable to attract traditional investors. For instance, many early debt and equity impact investing funds were created to finance the newly emerging sector of micro-finance, which made small loans to poor women in developing countries. The early support of impact investors might allow companies and industries to develop the business models with demonstrated profitability necessary to attract traditional investors. In this section, we investigate this claim by

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measuring whether impact investors, relative to traditional investors, are more likely to support companies in nascent industries, using the 215 PitchBook-identified sectors.

Table IV presents results from specifications (1) and (2), focusing on whether investors support *pioneer* companies. In Column 1, a company is defined to be a pioneer if it is among the first ten companies within its PitchBook industry to be financed in our data. In Column 2, a company is defined to be a pioneer if it is within the first twenty companies to be financed within its industry; in Column 3, a company is a pioneer if it is within the first thirty companies; and in Column 4, a company is a pioneer if it is within the first forty companies.

Looking at the company level (Panel A), we see that relative to traditional-only companies, impact-only companies are about 37-50% more likely to be pioneers, when a pioneer is defined to be within the first thirty or forty companies in an industry. There are no significant differences between impact-only and traditional-only companies when pioneer is defined more stringently as the first ten and twenty companies in an industry. Relative to traditional-only companies, impact-present companies are 16% more likely to be pioneers when a pioneer is defined to be in the first forty companies within its industry. Perhaps surprisingly, at the investor level (Panel B), we find that it is the non-concessionary and non-additional impact investors who are more likely to support pioneers than are traditional investors (Columns 3 and 4).[13]

Impact investors most commonly support pioneer companies in the clean energy sector. Utilizing the definition that a pioneer company raises one of the first forty rounds of financing within its industry, the five PitchBook industries in which impact investors are most likely to support pioneers are Alternative Energy Equipment, Forestry Development/Harvesting, Horticulture, Other Utilities (largely composed of clean energy compa-

[13]We find suggestive evidence that additional impact investors are less likely to support pioneers, both relative to non-additional investors and to traditional investors, when pioneer companies are defined to be within the first ten in their industry. In Appendix Table A.III, we do not find any significant relationship between the likelihood that an impact investor supports a pioneer and the fraction of their deals that are co-invested with traditional investors.

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nies), and Plant Textiles. Within each of these industries, impact investors are present in between 20% and 30% of the pioneering deals. While some of these industries represent ancient practices – e.g. horticulture and forestry – equity-based venture financing within these industries is a relatively recent phenomenon. For instance the first impact investments in horticulture and forestry recorded in PitchBook occurred in 2005[14]

4.3 Do Impact Investors Provide Catalytic Capital?

A related claim to that in the previous section is that impact investors provide catalytic capital for their portfolio companies. Namely, they invest in companies that have not yet demonstrated profitability and help them reach the critical milestones necessary to attract traditional investors. In this section, we provide support for this claim; we demonstrate a general tendency of impact investors to "step aside" as their portfolio companies develop. We also document important heterogeneity across company and investor types.

In Table V Panel A, we present estimates using the following specification:

$$y_{i,r} = \alpha + \beta_1 RoundNumber_{i,r} + \beta_2 RoundNumber_{i,r} * ImpactOnly_i + \delta_i + \varepsilon_{i,r} \qquad (3)$$

The level of observation is company × investment round. The sample is restricted to companies that have received at least one impact investment. The round number is normalized so that round is the first investment round in which an impact investor was

[14]For concreteness, the following are examples of impact-backed pioneer companies in each of the aforementioned industries. **Alternative Energy:** Capstone Green Energy was incorporated in 1988 as a California based gas turbine manufacturer that specializes in microturbine power along with heating and cooling cogeneration systems. **Forestry:** Triton Timber was founded in 2000 in Victoria, Canada to develop technology to responsibly harvest the flooded and abandoned forests in reservoirs around the world. **Horticulture:** Nalweyo Seed Company Ltd (NASECO) was formed in 1996 and breeds, produces and sells a variety of hybrid field crops and vegetables to local and international non-governmental organizations, distributors, and smallholder farmers in Uganda and beyond. **Other Utilities:** Cogelec Energy was created in 2014 to provide energy for productive use and act as a catalyst for economic advancement in communities across Africa. **Plant Textiles**: AlgaLife, a Berlin and Israel-based start-up established in 2016, seeks to develop algae-based materials for the fashion and textile industries (now spun out from its parent as Algae Apparel).

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present, and prior rounds are omitted from the sample. This allows us to study whether, once an impact investor supports a company, there is a tendency for them to step aside in subsequent rounds to make way for traditional investors. $y_{i,r}$ is the outcome of interest for company i in investment round r, $RoundNumber_{i,r}$ measures the normalized investment round, and $ImpactOnly_i$ is a dummy taking a value of 1 if company i's first impact round had only impact investors. Finally, δ_i is a company fixed effect, enabling us to investigate within-company trends in investor composition over time.

In Panel B, we estimate the analogous specification:

$$y_{i,r} = \alpha + \beta_1 RoundNumber_{i,r} + \beta_2 RoundNumber_{i,r} * ConcessionaryImpact_i + \delta_i + \varepsilon_{i,r} \quad (4)$$

where $ConcessionaryImpact_i$ is a dummy taking a value of 1 if company i's first impact round included a concessionary impact investor. And in Panel C, we replicate this analysis replacing $ConcessionaryImpact_i$ with $AdditionalImpact_i$, defined analogously.

Our outcomes in this analysis reflect the extent to which, over subsequent rounds of financing, the companies initially supported by impact investors reduce their reliance on impact capital and increase their reliance on non-impact capital. We investigate the trend in the number of impact investors (Column 1), the number of non-impact investors (Column 2), the total impact investment dollars (Column 3), and the total non-impact investment dollars (Column 4).[15]

Beginning with Panel A row 1, we find moderate evidence of catalytic investments among the population of companies whose first impact round had both traditional and impact investors. As can be seen from Column 1, the number of impact investors declines in each subsequent round by 0.1 on average. While the number of non-impact investors

[15]We do not observe the investor-specific financing in each round; we only observe the total financing by all investors in that round. We, therefore, divide the total financing in each round by the number of investors in that round and assign that (equal) portion to each investor. We use that measure to compute the total financing by impact (column 3) and non-impact (column 4) investors.

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does not increase in each subsequent round (Column 2), these companies do attract an average of an estimated four million additional non-impact dollars in each subsequent round (Column 4) without seeing a corresponding increase in impact dollars (Column 3). We do not find evidence of stronger catalytic effects for companies whose first impact round has only impact investors. Similarly, in Panel B, we do not find evidence that concessionary impact investors exhibit a stronger tendency toward catalytic investing than non-concessionary investors.

In contrast to the concessionary case, Panel C indicates that additional impact investors are considerably more catalytic than their non-additional counterparts. Relative to companies supported by non-additional impact investors, those supported by an additional impact investor see a significantly stronger decline in the number of impact investors per round and a significantly stronger increase in the number of non-impact investors per round. Therefore, while the full population of impact investors exhibits catalytic behavior in the aggregate, the patterns are significantly stronger for additional impact investors.

In Appendix Table A.IV, we investigate the same patterns for companies that received an impact investment in their first round versus later rounds, and for companies whose first impact round had a non-profit impact investor. Non-profit impact investors exhibit more catalytic behavior than for-profit impact investors. We do not, however, find significantly more catalytic behavior for companies that received an impact investment in their first round relative to those that only received an impact investment in later rounds.

4.4 Patience and Risk Tolerance

Impact investors often assert that they provide patient or risk tolerant capital. In this section, we provide support for this claim, with evidence of significant heterogeneity across deals and types of impact investors.

Table VI presents results from specifications (1), (2), and (5) for measures of risk

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tolerance and patience. Columns 1 through 3 examine our proxy for an investment's level of risk – the probability that a company reaches a successful exit. The outcome in Column 1 is whether an investment results in initial public offering (IPO), merger, or acquisition; in Column 2, it is whether the deal results in an IPO; and in Column 3, whether it results in a merger or acquisition. Column 4 presents our proxy for investor patience: for each company that has a successful exit, the outcome variable is the time, measured in months, between the first investment in a company and its exit.

Looking at the company level in Panel A, we see that impact-only companies are 6.3 percentage points less likely to have a successful exit relative to companies that have only had traditional investors (Column 1). The success rate in the latter group is 17 percentage points, so impact-only companies are about 38% less likely to have a successful exit. Columns 2 and 3 present similar patterns when restricting attention separately to IPOs and mergers and acquisitions. Column 4 indicates that conditional on a successful exit, impact-only companies take nearly 15 more months to reach a successful exit event relative to companies with only traditional investors. The average time in the latter group is 62 months, so impact-only companies take about 24% longer to reach success.

The pattern is quite different for impact-present companies. Relative to companies with only traditional investors, these companies are 2.9 percentage points *more* likely to realize a successful exit (Column 1), representing a 16.5% increase relative to companies with only traditional investors. The effect is driven by an increase in the likelihood of mergers and acquisitions (Column 2). However, Column 4 indicates that the set of impact-present companies, conditional on reaching a successful exit, also take substantially longer than traditional-only firms: an additional 16 months (relative to 14.6 months for impact only).

In Appendix Table A.V, we find some difference in the degree of risk taken by impact investors who support a company in is first round versus later. Companies that received an impact investment in their first round are about one percentage point less likely to

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reach IPO than companies who received an impact investment in a later round. However, conditional on reaching a successful exit, companies that received an impact investment in a later round have significantly longer time to success than companies that received an impact investment in their first round.

In sum, we see evidence that impact-only companies are riskier and take longer to exit than those supported by only traditional investors. We find evidence that impact-present companies are *less* risky, though they also take longer to succeed. We cannot say whether these results represent selection or treatment effects. However, either way the results indicate that impact investors accept longer time horizons, and that some – but not all – impact investors accept lower probabilities of success.

We now turn to the investor-level results in Panel B. Surprisingly, we do not find evidence that concessionary investors support riskier companies or companies with longer time horizons to successful exit relative to non-concessionary impact investors. Across the board, there are no statistically significant differences between the outcomes of companies supported by concessionary and non-concessionary impact investors, although both types of investors support companies with lower probability of success and longer time horizons to success. In Appendix Table A.V, we find quite similar patterns for non-profit and for-profit impact investors.

More significant heterogeneity across impact investors emerges when looking at our measures of the degree to which impact investors co-invest with traditional investors. In Panel B2, we see that companies financed by additional impact investors have a 10.8 percentage point lower probability of IPO, merger, or acquisition, representing a 54% reduction in the likelihood of successful exit relative to companies supported by traditional investors. Relative to non-additional impact investors, additional impact investors are statistically significantly less likely to reach an IPO. Though conditional on an investment realizing a liquidation event, we cannot reject that both types of impact investors wait the same number of months on average.

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To what extent are the lower success rates of impact investors a result of them searching for deals in more difficult industries, as opposed to being a consequence of them realizing less financial success than traditional investors controlling for the success rate of an industry? To differentiate amongst these stories, we compute the average success rate and time to success for portfolio companies in each of the 215 industries classified by PitchBook in each year of our data.

In Appendix Table A.V, we re-estimate specifications (1) and (2), but instead of using as outcome variables the realization of an exit or time to success, we use the *leave-one-out average* outcomes for each portfolio company's industry $\times$ year of investment. This approach captures differences in the likelihood of and time to success for the industry $\times$ years of impact versus traditional portfolio companies. If impact investors are merely selecting companies in industries and time periods with lower probability of success and longer time to success, the results of this estimation should look similar to those in Table VI.

Viewing Appendix Table A.V, we see that at the portfolio company level, about a quarter of the difference in impact investors' probability of success, and none of the difference in their time to success, appears to come from their industry selection. The remainder comes from differences in probability of and time to success, controlling for portfolio company industry $\times$ year of investment averages. At the investor level, even less of the variation in probability of exit and time to exit can be explained by the industry composition of their portfolio companies. In sum, most of difference in success rates and in time to success comes from within industry $\times$ year of investment variation, and cannot be explained by the composition of industries for impact portfolio companies.

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5 Discussion

This paper analyzes the first comprehensive data-set that matches impact investors to their portfolio companies. In doing so, we shed light on several long-standing questions regarding the behavior of impact investors and their role in the venture-finance landscape.

First, we measure to what extent impact investors facilitate investments in new enterprises that could not have attracted traditional venture financing, as opposed to merely supporting high-impact companies that could anyways have attracted traditional capital? In other words, to what extent are impact investors *additional*?

To address this question we exploit our co-investment network. By revealed preference, any impact investment that includes a traditional venture investor co-investing in the same deal must have been able to attract traditional investors on its financial merits alone. Perhaps surprisingly, we find that 60% of all impact investments include at least one traditional venture co-investor, suggesting that the majority of impact investments are not additional. Nevertheless, this finding masks a considerable degree of heterogeneity amongst impact investors. Utilizing a network algorithm designed to partition our universe of investors into two sets with as few co-investments across sets as possible, we estimate that about 12% of all impact investors are additional, rarely co-investing with traditional investors (and rarely co-investing with impact investors who co-invest with traditional investors, and so on).

We then analyze the portfolio allocation of impact investors, with an eye towards some of the key theories of change espoused by impact investors. We find that impact investors disproportionately invest in disadvantaged areas within the U.S. and across the world. We find support for the claim that impact investors build new industries and markets. Relative to traditional investors, impact investors are more likely to be among the first few dozen investors in a new industry. At the portfolio company level, we find evidence of "catalytic investing," whereby impact investors encourage participation of

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traditional investors and step aside in subsequent investment rounds. We find evidence that impact investors accept a greater level of risk and investments that take longer to reach successful exits, corroborating the story that impact investors provide patient and risk tolerant capital.

Our findings paint a nuanced picture of the impact investing landscape. The data provide some support for most of the prevailing positive narratives about impact investors, but with significant heterogeneity across investors. Most of these trends are strongest for the impact investors we identify as additional, though we find some evidence of heterogeneity along the nonprofit/for-profit and the concessionary/market return seeking dimensions, with patterns being stronger for the former categories relative to the latter. With the notable exception of being early investors within an industry, most of the aforementioned patterns do not hold for impact investors that are non-concessionary, for-profit, and non-additional – the majority of impact investors.

Ultimately, the differences between impact and traditional investors, and across impact investors, raise the question of how best to quantify and aggregate the social trade-offs associated with these investors. To what extent do the net societal benefits from impact investors' portfolio companies offset the lower financial returns to their limited partners documented in the earlier literature? How do the costs and benefits differ across different classes of impact groups? We hope that future research will help quantify these trade-offs.

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6 Main Tables and Figures

Table I: Summary Statistics by Investor Type

	Traditional Investor vs. Impact Investors		Impact Investors Only: Additional Impact vs. Non-Additional Impact		Impact Investors Only: Concessionary Impact vs. Non-Concessionary Impact	
	(1) Traditional Investor Mean	(2) Impact Investor Difference	(3) Non-Additional Investor Mean	(4) Additional Investor Difference	(5) Non-Concessionary Investor Mean	(6) Concessionary Investor Difference
Panel A: Portfolio Profile						
Number of Companies	24.436	1.204	28.605	-25.480***	26.934	-7.413
		(3.662)		(4.167)		(6.187)
Number of Deals	30.610	1.590	36.012	-32.762***	34.115	-10.969
		(4.114)		(4.642)		(7.084)
Average Investment Size	8.703	-3.803***	4.716	2.187	5.113	-1.264
		(0.758)		(3.929)		(1.312)
Years in Operation	9.901	-0.068	9.913	-0.913	9.798	0.233
		(0.312)		(1.344)		(0.862)
Panel B: Global Regions						
US	0.451	-0.010	0.455	-0.121	0.444	-0.021
		(0.026)		(0.085)		(0.068)
Canada	0.035	-0.017***	0.020	-0.020***	0.021	-0.020***
		(0.005)		(0.006)		(0.006)
East Asia	0.103	-0.089***	0.016	-0.016***	0.013	0.009
		(0.006)		(0.006)		(0.013)
North, South, and West Europe	0.184	-0.101***	0.084	-0.010	0.083	0.003
		(0.013)		(0.046)		(0.037)
Oceania	0.015	-0.003	0.010	0.021	0.010	0.014
		(0.006)		(0.031)		(0.022)
UK	0.063	-0.016	0.048	-0.017	0.042	0.026
		(0.010)		(0.033)		(0.034)
Eastern Europe, Russia, and Central Asia	0.023	-0.016***	0.008	-0.008***	0.006	0.005
		(0.002)		(0.002)		(0.008)
Latin America and Caribbean	0.021	0.064***	0.072	0.109	0.083	0.014
		(0.013)		(0.067)		(0.039)
Middle East and North Africa	0.033	-0.014***	0.022	-0.022***	0.022	-0.014*
		(0.005)		(0.005)		(0.007)
Southeast Asia	0.021	0.013	0.028	0.050	0.034	0.001
		(0.008)		(0.046)		(0.020)
South Asia	0.033	0.066***	0.108	-0.076**	0.103	-0.025
		(0.015)		(0.035)		(0.033)
Sub-Saharan Africa	0.013	0.126***	0.126	0.112	0.138	0.007
		(0.018)		(0.076)		(0.047)
Number of Investors	20,231	275	243	32	227	48

Specification: Observations are venture capital or growth equity investors with an investment by May 2021. In the odd columns, we show the mean for the group indicated in the column header. The even columns show the coefficient and standard error of the difference between the preceding odd column and the group indicated in the header of the even column. In column 1, we present the mean of the outcome shown in the rows for Traditional Investors. In column 2 is the difference between Traditional and all Impact Investors for the outcome in the corresponding row. In columns 3-6, the sample is limited to only Impact Investors. In columns 3 and 4 we compare the outcomes of Non-Additional and Additional Impact Investors. In columns 5 and 6, we compare the outcomes of Non-Concessionary and Concessionary Impact Investors. Robust standard errors in parentheses.
Outcomes: Outcomes are described in the rows of the table. In Panel A, we present summary statistics of the investors' portfolios. In Panel B, we show what fraction of an investor's portfolio companies are headquartered across the global regions listed in the panel. In Panel C, we show the fraction of the investor's portfolio companies that are classified in the industry sectors listed in the panel. The final row of the table shows the number of investors that fall in each of the categories indicated in the column header.

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Table I: Summary Statistics by Investor Type

	Traditional Investor vs. Impact Investors		Impact Investors Only: Additional Impact vs. Non-Additional Impact		Impact Investors Only: Concessionary Impact vs. Non-Concessionary Impact	
	(1) Traditional Investor Mean	(2) Impact Investor Difference	(3) Non-Additional Investor Mean	(4) Additional Investor Difference	(5) Non-Concessionary Investor Mean	(6) Concessionary Investor Difference
Panel C: Industry Sectors						
Communication Services	0.056	-0.025***	0.029	0.016	0.031	-0.001
		(0.005)		(0.032)		(0.010)
Consumer Discretionary	0.097	-0.015*	0.083	-0.005	0.084	-0.010
		(0.008)		(0.036)		(0.016)
Consumer Staples	0.046	0.054***	0.089	0.087	0.096	0.018
		(0.011)		(0.057)		(0.030)
Energy	0.015	0.023***	0.042	-0.032***	0.039	-0.005
		(0.006)		(0.010)		(0.015)
Financials	0.022	0.050***	0.075	-0.028	0.065	0.038
		(0.011)		(0.036)		(0.035)
Health Care	0.226	-0.090***	0.137	-0.007	0.144	-0.041
		(0.012)		(0.054)		(0.028)
Industrials	0.188	0.026**	0.207	0.069	0.214	0.004
		(0.012)		(0.064)		(0.035)
Information Technology	0.297	-0.093***	0.211	-0.061	0.209	-0.026
		(0.012)		(0.051)		(0.032)
Materials	0.036	0.019***	0.053	0.020	0.055	0.004
		(0.007)		(0.044)		(0.023)
Real Estate	0.012	0.042***	0.059	-0.043***	0.051	0.017
		(0.008)		(0.015)		(0.019)
Utilities	0.003	0.010***	0.014	-0.014***	0.012	0.002
		(0.003)		(0.003)		(0.007)
Number of Investors	20,231	275	243	32	227	48

Specification: Observations are venture capital or growth equity investors with an investment by May 2021. In the odd columns, we show the mean for the group indicated in the column header. The even columns show the coefficient and standard error of the difference between the preceding odd column and the group indicated in the header of the even column. In column 1, we present the mean of the outcome shown in the rows for Traditional Investors. In column 2 is the difference between Traditional and all Impact Investors for the outcome in the corresponding row. In columns 3-6, the sample is limited to only Impact Investors. In columns 3 and 4 we compare the outcomes of Non-Additional and Additional Impact Investors. In columns 5 and 6, we compare the outcomes of Non-Concessionary and Concessionary Impact Investors. Robust standard errors in parentheses.

Outcomes: Outcomes are described in the rows of the table. In Panel A, we present summary statistics of the investors' portfolios. In Panel B, we show what fraction of an investor's portfolio companies are headquartered across the global regions listed in the panel. In Panel C, we show the fraction of the investor's portfolio companies that are classified in the industry sectors listed in the panel. The final row of the table shows the number of investors that fall in each of the categories indicated in the column header.

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Table II: Percentage of Rounds that are Co-invested With a Traditional Investor

	Only Traditional Investors	At Least One Impact Investor	At Least One Additional Investor	At Least One Concessionary Investor
Entire Sample	31.3%	60.3%	14.4%	66.9%
VC Rounds	33.0%	63.6%	22.2%	67.3%
PE Growth Rounds	11.7%	26.2%	10.3%	27.1%
2000-2005	56.7%	65.9%	0.0%	50.0%
2005-2010	45.1%	68.5%	14.3%	46.3%
2010-2015	33.4%	56.1%	14.3%	63.7%
2015-2020	31.2%	63.6%	16.7%	70.1%
2020-2022	41.5%	78.0%	10.0%	91.4%
1st Round	24.2%	45.5%	11.6%	52.0%
Later Round	49.3%	78.0%	31.3%	79.8%
Total Number	355,835	8,121	104	1,095

In this table we present the percent of financing rounds that are co-invested with a traditional investor. In column 1, we limit the sample to financing rounds that only have traditional investors (and so the numbers reflect the percentage of rounds with more than 1 traditional investor). In column 2, the sample comprises all financing rounds with at least one impact investor. In column 3, the sample comprises all financing rounds with at least one additional investor (as defined in Section 3). In column 4, the sample comprises all financing rounds with at least one concessionary investor.
At the bottom of the table are the total rounds in each of the relevant samples. Row 1 presents the co-investment percentages for the full sample reflected in the column headers. Rows 2 and 3 present the co-investment percentages for the samples further restricted to either VC or PE Growth. Rows 4-8 present the co-investment percentages for the samples further restricted by financing year. And rows 9 and 10 present the co-investment statistics for the sample further restricted by whether the round is the first round in which a traditional/impact/additional impact/concessionary impact investor was present, or whether it is a subsequent round.

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Table III: What are the Socioeconomic Predictors of Impact Investments?

	United States - Based Companies						All Companies
	(1) Median Household Income USD	(2) Population Density (Person/sq.mi)	(3) Black and Hispanic Population Percent	(4) Deaths from Drugs or Alcohol Percent	(5) No High School Diploma Percent	(6) Bachelor or Graduate Degree Percent	(7) GDP per Capita USD
Panel A: Company Level							
β_1: Impact Only	-3,981.6381***	-3,382.4713***	-0.0079	0.0004***	-0.0091***	-0.0079*	-9,982.2536***
	(634.7739)	(512.8671)	(0.0063)	(0.0001)	(0.0019)	(0.0042)	(516.9091)
β_2: Impact Present	-128.3151	945.2001*	-0.0097**	-0.0000	-0.0007	0.0193***	-3.5656
	(487.0676)	(503.8883)	(0.0040)	(0.0000)	(0.0012)	(0.0030)	(414.0426)
P-value from F-Test β_1=β_2	0.000	0.000	0.811	0.000	0.000	0.000	0.000
Mean for Traditional Only	70003.3132	9514.3365	0.3012	0.0069	0.1399	0.4816	40752.1598
	[19926.9880]	[19310.0247]	[0.1565]	[0.0016]	[0.0509]	[0.1028]	[20072.2357]
N Companies	54943	52337	54993	50303	54943	42237	148099
Panel B: Investor Level							
Panel B1: Concessionary Impact Investor							
θ_{11}: Concessionary Impact Investor	-5,422.5023*	-5,686.1924***	-0.0169	0.0008***	-0.0108*	-0.0145	-9,796.0600***
	(3,089.4211)	(1,219.1915)	(0.0281)	(0.0003)	(0.0063)	(0.0128)	(3,135.7997)
θ_{21}: Non-Concessionary Impact Investor	-1,760.4762	-1,259.6722	0.0020	0.0003***	-0.0034	0.0006	-7,369.7329***
	(1,254.3088)	(1,263.3097)	(0.0110)	(0.0001)	(0.0034)	(0.0062)	(1,493.0349)
P-value from F-Test θ_{11}=θ_{21}	0.271	0.011	0.531	0.075	0.301	0.287	0.484
Panel B2: Additional Impact Investor							
θ_{12}: Additional Impact Investor	-12,461.2705*	-2,304.3376	-0.0081	0.0016***	0.0202	-0.0511	-9,838.3239*
	(6,364.0785)	(6,804.6415)	(0.0786)	(0.0006)	(0.0338)	(0.0483)	(5,103.4597)
θ_{22}: Non-Additional Impact Investor	-1,715.8855	-1,954.8367*	-0.0006	0.0003***	-0.0061**	0.0011	-7,567.3483***
	(1,160.5005)	(1,080.1491)	(0.0098)	(0.0001)	(0.0024)	(0.0053)	(1,390.1585)
P-value from F-Test θ_{21}=θ_{22}	0.097	0.960	0.924	0.026	0.438	0.282	0.668
Mean for Traditional	75732.1342	11334.0732	0.3051	0.0068	0.1369	0.4963	42711.3581
	[15876.3045]	[15152.6170]	[0.1021]	[0.0011]	[0.0338]	[0.0748]	[17415.1033]
N Investors	13,424	13,350	13,425	12,874	13,424	12,527	19,912

Specification: Panel A of this table estimates Specification 1 in the paper. Observations are companies funded by venture capital or growth equity investors by May 2021. Impact Only indicates a company that has ever had an impact investor-only round. Impact Present indicates a company that has at least one impact investor, but has no impact investor-only rounds. The comparison group are companies that have never had an impact investor. Robust standard errors in parentheses. Panel B of this table estimates Specification 2 in the paper. Observations are venture capital or growth equity investors with an investment by May 2021. In Panel B1, Concessionary Impact indicates that the impact investor is concessionary and Non-Concessionary Impact captures all other impact investors. In Panel B2, Additional Impact Investor indicates that the impact investor is additional as defined in Section 3 and Non-Additional Impact captures all other impact investors. The comparison group in Panel B are traditional investors. Robust standard errors in parentheses.

Outcomes: The outcomes in columns 1-6 are calculated at the US county level and hence only US companies are considered. In column 7, the outcome is at the country level. In Panel A, outcomes are assigned to companies based on the headquarters of the company as specified in the first round of investment. Observation numbers vary across columns due to missing data on location of company headquarters or due to missing outcome data. In Panel B, outcomes are averaged for each investor based on each company-investment round.

Data sources: Household income (United States Census Bureau 2011), Population density (United States Census Bureau 2021), Education attainment, degree, Black-hispanic population (United States Census Bureau 2020), Causes of drug and alcohol deaths (National Center for Health Statistics 2020), GDP per capita (constant 2015 US$) (World Bank 2020)

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Table IV: Do Impact Investors Help Create New Industries?

	(1) Pioneer (First 10)	(2) Pioneer (First 20)	(3) Pioneer (First 30)	(4) Pioneer (First 40)
Panel A: Company Level				
β_1: Impact Only	0.002	0.005	0.014***	0.024***
	(0.003)	(0.004)	(0.005)	(0.005)
β_2: Impact Present	-0.003	0.002	0.006	0.008*
	(0.002)	(0.003)	(0.004)	(0.005)
P-value from F-Test β_1=β_2	0.123	0.671	0.198	0.021
Mean for Traditional Only	0.013	0.026	0.038	0.050
	[0.115]	[0.160]	[0.192]	[0.218]
N Companies	156043	156043	156043	156043
Panel B: Investor Level				
Panel B1: Concessionary Impact Investor				
θ_{11}: Concessionary Impact Investor	-0.007	0.004	0.006	0.019
	(0.004)	(0.010)	(0.015)	(0.017)
θ_{21}: Non-Concessionary Impact Investor	0.003	0.005	0.019**	0.022**
	(0.004)	(0.006)	(0.009)	(0.010)
P-value from F-Test θ_{11}=θ_{21}	0.090	0.927	0.476	0.849
Panel B2: Additional Impact Investor				
θ_{12}: Additional Impact Investor	-0.014***	-0.009	0.030	0.017
	(0.001)	(0.021)	(0.047)	(0.047)
θ_{22}: Non-Additional Impact Investor	0.003	0.006	0.016**	0.022**
	(0.004)	(0.005)	(0.008)	(0.009)
P-value from F-Test θ_{21}=θ_{22}	0.000	0.487	0.759	0.905
Mean for Traditional	0.014	0.031	0.048	0.064
	[0.072]	[0.108]	[0.137]	[0.159]
N Investors	20,057	20,057	20,057	20,057

Specification: Panel A of this table estimates Specification 1 in the paper. Observations are companies funded by venture capital or growth equity investors by May 2021. Impact Only indicates a company that has ever had an impact investor-only round. Impact Present indicates a company that has at least one impact investor, but has no impact investor-only rounds. The comparison group are companies that have never had an impact investor. Robust standard errors in parentheses. Panel B of this table estimates Specification 2 in the paper. Observations are venture capital or growth equity investors with an investment by May 2021. In Panel B1, Concessionary Impact indicates that the impact investor is concessionary and Non-Concessionary Impact captures all other impact investors. In Panel B2, Additional Impact Investor indicates that the impact investor is additional as defined in Section 3 and Non-Additional Impact captures all other impact investors. The comparison group in Panel B are traditional investors. Robust standard errors in parentheses.

Outcomes: The outcomes in columns 1-4 are indicators for whether the company is among the first 10, 20, 30, or 40 companies, respectively, within its industry to have a financing round in our dataset. We use the first deal date of the company to create the indicator. If the first deal date is missing, we omit the company from the analysis. We use Pitchbook's 215 industry classification of the companies in our sample. In Panel B, the outcome variable is the fraction of the investor's portfolio companies that fall in the first 10, 20, 30, or 40 companies with a financing round in our dataset.

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Table V: Do Impact Investors Catalyze Non-Impact Investments?

	(1) Number of Impact Investors	(2) Number of Non-Impact Investors	(3) Impact USD in Millions	(4) Non-Impact Total USD in Millions
Panel A: Impact Only				
β_{11}: Round	-0.097***	-0.038	-0.232	4.081***
	(0.010)	(0.056)	(0.193)	(0.929)
β_{21}: Round*Impact Only	0.020*	0.530***	0.121	-3.381***
	(0.011)	(0.056)	(0.259)	(0.790)
Panel B: Has Concessionary Investor				
β_{12}: Round	-0.086***	0.223***	-0.191	2.812***
	(0.010)	(0.044)	(0.197)	(0.762)
β_{22}: Round*Concessionary Impact	-0.023	-0.111	0.089	-0.464
	(0.016)	(0.080)	(0.162)	(1.189)
Panel C: Has Additional Investor				
β_{13}: Round	-0.088***	0.217***	-0.185	2.780***
	(0.010)	(0.044)	(0.190)	(0.751)
β_{23}: Round*Additional Impact	-0.235*	0.560***	1.672	-1.831
	(0.138)	(0.215)	(1.107)	(2.077)
Mean for Outcome (Initial Impact Round)	0.76	2.59	2.72	12.07
	[0.58]	[3.47]	[20.59]	[43.30]
N Observations	7,678	7,678	5,349	5,349
N Companies	2,576	2,576	1,883	1,883
Deal Year Fixed Effects	Yes	Yes	Yes	Yes
Company Fixed Effects	Yes	Yes	Yes	Yes

Specification: Panel A of this table estimates Specification 3 in the paper. Observations are all financing rounds by venture capital or growth equity investors by May 2021 in which there was at least one impact investor among the current or former investors. The round number is normalized so that round 1 is the first round in which an impact investor is present. Rounds prior to the first impact investment are omitted from the analysis. Impact Only is an indicator for a company whose first impact round had only impact investors. Panels B and C of this table estimate Specification 4 in the paper. Observations are all financing rounds by venture capital or growth equity investors by May 2021 in which there was at least one impact investor among the current or former investors. In Panel B, Concessionary Impact is a company-level indicator that the first impact round had a Concessionary Impact Investor. In Panel C, Additional Impact Investor is a company-level indicator that the first impact round had an Additional Impact Investor as defined in Section 3. All regressions include company and year of investment round fixed effects. Standard errors clustered at the company level are in parentheses.
Outcomes: The outcome in column 1 is the number of impact investors in the round. The outcome in column 2 is the number of non-impact investors in the round. This includes the number of traditional investors plus investors that are not classified as either traditional or impact. We do not observe the investor-specific financing in each round; we only observe the total financing by all investors in that round. We, therefore, divide the total financing in each round by the number of investors in that round and assign that (equal) portion to each investor. We use that measure to compute the total financing by impact (column 3) and non-impact (column 4) investors. The number of observations fall in columns 3 and 4 due to missing data on investment size.

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Table VI: Are Impact Investors More Patient and Risk Tolerant?

	(1) IPO, Merger, or Acquisition	(2) Merger or Acquisition	(3) IPO	(4) Months Btwn First Deal and Exit
Panel A: Company Level				
β_1: Impact Only	-0.063***	-0.044***	-0.019***	14.604***
	(0.006)	(0.005)	(0.002)	(3.462)
β_2: Impact Present	0.029***	0.033***	-0.004	16.332***
	(0.007)	(0.007)	(0.003)	(2.141)
P-value from F-Test $\beta_1 = \beta_2$	0.000	0.000	0.000	0.669
Mean for Traditional Only	0.165	0.133	0.032	62.564
	[0.371]	[0.340]	[0.175]	[45.670]
N Companies	210708	210708	210708	24416
Panel B: Investor Level				
Panel B1: Concessionary Impact Investor				
θ_{11}: Concessionary Impact Investor	-0.056*	-0.039	-0.016	19.051**
	(0.032)	(0.028)	(0.014)	(8.901)
θ_{21}: Non-Concessionary Impact Investor	-0.045***	-0.021*	-0.024***	17.749***
	(0.013)	(0.012)	(0.003)	(2.991)
P-value from F-Test $\theta_{11} = \theta_{21}$	0.763	0.550	0.601	0.890
Panel B2: Additional Impact Investor				
θ_{12}: Additional Impact Investor	-0.108**	-0.060	-0.048***	24.242*
	(0.045)	(0.045)	(0.001)	(13.108)
θ_{22}: Non-Additional Impact Investor	-0.039***	-0.020*	-0.019***	17.834***
	(0.012)	(0.011)	(0.004)	(2.935)
P-value from F-Test $\theta_{21} = \theta_{22}$	0.140	0.381	0.000	0.633
Mean for Traditional	0.201	0.153	0.048	69.803
	[0.243]	[0.202]	[0.120]	[34.423]
N Investors	20,506	20,506	20,506	12,041

Specification: Panel A of this table estimates Specification 1 in the paper. Observations are companies funded by venture capital or growth equity investors by May 2021. Impact Only indicates a company that has ever had an impact investor-only round. Impact Present indicates a company that has at least one impact investor, but has no impact investor-only rounds. Robust standard errors in parentheses. Panel B of this table estimates Specification 2 in the paper. Observations are venture capital or growth equity investors with an investment by May 2021. In Panel B1, Concessionary Impact indicates that the impact investor is concessionary and Non-Concessionary Impact captures all other impact investors. In Panel B2, Additional Impact Investor indicates that the impact investor is additional as defined in Section 3 and Non-Additional Impact captures all other impact investors. The comparison group in Panel B are traditional investors. Robust standard errors in parentheses.

Outcomes: The outcome in column 1 is whether the company had an IPO, a merger, or an acquisition. It is the union of the outcomes in columns 2 and 3. The outcome in column 4 is the number of months between the date of the first deal and the date of an exit (IPO, acquisition, or merger). The sample in column 4 is limited to companies that achieve an exit and for which the first investment date and the exit date are not missing. In Panel B, outcomes are averaged for each investor based on each company-investment round.

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Table VII: Do Impact Investors Select Into Tougher Industries?

	(1) IPO, Merger, or Acquisition	(2) Merger or Acquisition	(3) IPO	(4) Months Btwn First Deal and Exit
Panel A: Company Level				
β_1: Impact Only	-0.014***	-0.012***	-0.002	-3.783***
	(0.003)	(0.003)	(0.002)	(1.425)
β_2: Impact Present	0.020***	0.016***	0.009***	1.119
	(0.004)	(0.003)	(0.002)	(0.984)
P-value from F-Test $\beta_1 = \beta_2$	0.000	0.000	0.000	0.004
Mean for Traditional Only	0.252	0.206	0.053	30.074
	[0.206]	[0.169]	[0.093]	[19.760]
N Companies	187347	187347	187347	24340
Panel B: Investor Level				
Panel B1: Concessionary Impact Investor				
θ_{11}: Concessionary Impact Investor	-0.001	-0.009	0.006	1.870
	(0.021)	(0.016)	(0.009)	(2.554)
θ_{21}: Non-Concessionary Impact Investor	-0.001	-0.004	0.004	3.989**
	(0.010)	(0.007)	(0.004)	(1.960)
P-value from F-Test $\theta_{11} = \theta_{21}$	0.982	0.764	0.862	0.509
Panel B2: Additional Impact Investor				
θ_{12}: Additional Impact Investor	-0.025	-0.018	-0.015	-3.453
	(0.038)	(0.029)	(0.015)	(4.158)
θ_{22}: Non-Additional Impact Investor	0.002	-0.003	0.007**	3.790**
	(0.009)	(0.007)	(0.004)	(1.730)
P-value from F-Test $\theta_{21} = \theta_{22}$	0.487	0.613	0.146	0.107
Mean for Traditional	0.278	0.225	0.064	26.551
	[0.175]	[0.138]	[0.071]	[16.287]
N Investors	20,373	20,373	20,373	12,038

Specification: Observations are venture capital or growth equity investors with an investment by May 2021. In the odd columns, we show the mean for the group indicated in the column header. The even columns show the coefficient and standard error of the difference between the preceding odd column and the group indicated in the header of the even column. In column 1, we present the mean of the outcome shown in the rows for Traditional Investors. In column 2 is the difference between Traditional and all Impact Investors for the outcome in the corresponding row. In columns 3-6, the sample is limited to only Impact Investors. In columns 3 and 4 we compare the outcomes of Non-Additional and Additional Impact Investors. In columns 5 and 6, we compare the outcomes of Non-Concessionary and Concessionary Impact Investors. Robust standard errors in parentheses.

Outcomes: Outcomes are described in the rows of the table. In Panel A, we present summary statistics of the investors' portfolios. In Panel B, we show what fraction of an investor's portfolio companies are headquartered across the global regions listed in the panel. In Panel C, we show the fraction of the investor's portfolio companies that are classified in the industry sectors listed in the panel. The final row of the table shows the number of investors that fall in each of the categories indicated in the column header.

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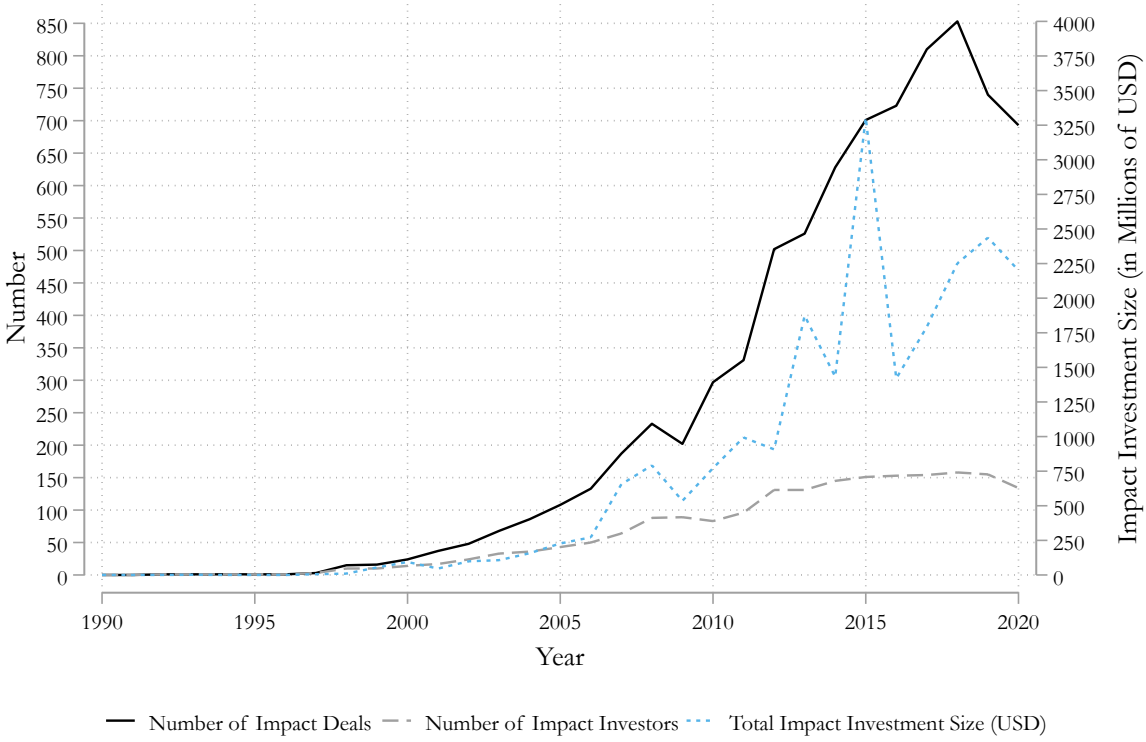
Figure 1: Number of Impact Deals, Number of Impact Investors, and Estimated Investment Amount by Year



In this figure we plot the total number of impact deals (left axis), number of unique impact investors (left axis), and total investment from across impact deals in millions of USD (right axis) in our dataset between the years 1990 and 2020. There are no impact deals in the years 1990 and 1991. We do not observe the investor-specific financing in each round; we only observe the total financing by all investors in that round. We, therefore, divide the total financing in each round by the number of investors in that round and assign that (equal) portion to each investor. The outcome in the right axis is thus the sum of this measure for all impact investors in each year.

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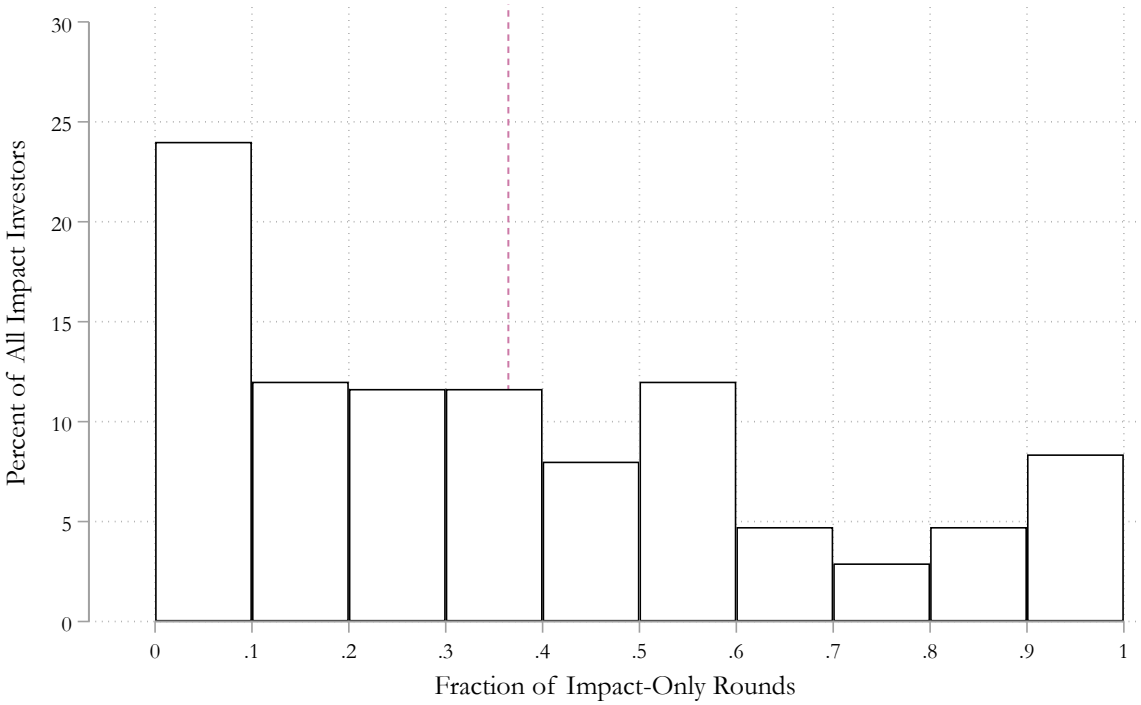
Figure 2: Distribution of the Fraction of Impact-Only Rounds in Impact Investors' Portfolios



N: 275 Impact Investors

The unit of observation in this distribution is an impact investor. There are 275 impact investors represented in the figure. For each impact investor, we compute the fraction of the rounds in which they have invested either alone or only with other impact investors. For example, nearly 25% of impact investors have invested alone or with only other impact investors between 0 and 10% of their deals. So for that 25% of investors, between 90% and 100% of their deals are co-invested with non-impact investors.

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A Appendix Tables and Figures

In this section we present variable definitions and alternative analyses to those in the main text. Table A.I presents the definitions of our key variables. Appendix Tables A.II - A.V mirror those in the main text but with alternative definitions. At the portfolio company level, we investigate differences in outcomes depending on whether a company received an impact investment in its first round of funding (*First Round Impact*), only a later round of funding (*Later Round Impact*), or never. At the investor level, we investigate differences in outcomes depending on whether an impact investor is non-profit or for-profit, and according to an alternative metric of investor *additionality*. Namely, we estimate

$$y_i = \alpha + \theta_1 Impact_i + \theta_2 Impact_i * FracImpactOnly_i + \varepsilon_i \tag{5}$$

where $FracImpactOnly$ measures the fraction of an investors' deals that include only other impact co-investors, and the rest of the variables are as defined in the main text. This is an arguably simpler measure of an investor's desire to finance deals that are not attractive to traditional venture investors, and the patterns closely mirror those from regressions using our main definition of additionality.

Finally, in Appendix Table A.5 we replicate the analysis in Table VI of the main text, but rather than the outcome variables being the realization of a successful liquidation event or time to success, we replace these with the average outcomes for each portfolio company's industry × year.

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Table A.I: Definition of Key Variables

Type of Variable	Group	Name	Definition
Independent variables	Company	Impact Only	Companies that ever had an impact only round
Independent variables	Company	Impact Present	Impact companies but never had an impact only round.
Independent variables	Investor	Fraction of Impact Only	Percent of Impact only investments for impact investors, 0 for traditional investors
Independent variables	Investor	Concessionary	Investors seek concessionary return (Based on website)
Dependent variables	Company & Investor	Median Household Income	Median number of income matched by US counties
Dependent variables	Company & Investor	Population Density	Population density matched by US counties
Dependent variables	Company & Investor	Black/Hispanic	Percent of black or hispanic people matched by US counties
Dependent variables	Company & Investor	Deaths From Drugs/Alcohol	Number of deaths from drugs or alcohol divided by population matched by US counties
Dependent variables	Company & Investor	No High School Diploma	Percent of people that don't have high school diploma matched by US counties
Dependent variables	Company & Investor	Attained Bachelor/Graduate Diploma	Percent of people that receive bachelor or graduate diploma matched by US counties
Dependent variables	Company & Investor	GDP Per Capita	GDP per capita data matched by different countries
Dependent variables	Round	Impact Investor Number	Number of impact investors in each round
Dependent variables	Round	Traditional Investor Number	Number of traditional investors in each round
Dependent variables	Round	Impact Investor/All Investor	Percent of impact investors in each round
Dependent variables	Round	Impact Investment/All Investment	Percent of impact investments in each round
Dependent variables	Round	Impact Investment Size	Size of impact investments in each round
Dependent variables	Company & Investor	IPO/Merger And Acquisition	1 for the companies that had an IPO exit or M&A exit, 0 for other companies
Dependent variables	Company & Investor	IPO	1 for the companies that had an IPO exit, 0 for other companies
Dependent variables	Company & Investor	Merger And Acquisition	1 for the companies that had a M&A exit, 0 for other companies
Dependent variables	Company & Investor	Months Between First Deal And Success	Months between the first investment and the date of successful exits (IPO/M&A)

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Table A.II: What are the Socioeconomic Predictors of Impact Investments? (Alternative Impact Investor Definition)

	United States - Based Companies						All Companies
	(1) Median Household Income USD	(2) Population Density (Person/sq.mi)	(3) Black and Hispanic Population Percent	(4) Deaths from Drugs or Alcohol Percent	(5) No High School Diploma Percent	(6) Bachelor or Graduate Degree Percent	(7) GDP per Capita USD
Panel A: Company Level							
β_1: First Round Impact	-2,284.0329***	-2,094.7390***	-0.0148***	0.0003***	-0.0041**	0.0042	-8,611.9781***
	(660.8203)	(538.4285)	(0.0056)	(0.0001)	(0.0017)	(0.0041)	(496.7586)
β_2: Later Round Impact	-921.9563*	442.4965	-0.0054	-0.0000	-0.0033**	0.0126***	-762.1203*
	(475.1949)	(510.9503)	(0.0042)	(0.0000)	(0.0013)	(0.0030)	(435.2904)
P-value from F-Test β_1=β_2	0.090	0.001	0.179	0.000	0.715	0.095	0.000
Mean for Traditional Only	70003.3132	9514.3365	0.3012	0.0069	0.1399	0.4816	40752.1598
	[19926.9880]	[19310.0247]	[0.1565]	[0.0016]	[0.0509]	[0.1028]	[20072.2357]
N Companies	54943	52337	54993	50303	54943	42237	148099
Panel B: Investor Level							
Panel B1: Non-Profit Impact Investor							
θ_{11}: Non-Profit Impact Investor	-7,535.8751**	-5,328.4044***	0.0043	0.0005**	0.0080	-0.0254	-8,835.0401***
	(2,936.5476)	(1,030.7047)	(0.0261)	(0.0002)	(0.0113)	(0.0155)	(3,062.4742)
θ_{12}: For-Profit Impact Investor	-1,024.8763	-1,140.5616	-0.0024	0.0003***	-0.0078***	0.0041	-7,694.8112***
	(1,236.3531)	(1,319.7201)	(0.0111)	(0.0001)	(0.0025)	(0.0059)	(1,501.9799)
P-value from F-Test θ_{11}=θ_{21}	0.041	0.012	0.812	0.377	0.175	0.074	0.738
Panel B2: Fraction of Impact Only							
θ_{13}: Impact Investor	753.8370	-3,809.5685***	-0.0117	0.0002	-0.0044	0.0025	-841.7940
	(1,793.8444)	(1,463.1981)	(0.0160)	(0.0001)	(0.0058)	(0.0093)	(2,105.4610)
θ_{23}: Fraction of Pure Impact	-9,707.7878**	5,715.2612	0.0334	0.0005	-0.0007	-0.0130	-19,294.4849***
	(4,323.1142)	(5,220.3997)	(0.0508)	(0.0004)	(0.0136)	(0.0243)	(4,890.0956)
Mean for Traditional	75732.1342	11334.0732	0.3051	0.0068	0.1369	0.4963	42711.3581
	[15876.3045]	[15152.6170]	[0.1021]	[0.0011]	[0.0338]	[0.0748]	[17415.1033]
N Investors	13,424	13,350	13,425	12,874	13,424	12,527	19,912

Specification: In Panel A of this table, Observations are companies funded by venture capital or growth equity investors by May 2021. First Round Impact indicates a company whose first investment round had impact investors. Later Round Impact indicates a company that had impact investors only after the first round. The comparison group comprises companies that have never had an impact investor. Robust standard errors in parentheses. In Panel B of this table, Observations are venture capital or growth equity investors with an investment by May 2021. In Panel B1, we differentiate between for-profit and non-profit impact investors. In Panel B2, Fraction Of Impact Only captures the fraction of the investor's deals that do not include traditional investors (so this variable takes a value of 0 for all traditional investors). Impact Investor is an indicator for whether the investor is an impact investor (as opposed to a traditional investor). The comparison group in Panel B comprises traditional investors. Robust standard errors in parentheses.

Outcomes: The outcomes in columns 1-6 are calculated at the US county level and hence only US companies are considered. In column 7, the outcome is at the country level. In Panel A, outcomes are assigned to companies based on the headquarters of the company as specified in the first round of investment. Observation numbers vary across columns due to missing data on location of company headquarters or due to missing outcome data. In Panel B, outcomes are averaged for each investor based on each company-investment round.

Data sources: Household income (United States Census Bureau 2011), Population density (United States Census Bureau 2021), Education attainment, degree, Black-hispanic population (United States Census Bureau 2020), Causes of drug and alcohol deaths (National Center for Health Statistics 2020), GDP per capita (constant 2015 US$) (World Bank 2020)

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Table A.III: Do Impact Investors Help Create New Industries? (Alternative Impact Investor Definition)

	(1) Pioneer (First 10)	(2) Pioneer (First 20)	(3) Pioneer (First 30)	(4) Pioneer (First 40)
Panel A: Company Level				
β_1: First Round Impact	-0.000	0.004	0.013***	0.020***
	(0.002)	(0.003)	(0.004)	(0.005)
β_2: Later Round Impact	-0.001	0.003	0.007*	0.011**
	(0.002)	(0.003)	(0.004)	(0.005)
P-value from F-Test β_1=β_2	0.791	0.917	0.377	0.160
Mean for Traditional Only	0.013	0.026	0.038	0.050
	[0.115]	[0.160]	[0.192]	[0.218]
N Companies	156043	156043	156043	156043
Panel B: Investor Level				
Panel B1: Non-Profit Impact Investor				
θ_{11}: Non-Profit Impact Investor	-0.008***	-0.002	0.023	0.035
	(0.003)	(0.009)	(0.026)	(0.026)
θ_{12}: For-Profit Impact Investor	0.003	0.006	0.016*	0.020**
	(0.004)	(0.006)	(0.008)	(0.009)
P-value from F-Test θ_{11}=θ_{21}	0.023	0.425	0.789	0.567
Panel B2: Fraction of Impact Only				
θ_{13}: Impact Investor	-0.001	-0.003	0.014	0.008
	(0.004)	(0.007)	(0.016)	(0.016)
θ_{23}: Fraction of Pure Impact	0.008	0.023	0.007	0.037
	(0.008)	(0.018)	(0.031)	(0.036)
Mean for Traditional	0.014	0.031	0.048	0.064
	[0.072]	[0.108]	[0.137]	[0.159]
N Investors	20,057	20,057	20,057	20,057

Specification: Observations are venture capital or growth equity investors with an investment by May 2021. In the odd columns, we show the mean for the group indicated in the column header. The even columns show the coefficient and standard error of the difference between the preceding odd column and the group indicated in the header of the even column. In column 1, we present the mean of the outcome shown in the rows for Traditional Investors. In column 2 is the difference between Traditional and all Impact Investors for the outcome in the corresponding row. In columns 3-6, the sample is limited to only Impact Investors. In columns 3 and 4 we compare the outcomes of Non-Additional and Additional Impact Investors. In columns 5 and 6, we compare the outcomes of Non-Concessionary and Concessionary Impact Investors. Robust standard errors in parentheses.

Outcomes: Outcomes are described in the rows of the table. In Panel A, we present summary statistics of the investors' portfolios. In Panel B, we show what fraction of an investor's portfolio companies are headquartered across the global regions listed in the panel. In Panel C, we show the fraction of the investor's portfolio companies that are classified in the industry sectors listed in the panel. The final row of the table shows the number of investors that fall in each of the categories indicated in the column header.

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Table A.IV: Do Impact Investors Catalyze Non-Impact Investments? (Alternative Impact Investor Definition)

	(1) Number of Impact Investors	(2) Number of Non-Impact Investors	(3) Impact USD in Millions	(4) Non-Impact Total USD in Millions
Panel A: Impact First Round				
β_{11}: Round	-0.092***	0.183***	-0.235	3.314***
	(0.011)	(0.049)	(0.196)	(0.910)
β_{21}: Round*First Round Impact	0.012	0.091*	0.139	-1.493*
	(0.010)	(0.053)	(0.236)	(0.904)
Panel B: Has Non-Profit Investor				
β_{12}: Round	-0.078***	0.126**	-0.284	3.598***
	(0.011)	(0.056)	(0.255)	(0.901)
β_{22}: Round*Non-Profit Impact	-0.019*	0.178***	0.260	-2.157**
	(0.011)	(0.054)	(0.193)	(0.975)
Mean for Outcome (First Round)	0.76	2.59	2.72	12.07
	[0.58]	[3.47]	[20.59]	[43.30]
N Observations	7,678	7,678	5,349	5,349
N Companies	2,576	2,576	1,883	1,883
Deal Year Fixed Effects	Yes	Yes	Yes	Yes
Company Fixed Effects	Yes	Yes	Yes	Yes

Specification: Panel A of this table estimates a specification analogous to Specification 3 in the paper. Observations are all financing rounds by venture capital or growth equity investors by May 2021 in which there was at least one impact investor among the current or former investors. The round number is normalized so that round 1 is the first round in which an impact investor is present. Rounds prior to the first impact investment are omitted from the analysis. First Round Impact indicates a company whose first investment round had impact investors. Panel B estimates a specitication analagous to Specification 4 in the paper. Observations are all financing rounds by venture capital or growth equity investors by May 2021 in which there was at least one impact investor among the current or former investors. In Panel B, Non-Profit Impact is a company-level indicator that the first impact round had a Non-Profit Impact Investor. All regressions include company and year of investment round fixed effects. Standard errors clustered at the company level are in parentheses.

Outcomes: The outcome in column 1 is the number of impact investors in the round. The outcome in column 2 is the number of non-impact investors in the round. This includes the number of traditional investors plus investors that are not classified as either traditional or impact. We do not observe the investor-specific financing in each round; we only observe the total financing by all investors in that round. We, therefore, divide the total financing in each round by the number of investors in that round and assign that (equal) portion to each investor. We use that measure to compute the total financing by impact (column 3) and non-impact (column 4) investors. The number of observations fall in columns 3 and 4 due to missing data on investment size.

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Table A.V: Are Impact Investors More Patient and Risk Tolerant? (Alternative Impact Investor Definition)

	(1) IPO, Merger, or Acquisition	(2) Merger or Acquisition	(3) IPO	(4) Months Btwn First Deal and Exit
Panel A: Company Level				
β_1: First Round Impact	-0.022***	-0.006	-0.016***	3.576
	(0.007)	(0.006)	(0.002)	(2.620)
β_2: Later Round Impact	-0.010	-0.004	-0.006**	26.681***
	(0.007)	(0.006)	(0.003)	(2.413)
P-value from F-Test β_1=β_2	0.168	0.785	0.005	0.000
Mean for Traditional Only	0.165	0.133	0.032	62.564
	[0.371]	[0.340]	[0.175]	[45.670]
N Companies	210708	210708	210708	24416
Panel B: Investor Level				
Panel B1: Non-Profit Impact Investor				
θ_{11}: Non-Profit Impact Investor	-0.027	-0.005	-0.023*	6.606
	(0.033)	(0.031)	(0.012)	(5.013)
θ_{12}: For-Profit Impact Investor	-0.050***	-0.028**	-0.023***	20.314***
	(0.013)	(0.011)	(0.004)	(3.289)
P-value from F-Test θ_{11}=θ_{21}	0.513	0.477	0.999	0.022
Panel B2: Fraction of Impact Only				
θ_{13}: Impact Investor	-0.009	0.009	-0.019***	9.833**
	(0.021)	(0.019)	(0.005)	(4.708)
θ_{23}: Fraction of Pure Impact	-0.104**	-0.092**	-0.011	24.551*
	(0.042)	(0.040)	(0.009)	(14.005)
Mean for Traditional	0.201	0.153	0.048	69.803
	[0.243]	[0.202]	[0.120]	[34.423]
N Investors	20,506	20,506	20,506	12,041

Specification: In Panel A of this table, Observations are companies funded by venture capital or growth equity investors by May 2021. First Round Impact indicates a company whose first investment round had impact investors. Later Round Impact indicates a company that had impact investors only after the first round. The comparison group comprises companies that have never had an impact investor. Robust standard errors in parentheses. In Panel B of this table, Observations are venture capital or growth equity investors with an investment by May 2021. In Panel B1, we differentiate between for-profit and non-profit impact investors. In Panel B2, Fraction Of Impact Only captures the fraction of the investor's deals that do not include traditional investors (so this variable takes a value of 0 for all traditional investors). Impact Investor is an indicator for whether the investor is an impact investor (as opposed to a traditional investor). The comparison group in Panel B comprises traditional investors. Robust standard errors in parentheses.

Outcomes: The outcome in column 1 is whether the company had an IPO, a merger, or an acquisition. It is the union of the outcomes in columns 2 and 3. The outcome in column 4 is the number of months between the date of the first deal and the date of an exit (IPO, acquisition, or merger). The sample in column 4 is limited to companies that achieve an exit and for which the first investment date and the exit date are not missing. In Panel B, outcomes are averaged for each investor based on each company-investment round.

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B Data Appendix

This Appendix provides a description of the construction of the data set and the sample selection decisions made for this paper. The impact database construction process is described in great detail in Burton et al. (2021).

B.1 Impact Investor Identification

To identify impact investors, we follow the process used to construct the Project on Impact Investing ("PII") database created by the Harvard Business School in Burton et.al. We define impact investors to be investors with the explicit dual objective of generating social good and financial returns. (We note there is not yet a single widely adopted definition of impact investing.) To compile our catalog of impact investors and portfolio companies, we draw upon information in multiple financial databases, performing extensive matching and data quality checks. We then compare our results with expert judgments, published reports, and other independent research to remove firms that do not target both social good and financial returns. An important contribution of our efforts is a recognition of the significant and material heterogeneity within the impact investing sector. We identify and analyze differences along several dimensions: legal form (profit or non-profit), co-investor network, and financial objective (targeting competitive market-rate returns or promising concessionary returns).

We identify impact investors using nine established resources on impact investing[16]: 1) ImpactBase, the global directory of impact investment funds from the Global Impact Investing Network (GIIN), 2) the Community Development Venture Capital Association

[16]The version of the databases that we used were as follows: ImpactBase as of 01/15/2018, Community Development Venture Capital Association (CDVCA) as of May 2019, Impact Assets for the period 2011-2019, Preqin's alternative assets database as of 06/30/2018, Impact Capital Managers members as of May 2020, list of asset managers who are GIIN members as of May 2020, GIIN's Investors' Council members as of May 2020, signatories to the Operating Principles for Impact Management originated by the IFA as of May 2020

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(CDVCA) website, 3) the Impact Assets website, 4) Preqin's alternative assets database, 5) Impact Capital Managers ("ICM") members, a consortium of general partners, 6) the list of asset managers who are GIIN members, 7) GIIN's Investors' Council members, 8) the signatories to the Operating Principles for Impact Management originated by the International Finance Association, and 9) the Private Equity International ("PEI") Awards "Impact Investment Firm of the Year" top three honorees for the years from 2017 onward.

Aside from Preqin, all of these are special compilations that focus specifically on impact investors. In Preqin, the "fund ethos" variable allows investors to self-identify as having a focus on at least one of the following five categories: "Microfinance"; "Economic Development"; "Socially Responsible"; "Environmentally Responsible" and "Sharia Compliant." We expand this preliminary list by adding investment firms whose stated industry focus corresponds with so-called impact sectors. In particular, we add investment firms that primarily invest in "Clean Technology," "Education/Training," and "Environmental Services." Finally, we further add investment firms that primarily invest in low-income countries, identified as those countries with a GDP per capita of less than U.S. $1,400. This process results in a total of 2,747 potential impact investors for further investigation. We then narrow the set of 2,747 potential impact investors by eliminating those that do not align with our definition of impact investors. We manually search their websites, if available, to see if they make any mention of a dual aim of generating social and financial returns.[17] Through this process, we identify 199 impact investors from Preqin, compared to the 159 identified by Barber et al. (2019) in the period from 1995-2014. We combine

[17]We accomplish this by using Amazon's crowdsourcing marketplace, Mechanical Turk ("MTurk") and their online workforce of "MTurkers." We ask the MTurkers to collect the description, stated mission, and investment strategy as listed on the potential impact investor's website, and to identify whether or not they make mention of the dual aim of generating both financial and social returns. For each potential impact investor, we asked three MTurkers to review its website. If two of three MTurkers voted to exclude an investor, it was excluded. Using this approach, we narrow the list of 2,747 to 624 potential impact investors. Again, following Barber et al. (2021), the remaining 624 were then manually verified by a member of the Project on Impact Investments team, through a careful review of the background and strategy on the impact investor's website to identify any mention of the dual objectives of social impact and financial returns. Only those investment managers who make explicit statements that signal a dual objective were classified as impact investors.

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the information from all of the above listed sources to create a list of 631 non-unique impact investors. We eliminate duplicates across the sources to create a list of 445 unique impact investors.

In Table B.I, we summarize how we create our final set of impact investors used in our analyses. First, we start with the 445 impact investors and eliminate traditional private equity firms that have large impact investment funds (13 impact investors).[18] Next, we review the impact investors' websites and exclude 46 impact investors whose strategies do not focus exclusively on impact investing. This includes development finance institutions such as the International Finance Corporation (a subsidiary of the World Bank) and groups that were launched without an impact mandate but subsequently added one. In addition, here, we looked for language that was more specific than "do good" or "make the world a better place." We included all funds that articulate a goal of promoting economic growth in a specific region, alleviating poverty, or benefiting disadvantaged individuals. However, investors with a focus on specific industries (EdTech, or healthcare, for example), were not automatically categorized as impact, unless they articulated a social mission. For instance, we only include investors in biotech firms that have a target objective beyond the financial returns in the development of a drug, such as helping disadvantaged persons gain access to life-saving medication. This screening left us with 386 impact investors.

We match these 386 impact investors to the May 2021 PitchBook universes of pre-venture, venture capital, private equity growth, and private equity investors (203,898 entities). 290 of the 386 impact investors match to the PitchBook data feed. Then, we drop one investor because it does not have any deal information and nine investors because they do not have any venture capital or PE growth investments. Finally, after additional data cleaning comprised of removing subsidiaries and groups with only failed

[18]This approach screens out funds such as the Texas Pacific Group ("TPG") Rise fund and Bain Capital's Double Impact. While these funds are large, they present a challenge in identifying portfolio companies, as data sources often indicate the firm (e.g., Bain Capital), rather than the fund. Their newness also means outcome data for portfolio companies are typically not available.

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transactions, we are left with the 275 impact investors that we use in our study. Table B.II provides the geographical location of these investors. 149 or little over 50 percent of the investors are based in the United States.

Table B.I: Creating the Set of Impact Investors analyzed in Study

	Dropped	Remaining
PII Impact Investors		445
Groups that also have non-impact funds	13	432
Investors with no specific impact mandate	46	386
No match found in PitchBook data feed	96	290
No deal information in PitchBook	1	289
No VC or PE growth investments	9	280
Subsidiaries or groups with failed transactions	5	275
Impact Investors After Screening		***275***

Table B.II: Impact Investors by Location

Location	Number of Investors
US	149
Non-US	126
Total	***275***

In Table B.III below we provide a complete list of the 275 impact investors in our sample.

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Table B.III: All Impact Investors in the Analysis

1 1st Course Capital
2 3Sisters Sustainable Management
3 3x5 Partners
4 Aavishkaar Capital
5 Accion
6 Actis
7 Acumen Fund
8 Adena Ventures
9 Adenia Partners
10 Adobe Capital
11 Advance Global Capital
12 Advantage Capital (Saint Louis)
13 AgDevCo
14 Agora Partnerships
15 AiiM Partners
16 AKAMAI Capital
17 Albright Capital Management
18 Alitheia Capital
19 AlphaMundi
20 Alter Equity
21 Alterfin
22 Ambar Venture Capital
23 Ananda Impact Ventures
24 Ankur Capital
25 Aqua-Spark
26 Aravaipa Ventures
27 Arborview Capital
28 ArcTern Ventures
29 Armstrong Asset Management
30 Bamboo Capital Partners
31 BELLE Impact Fund
32 Bethnal Green Ventures
33 Better Ventures
34 Big Issue Invest
35 Big Society Capital
36 BlueHub Capital
37 BlueIO
38 BlueOrchard Finance
39 BonVenture
40 Breakthrough Energy Ventures
41 Bridges Fund Management
42 Bridgeway Capital
43 BrightPath Capital Partners
44 Bronze VC
45 Business Partners
46 California Clean Energy Angel Fund
47 Calvert Impact Capital
48 Capria Ventures
49 Caspian Impact Investments
50 CEI Community Ventures
51 CEI Ventures
52 Centre for Innovation Incubation and Entrep.
53 City Light Capital
54 Clean Energy Ventures
55 Cleantech Ventures
56 Climate Change Capital
57 Climate Fund Managers
58 Closed Loop Partners
59 Co-Creation Hub
60 Community Investment Management
61 Community Reinvestment Fund
62 Congruent Ventures
63 Contrarian Capital India Partners
64 Convergence Partners (Africa)
65 Core Innovation Capital
66 Corporacion Inversor
67 Creation Investments Capital Management
68 Cultivian Sandbox Ventures
69 Dayton Development Coalition
70 DBL Partners
71 DC Community Ventures
72 Dev Equity
73 Developing World Markets
74 Développement international Desjardins
75 Dolma Impact Fund
76 Draper Richards Kaplan Foundation
77 Easton Capital Investment Group
78 EcoEnterprises Fund
79 Edge Growth
80 Elevar Equity
81 Encourage Capital
82 Endeavor Catalyst
83 Energy Access Ventures
84 Energy Foundry
85 EnerTech Capital
86 Enhanced Capital Partners
87 Ennovent
88 Enterprise Community Partners
89 Equator Capital Partners
90 ETF Partners
91 European Financing Partners
92 FE Global Clean Energy

Note: See Appendix Section B for an explanation of how we arrived at this final list.

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Table B.III: All Impact Investors in the Analysis (cont.)

93	Fifth Season Ventures
94	Finance in Motion
95	Fledge
96	Flint Atlantic Capital
97	Found8
98	GAWA Capital Partners
99	Generation Investment Management
100	Global Cleantech Capital
101	Global Energy Efficiency and Renewable Energy Fund
102	Global Environment Fund
103	Global Partnerships
104	Good Capital
105	Goodwell Investments
106	Grameen Foundation
107	Grassroots Business Fund
108	Grassroots Capital Management
109	Gray Ghost Ventures
110	Green Investment Group (UK)
111	Greenhouse Capital Partners
112	Greenmont Capital Partners
113	Greensoil Proptech Ventures
114	Grupo ECOS
115	HCAP Partners
116	IGNIA Partners
117	Ignite Impact Fund
118	Impact America Fund
119	Impact Engine
120	Impact Finance Fund
121	Impact First Investments
122	Impact Investment Exchange Asia
123	Impact Investment Group
124	Impact Investment Partners
125	Impax Asset Management Group
126	Incofin Investment Management
127	Inerjys Ventures
128	Injaro Investments
129	Innosphere Ventures
130	Insitor Impact Asia Fund
131	Invest Detroit
132	InvestEco Capital
133	Invested Development
134	Investisseurs & Partenaires
135	Iona Capital
136	iYa Ventures
137	Jacana Partners
138	Jadeberg Partners
139	Juvo Ventures
140	Kaizen Private Equity
141	Kendall Investments
142	Kentucky Highlands Investment
143	Kingdom Capital
144	Kukula Capital
145	Lafise Investment Management
146	Leapfrog Investments
147	Leopard Capital
148	LGT Lightstone Aspada
149	Lightrock
150	Lightsmith Group
151	Linn Grove Ventures
152	Local Initiatives Support Corporation
153	LoftyInc Capital Management
154	Lok Capital
155	Lotus Impact
156	Maine Venture Fund
157	Masdar Capital
158	MCE Social Capital
159	Media Development Investment Fund
160	Medical Credit Fund
161	Menterra
162	Meridiam Infrastructure
163	Meridian Management Group
164	Meritus Ventures
165	MGM Innova Capital
166	MicroVest Capital Management
167	Mindfull Investors
168	Minerva Capital Group
169	Mirova
170	Moringa
171	Mountaineer Capital
172	Murex Investments
173	Natural Capital Investment Fund
174	Nesta
175	New Hampshire Community Loan Fund
176	New Markets Venture Partners
177	New Mexico Community Capital
178	New Sparta Assets Management
179	NewSchools Venture Fund
180	NewWorld Capital Group
181	Next Wave Impact
182	NextEnergy Capital
183	NGEN Partners
184	Nordic Impact Funds

Note: See Appendix Section B for an explanation of how we arrived at this final list.

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Table B.III: All Impact Investors in the Analysis (cont.)

185 North Sky Capital
186 Novastar Ventures
187 Oikocredit Ecumenical Development Cooperative Soc
188 Oltre Venture
189 Omnivore.

190 Pacific Community Ventures
191 Pangaea Ventures
192 Patamar Capital
193 PC Capital
194 Pearl Capital Partners
195 Pegasus FinInvest Advisory
196 Penn Venture Partners
197 Persistent Energy Capital
198 Phatisa
199 Physic Ventures
200 PrairieGold Venture Partners
201 Progression Capital Africa
202 Q-Growth
203 Quadria Capital
204 Quona Capital
205 RAIN Source Capital
206 Reach Capital
207 Renewal Funds
208 responsAbility Investments
209 Rethink Capital Partners
210 Ronoc
211 Root Capital
212 RSF Social Finance
213 Rubio Impact Ventures
214 Safer Made
215 Sarona Asset Management
216 Secha Capital
217 Ship2B
218 SI Capital Private Equity
219 Silk Invest
220 Sindicatum Renewable Energy
221 SJF Ventures
222 Small Business Community Capital
223 Small Enterprise Assistance Funds
224 Social Capital
225 Social Impact Capital
226 Social Venture Fund
227 Social Ventures Australia
228 Spark Ventures
229 StartGreen Capital
230 Strategic Development Solutions
231 SunFunder
232 Sustainable Growth Management
233 SustainVC
234 Symbiotics
235 The Builders Fund
The Community Development Venture Capital
236 Alliance
237 The Ecosystem Integrity Fund
238 The Forest Company
239 The JumpFund
240 The Nature Conservancy
241 The Osiris Group
242 The Reinvestment Fund
243 The Social Entrepreneurs Fund
244 The Southern Appalachian Fund
245 The Water Council
246 Trillium Group
247 Triodos Investment Management
248 Triple Jump
249 Triple P Capital
250 True Wealth Ventures
251 Tsing Capital
252 Unitus Ventures
253 University Venture Fund
254 University Ventures
255 Unreasonable Capital
256 Uprising
257 Urban Us
258 VentureWave
259 Vermont Works Management Company
260 VestedWorld
261 VIC Technology Venture Development
262 Village Capital
263 Virgin Green Fund
264 Vision Ridge Partners
265 Vital Capital Fund
266 Vox Capital
267 Voxtra
268 WAVE Equity Partners
269 Wermuth Asset Management
270 West Virginia Jobs Investment Trust Board
271 WindSail Capital Group
272 Wireframe Ventures
273 Women's World Banking
274 XSML
275 Yunus Social Business

Note: See Appendix Section B for an explanation of how we arrived at this final list.

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B.2 Traditional Investor Identification

Table B.IV: Breakdown of PitchBook Primary Investor Types[19]

Accelerator/Incubator	6,308	***Limited Partner***	***1,335***
Angel (individual)	***48,544***	***Merchant Banking Firm***	***205***
Angel Group	1,638	Mezzanine	151
Asset Manager	1,988	***Mutual Fund***	***96***
Business Development Company	***65***	Not-For-Profit Venture Capital	268
Corporate Development	***168***	***Other***	***12,556***
Corporate Venture Capital	***1,248***	Other Private Equity	116
Corporation	***67,539***	***PE-Backed Company***	***16,048***
Family Office	***1,300***	PE/Buyout	8,913
Fund of Funds	***204***	Real Estate	2,517
Fundless Sponsor	***43***	SBIC	48
Government	***1,893***	***Secondary Buyer***	***33***
Growth/Expansion	1,439	***Sovereign Wealth Fund***	***74***
Hedge Fund	***1,027***	***Special Purpose Acquisition Company***	***286***
Holding Company	***719***	***University***	***512***
Impact Investing	433	***VC-Backed Company***	***4,228***
Infrastructure	194	Venture Capital	19,439
Investment Bank	***869***	***Missing***	***915***
Lender/Debt Provider	539	***Total***	***203,898***

Next, we create a comparable set of traditional non-impact investors. In our study, we focus on venture capital and growth equity transactions because impact investors primarily invest in these deal types. Thus, we begin by screening for investors that primarily engage in these types of investments. Using the PitchBook data feed, we collect all the investors in the Venture Capital and Private Equity universes. These two universes include all the investors that have provided capital to private companies that have ever received venture capital or private equity capital. There are 203,898 investors in total.

We begin by removing our 445 impact investors from the 203,898 total investors. This results in removing 322 impact investors that match. Next, we restrict attention to investors that primarily invest in earlier stage private capital investments (i.e., venture capital and growth equity). Table B.IV provides a breakdown of the total investors by PitchBook Primary Investor Type. As an initial screen, we exclude investors whose Primary Investor Types do not include venture capital or private equity growth as a main

[13]Primary Investor Types available in the PitchBook pre-venture, venture, and private equity data feed universes.

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strategy (e.g., Hedge Fund). Thus, we remove the types of investors that are italicized in Table B.IV. Based on our research, a few of the impact investors were misclassified by PitchBook into the italicized investor-type categories. We leave for future research reviewing the investor types of the non-impact investors. This results in removing 160,035 investors. Next, to further ensure that the traditional investors are focused on VC and growth, we restrict our sample to focus on investors that have at least four private capital portfolio companies, thus removing investors that may only have one-off venture capital or growth equity investments (e.g., we do not want to include a mutual fund that has a few private equity investments, where private equity is not a main part of its investment strategy). Here, we remove 22,253 investors. Lastly, after some additional data cleaning steps, which include removing investors that did not engage in venture capital or private equity growth transactions, duplicate investors, and investors with only failed transactions, we are left with 20,231 traditional investors in the final data set. See Table B.V for a summary of our screening process.

From Table B.VI, we see that 42 percent of traditional investors are headquartered in the United States.

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Table B.V: Creating the Set of Traditional Investors Analyzed in Study

	Dropped	Remaining
Total Number of Investors in PitchBook's VC and PE Universes		203,898
PII Impact Investors	322	203,576
Angel (individual)	48,544	155,032
Corporate Development	168	154,864
Corporate Venture Capital	1,246	153,618
Corporation	67,534	86,084
Family Office	1,299	84,785
Fund of Fund	201	84,584
Government	1,893	82,691
Hedge Fund	1,025	81,666
Holding Company	719	80,947
Limited Partner	1,333	79,614
Mutual Fund	96	79,518
Sovereign Wealth Fund	74	79,444
Special Purpose Acquisition Company	286	79,158
University	512	78,646
Investment Bank	869	77,777
Merchant Banking Firm	205	77,572
PE-Backed Company	16,046	61,526
VC-Backed Company	4,228	57,298
Other	12,551	44,747
Missing	915	43,832
Business Development Company	65	43,767
Fundless Sponsor	43	43,724
Mezzanine	150	43,574
Secondary Buyer	33	43,541
Investors with fewer than 4 Portfolio Companies	22,253	21,288
Investors not engaged in VC or growth transactions	485	20,803
Investors dropped from data cleaning	572	20,231
Traditional Investors After Screening		***20,231***

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Table B.VI: Traditional Investors by Location

Location	Number of Investors
US	8,554
Non-US	10,131
Missing location	1,546
Total	***20,231***

B.3 Portfolio Company Data for Impact and Traditional Investors

In this section, we describe the process by which we obtain the portfolio companies of both the impact investors and traditional investors and our data cleaning process.

First, we match the 290 impact investors found in PitchBook to the PitchBook Investment data feed and obtain 7,418 portfolio companies. We clean these data to remove companies with missing deal information or failed transactions (109 companies dropped), companies without any venture capital or growth equity investments (647 companies dropped), and duplicates (598 companies dropped). We are left with 6,064 companies which comprise our set of "impact portfolio companies." The final result is 6,064 portfolio companies matched to 275 impact investors (note that as we cleaned our impact portfolio company data set, 15 impact investors dropped out of our sample). See Table B.VII for a summary of our data screening process. From Table B.VIII, we find that 50 percent of the 6,064 impact companies are headquartered in the United States.

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Table B.VII: Number of Impact Portfolio Companies ("IPC")

	Dropped	Remaining
IPC of Original Impact Investors (N=290)		7,418
IPC missing deal information or only have failed transactions	109	7,309
IPC with no VC or PE growth investments	647	6,662
IPC dropped from data cleaning	598	6,064
Impact Portfolio Companies After Screening		***6,064***

Table B.VIII: Impact Portfolio Companies by Location

Location	Number of Companies
US IPCs	3,105
Non-US IPCs	2,959
Total	***6,064***

Next, we gather the portfolio companies of the 20,231 traditional non-impact investors and conduct the same data cleaning steps as we did above.

We match 21,228 traditional investors to the PitchBook Investment data feed and obtain 324,303 portfolio companies. We remove 4,826 companies that also receive impact investments in addition to capital from traditional investors. After this step, 449 companies are dropped because they do not have any transaction information. We also drop 93,157 companies that did not receive either venture capital or private equity growth investments. Lastly, after removing duplicates, we drop 21,227 companies and are left with 204,644 traditional companies from 20,231 traditional investors (note that as we cleaned our traditional portfolio company data set, 1,057 traditional investors dropped out of our sample). All details of the data cleaning process are shown in Table B.IX below.

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Table B.IX: Portfolio Companies of Traditional Investors ("Traditional PC")

	Dropped	Remaining
Traditional PCs (21,288 traditional investors)		324,303
Impact Portfolio Companies	4,826	319,477
Traditional PCs with no deal information/only failed transactions	449	319,028
Traditional PCs with no VC or PE growth investments	93,157	225,871
Traditional PCs dropped from data cleaning	21,227	204,644
Traditional Portfolio Companies After Screening		***204,644***

Of these 204,644 traditional companies, 79,252 (39 percent) are in the United States. See Table B.X below.

Table B.X: Traditional Portfolio Companies by Location

Location	Number of Companies
US Traditional PCs	79,252
Non-US Traditional PCs	124,941
Missing location	451
Total	***204,644***

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C Explanation of Minimum Cut Algorithm to Identify Additional Impact Investors

In Section 3, we implement a variant of the minimum-cut algorithm (Stoer and Wagner 1997) to identify additional impact investors. The goal of this algorithm is to partition the network into two disjoint sets, minimizing the number of co-investments that occur across the partition. The result is one set that contains traditional investors, as well as impact investors who regularly co-invest with traditional investors, impact investors who regularly co-invest with impact investors who regularly co-invest with traditional investors, and so on. The other set contains impact investors who rarely co-invest with traditional investors, impact investors who rarely co-invest with impact investors who regularly co-invest with traditional investors, and so on.

The specific implementation of this algorithm is as follows. We define each investor within our data set to be a node n in the network. There is a weighted link $l_{n,n'} \in \mathbb{N}$ between each pair of investors n and n' representing the number of times that the two investors have participated in the same deal (the same investment round of a single company). We then add two additional nodes, one we call *Traditional* and one we call *Impact*. A link is drawn between *Traditional* and every traditional investor, and a link is drawn between *Impact* and every impact investor. That is, $l_{n,Traditional} = 1$ if n is a traditional investor and $l_{n,Impact} = 1$ if n is an impact investor.

We then solve

$$min_{P_1,P_2} \sum_{n \in P_1, n' \in P_2} l_{n,n'}$$

where P_1 and P_2 are a partitioning of the set of impact investors.

The links between each investor and the two auxiliary nodes *Impact* and *Traditional* are an acknowledgement of their self-identification as impact investors or traditional investors. Therefore this algorithm partitions the set of investors into two disjoint subsets

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that minimizes the weighted sum of co-investments between investors in different partitions as well as violations of investors' self-proclaimed identity. The algorithm penalizes partitions that place impact investors in the traditional set and traditional investors in the impact set, as well as partitions with many co-investments between partitions.

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