THE FINANCIAL PERFORMANCE OF REAL ASSETS IMPACT INVESTMENTS

INTRODUCING THE TIMBER, REAL ESTATE, AND INFRASTRUCTURE IMPACT BENCHMARKS

CAMBRIDGE ASSOCIATES

GIIN
GLOBAL IMPACT INVESTING NETWORK

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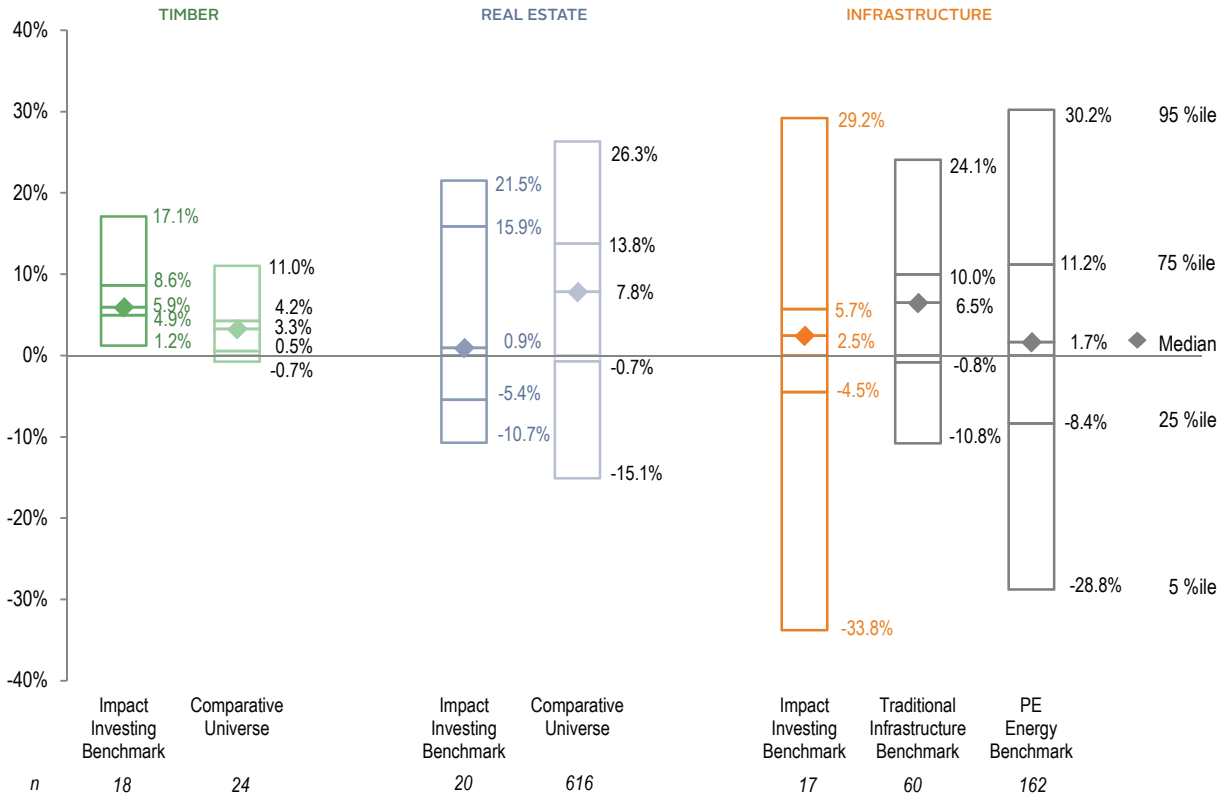
EXECUTIVE SUMMARY

This report analyzes the financial performance of 55 real assets impact investing funds of vintage years 1997 through 2014, grouped into three sectors: timber, real estate, and infrastructure. Impact investments are defined by their intent to generate social and/or environmental returns alongside a financial return.

Overall, we note two key findings. The first is that risk-adjusted market rates of return are achievable in impact investing, as evidenced by the fact that the distribution of impact investing fund returns mirrors the distribution of conventional real asset fund returns (Figure 1). The second is that fund selection is key to success, as the distribution of individual fund returns varies widely; this applies equally to impact investing funds and conventional funds.

Figure 1: Distribution of Fund IRRs Net to LPs by Quartile
As of June 30, 2016



Notes: The Timber Impact Investing Benchmark includes funds of vintages 1997–2014 and the comparative timber universe was constructed of traditional funds of the same vintages. The Real Estate Impact Investing Benchmark includes funds of vintages 2004–2014 and the comparative real estate universe was constructed of traditional funds of the same vintages. The Impact Investing Benchmark includes funds of vintages 2005–2014; the focus of funds in this benchmark is sufficiently differentiated that a comparative universe does not exist today. For reference purposes, we have included the returns of our traditional Infrastructure Benchmark and our PE Energy Benchmark, limited to funds raised over the 2005–2014 period.

Impact funds focused on the **timber sector**, raised in vintage years 1997–2014, performed well. Since inception to June 30, 2016, they have produced a pooled net internal rate of return (IRR) of 5.9%, comparing favorably with conventional timber funds, which returned 3.3% over the same period using the same set of vintage years. Top quartile funds returned at least 8.6% compared with at least 4.2% for conventional timber funds. The impact objectives of these funds include sustainable timber production, land conservation, and biodiversity conservation.

- Impact funds focused on the **real estate sector**, raised in vintage years 2004–2014, did not have as much downside as conventional funds raised in the same period, nor as much upside. Real estate impact funds have produced a pooled net IRR of 0.8% versus 4.9% for conventional real estate funds since inception to June 30, 2016. The IRR for the impact universe was pulled down by the poor performance of a handful of larger funds. Notably, the universe of impact real estate funds is skewed younger than that for conventional funds, with half of the impact funds raised in vintage years 2011–2014 compared to just under a third of the conventional universe. The impact objectives of these funds include green real estate, affordable housing, and community services.

- Impact funds focused on the **infrastructure sector**, raised in vintage years 2005–2014, generated a wide variety of performance. The top fund produced a net IRR over 29% since inception to June 30, 2016, and nearly one in four funds generated a net IRR greater than 10%. However, three funds had returns below -15%, so the overall pooled net IRR was 0.3% and median IRR, 2.5%. The funds included in the impact benchmark invest primarily in renewable energy, a new sector that cannot be easily compared to a conventional benchmark. For reference, a conventional infrastructure benchmark returned a pooled net IRR of 6.6% over the same period using the same set of vintage years, with a median of 6.5%, while a conventional private equity energy benchmark returned a pooled net IRR of 3.8% with a median of 1.7%. In addition to renewable energy, the impact objectives of funds in the impact infrastructure sample include climate change mitigation and water resource management.

The findings reflect performance of real assets impact funds that is comparable with conventional real assets funds, albeit with variation at the individual fund level, reinforcing the importance of manager selection in private investing. At the same time, these impact fund managers are also rigorously pursuing a range of impact objectives—both social and environmental.

This report adds to the growing body of data on the performance of impact investments. Creating and analyzing benchmarks for private investments, especially for a younger, emerging portion of the market such as impact investing, poses a number of challenges. Difficulty acquiring private fund performance data and strict inclusion criteria limited our ability to amass a large dataset, which presented data analysis limitations that are unavoidable at this stage. Cambridge Associates produces an ongoing quarterly impact investing benchmark report to track private equity and venture capital impact investing funds over time, and this report launches real assets impact investing financial performance benchmarks in timber, real estate, and infrastructure. The value of this information to the market will only increase as more funds are added to the benchmarks and existing funds mature. ■

INTRODUCTION

This report was produced by Cambridge Associates (CA), a global investment firm and one of the world's leading developers of private investment performance benchmarks, in partnership with the Global Impact Investing Network (GIIN), an organization dedicated to increasing the scale and effectiveness of impact investing worldwide. It presents findings from our analysis of the financial performance of private real assets impact investing funds across three sectors: timber, real estate, and infrastructure. This report also marks the launch of the real assets impact investing benchmarks, which will track the financial performance of impact investing funds across the three sectors of focus and will be maintained and updated on a quarterly basis.

While the impact investing market continues to grow, a lack of high-quality performance data presents a barrier to greater and more efficient capital deployment. CA and the GIIN are actively working to address this gap by partnering to produce financial performance studies of impact investing funds. This report is the second in that suite; the first report,[1] focused on private equity and venture capital impact investing funds, was published in 2015 and the resulting Private Equity/Venture Capital Impact Investing Benchmark is updated quarterly by CA.

As a broad category of investments, real assets encompass industries such as timber, real estate, infrastructure, oil & gas, and agriculture, among others. Unlike other asset classes, real assets are tangible goods that derive value from their own intrinsic properties, rather than being a claim on other assets (as are stocks, bonds, and commodities). They play an important role in portfolio construction for institutional investors, offering current cash flows, unique sources of economic return, diversification, and inflation-sensitive characteristics.

Within impact investing, real assets constitute one of the largest opportunity sets. In ImpactBase, 90 out of 417 funds focus on real assets (ranking third behind private equity/venture capital and private debt), and 185 of the 699 private investment funds in CA's Mission-Related Investing (MRI) database are invested in real assets (second to private equity/venture capital).[2] More broadly, current macro drivers such as climate change, demographic shifts, and resource scarcity have heightened interest in real assets impact investments. Many of the UN Sustainable Development Goals[3] (SDGs) are aligned with the impact goals and investment theses of the real asset impact investing funds included in this report.[4] Furthermore, according to a 2016 study by The New Climate Economy, sustainable infrastructure investing (a real assets impact investing strategy) is crucial for achieving the SDGs, particularly the reduction of greenhouse gas emissions to limit global temperature increases.[5]

This report focuses on three distinct sectors within real assets: timber, real estate, and infrastructure. While timber is a more established sector, with some fund managers having been in the sustainable timber business for more than 30 years, infrastructure impact investing, focusing mostly on renewable energy generation, has only emerged as an investable strategy in the past ten to 15 years. The report provides much-needed financial performance data for each sector, highlighting nuances within each, according to vintage year, size, and geographic focus. Where feasible, performance is also compared to the returns of "conventional" (non-impact) funds in the same sectors.

1 Please see Jessica Matthews et al., "Introducing the Impact Investing Benchmark," Cambridge Associates and GIIN, 2015.
2 ImpactBase is the online database of impact investment funds and products managed by the GIIN. CA's MRI database sits within its broader investment manager database and includes funds in both public and private asset classes that align with various social or environmental mission objectives.
3 The UN Sustainable Development Goals are a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity by 2030.
4 For example, SDG 7: Affordable and clean energy; SDG 9: Industry, innovation, and infrastructure; SDG 11: Sustainable cities and communities; SDG 13: Climate action; SDG 14: Life below water; and SDG 15: Life on land.
5 Jan Corfee-Morlot et al. "The Sustainable Infrastructure Imperative: Financing for Better Growth and Development," The New Climate Economy, 2016.

While the intent of this research is to shed light on the financial performance of impact investing funds in the real assets space, this report supplements the financial performance analysis with data on the social and environmental impact strategies of these funds. This information includes funds' target impact objectives and methods for measuring and managing impact, providing insight into how these funds are working to address a range of social and environmental challenges.

METHODOLOGY

FUND SELECTION

The focus of this report is on private real assets impact investing funds, where impact investments are defined by their intent to generate social and/or environmental returns alongside a financial return.[6] This research does not encompass private equity or venture capital impact investing funds, which are the focus of the previously released Private Equity/Venture Capital Impact Investing Benchmark.

The research team identified a list of relevant impact investing funds through existing databases maintained by various reputable networks worldwide, including the GIIN's ImpactBase, CA's MRI database, and the ImpactAssets 50.[7] Inclusion in these mission-oriented databases requires passing rigorous screens for impact intent and strategy, though targeted funds were subject to additional review by the research team to confirm both their impact and investment objectives.

In addition to pursuing social and/or environmental outcomes, funds in the sample are restricted to those targeting market-rate risk-adjusted returns. The full impact investing market is diverse and includes a range of target returns, from concessionary to market rate, but in the interest of creating a uniform dataset that is more easily comparable to the broader opportunity set of private real assets investments, only impact investing funds targeting market-rate returns were included (Appendix 2).

As noted earlier, real assets include a wide-ranging set of investment strategies. Returns vary between and even within sectors depending on investment stage and strategy. Real assets impact investing funds were considered market rate if they were targeting a net internal rate of return (IRR)[8] commensurate with the sector and strategy of focus. The performance charts shown in the body of this report reflect IRR calculations. Appendix 3 shows returns for the impact funds in our sample by multiple of invested capital.[9]

DATA OVERVIEW

From an initial list of more than 300 funds, 129 real assets impact investing funds were determined to meet both impact and financial criteria. To be included in the benchmark, funds were required to meet CA's strict data quality standards. As is the case with all other CA private investment benchmarks, participating impact fund managers were required to submit both annual audited financial statements as well as quarterly cash flow statements.

Only funds of vintage year 2014 or earlier are included in the analysis.[10] As per CA's private investment benchmark construction guidelines, for analysis as of June 30, 2016, funds of later vintage years are excluded as they do not have a sufficient track record to enable meaningful study of performance.

The research team was able to collect data from 55 real assets impact investing funds that met all impact, financial, data submission, and vintage year criteria. Several fund managers submitted part but not all of the required data or submitted all required data but manage funds that were too

6 Private real assets investment funds include unlisted, fixed-term limited partnerships that invest equity and subordinated debt into physical assets.
7 ImpactAssets 50 is an annually updated list of experienced impact investing firms.
8 The IRR is the since inception return metric most commonly used in the private equity industry. It represents the discount rate that makes the net present value of an investment equal to zero. The IRR calculations in this report are net of management fees and carried interest. Most IRRs shown are pooled IRRs. The pooled IRR aggregates all cash flows and ending net asset values (NAVs) in a sample to calculate a dollar-weighted IRR.
9 Appendix 3 shows two multiples. The total value to paid-in capital (TVPI) multiple is calculated by dividing the total value of the fund (residual value plus value of capital distributed to LPs) by total LP contributions. The distributions to paid-in capital (DPI) multiple is calculated by dividing cumulative fund distributions to LPs by total LP contributions.
10 A fund's vintage year is its legal inception date, as noted in its financial statements.

young to be included in the analysis at present. CA will continue to work with these and any other managers interested in participating, and will include them in later updates to the benchmark as data collection is completed and/or as funds mature.

SAMPLE SEGMENTATION

Drivers of risk and return vary significantly depending on the type of assets underlying a given investment strategy. The research team elected to divide the real assets data into three distinct sectors of focus: timber, real estate, and infrastructure. This approach was supported by feedback from industry participants—including real assets impact investors and fund managers—and also mirrored the composition of CA's traditional private real assets benchmarks, which are described in Figure 2.[11]

Figure 2. Composition of Traditional CA Private Real Assets Benchmarks

CA BENCHMARK	DEFINITION	SUB-SECTORS INCLUDED
Timber	Funds that primarily invest in timberland	Hardwoods, softwoods, diversified
Real Estate	Funds that make direct investment in real estate properties and/or real estate-related operating companies	Hotel, industrial, land, office, residential multi, residential single, retail, diversified
Infrastructure	Funds investing in permanent assets that a society requires to maintain economic and social growth	Energy infrastructure, power generation, public-private partnerships (PPP), renewable energy infrastructure, telecommunications, transportation, utilities & power, diversified
PE Energy	Funds investing in opportunities through the entire energy value chain including energy infrastructure	Infrastructure, mining, oil & gas exploration and production, power services, alternative energy production, diversified

A number of real assets impact investing funds pursue more niche strategies that do not align neatly with one of the three sectors of focus. For comparative purposes, such funds are grouped within the sector determined to have the most similar risk/return characteristics and will remain there until the sample size of funds in those smaller sectors grows large enough to allow for independent analysis.[12] The distribution of funds and impact objectives of each sector are outlined in Figure 3.

Figure 3. Sample Impact Objectives for Real Assets Impact Investing Dataset

SECTOR	SAMPLE SIZE/ VINTAGE YEARS	SAMPLE IMPACT OBJECTIVES
Timber	18 1997–2014	Sustainable timber production
		Land conservation/rehabilitation
		Biodiversity conservation
Real Estate	20 2004–2014	Green real estate
		Affordable housing
		Community services
		Agriculture
Infrastructure	17 2005–2014	Renewable energy
		Climate change mitigation
		Water resource management

11 For all analyses, the data for the traditional benchmarks shown excludes funds present in the impact investing dataset.
12 Please see "Challenges and Caveats" later in this report.

Where applicable, the performance of impact investing funds is shown alongside that of a comparative universe from the CA database representing private real assets funds of the same sector and vintage years as those in the impact investing dataset. Biases between the impact investing and comparative universes are noted where relevant and, to the extent possible given the limited number of impact investing funds in the sample, performance analyses attempt to address these biases.[13] The type and presentation of performance analyses for each sector may vary based on what the research team deemed to be most instructive for understanding the nuances of the underlying dataset.

MEASURING IMPACT OUTCOMES

The field of impact measurement is quickly evolving and techniques are becoming more sophisticated; however, there is no standard taxonomy to categorize impact objectives.[14] The research team collected basic impact-related data for each of the 55 funds, if available, such as impact objectives, impact measurement system, third-party certification, and impact metrics tracked. Data were obtained from ImpactBase, fund manager impact reports, and fund manager websites, and are therefore self-reported by fund managers. The research team compiled the data and aggregated analysis for each of the three sectors (timber, real estate, and infrastructure).[15] In each of the sector analysis sections later in this report, impact objectives are summarized following the respective performance analysis. In addition to these aggregate metrics, Appendix 1 shares a profile of one manager within each sector, providing more detail on how the fund measures and achieves impact objectives. These profiles were generated through interviews with each of the fund managers.

13 Please see "Challenges and Caveats" later in this report

14 Some objectives discussed in this report sit at differing levels of specificity, and therefore may overlap. For example, one could argue that all funds that target green real estate must target energy efficiency and/or renewable energy generation. While we acknowledge this potential for overlap, the objectives described are largely self-reported by funds, so should provide an accurate picture of the impact they seek.

15 All 55 funds in the benchmarks have clear, publicly stated impact objectives. The majority use precise metrics to track and monitor impact performance, and many also report on their impact performance publicly or directly to limited partners. Thirty-seven of the 55 funds in the benchmark also provided data on the system they use for impact measurement and management. Twenty-seven funds reported using a proprietary system to track impact data (which may be a combination of various existing impact measurement tools). Ten funds used IRIS metrics to measure impact, and three used the B Impact Assessment tool. The clear intent to generate positive impact, and the rigorous impact measurement processes employed by these funds, were indicators that these funds vigorously pursue impact objectives alongside their financial goals.

A NOTE ON TAX INCENTIVES

Many real assets impact investment funds make use of federal tax credit programs designed to incentivize private investment in projects with a social and/or environmental benefit. Depending on the specific structure of the program, these tax credits may be used to lower the cost of borrowed capital at the fund level, reduce the federal income tax of the individual investor, and/or reduce the taxable value of fund assets. Access to these incentive programs may alter the risk/return profile at either the fund or investor level compared to strategies for which these incentives are not available. In this report, all returns are calculated on a cash-on-cash basis to fund investors. Depending on the program in question, the financial impact of these incentives may already be included in the net return calculation or may be realized as an additional benefit to investors beyond the scope of fund-level returns. Examples of federal tax incentive programs include: Low Income Housing Tax Credits, New Markets Tax Credits, Business Energy Investment Tax Credits, and Conservation Easements. Managers of non-impact funds also have access to these tax incentives provided that underlying investments meet program eligibility requirements.

TIMBER

Investors typically look to timberland investments for their potential to add value through multiple avenues—land appreciation, biological growth, tree harvest, and other income streams, including grazing and hunting leases—and for diversification benefits, as timber typically exhibits low correlation to other asset classes. Impact investors focused on timber also recognize that value may come from additional revenue streams such as land conservation or restoration in addition to sustainable timber production, as most of the timber-focused funds in the sample indicated. Additionally, a few impact funds in the dataset solely target forestland and other natural resource conservation without a focus on timber production. Funds targeting sustainable timber production often acquire industrially managed forestland and transition it to new management groups certified for sustainable practices, such as sustainable silvicultural techniques.[16]

CHARACTERISTICS

A notable feature of the Timber Impact Investing Benchmark is that it constitutes a significantly larger share of the combined impact and comparative universes than the other impact sectors analyzed—the Timber Impact Investing Benchmark constitutes over one-third of the capitalization of the total private timber sector over the vintage years analyzed. Timber as an asset class is considerably smaller, both by capital invested and number of funds raised, than either real estate or infrastructure, and displays a higher concentration of managers. Both the impact and comparative universes are characterized by a smaller number of firms managing a series of funds following the same or similar strategies across multiple vintage years, whereas the other sectors analyzed exhibit a greater diversity of fund managers and strategies pursued.

Overall, the funds in the Timber Impact Investing Benchmark skew slightly smaller and younger than the comparative universe, but the most significant difference between the two datasets is in geographic focus (Figure 4). The capitalization of the Timber Impact Investing Benchmark is overwhelmingly US-focused versus the comparative universe. Over half of the capitalization of the comparative benchmark is in developed markets outside of the United States, to which the impact universe has no exposure. Less than 10% of both the impact and comparative timber universes by capitalization are invested in emerging markets, where risk/return profiles are typically higher than developed markets equivalents (both US and non-US). Although the small size of the timber dataset did not allow for the analysis of performance by geography, these differences are important to keep in mind when drawing insights from the data.

16 Silviculture is the science of controlling the establishment, growth, composition, health, and quality of forests and woodlands.

Figure 4. Timber Characteristics
As of June 30, 2016

	TIMBER IMPACT INVESTING BENCHMARK		COMPARATIVE TIMBER UNIVERSE	
	COUNT (N)	CAPITALIZATION ($M)	COUNT (N)	CAPITALIZATION ($M)
VINTAGE YEAR				
1997–2002	4	780	5	232
2003–2006	4	1,350	12	4,004
2007–2010	6	1,359	6	2,274
2011–2014	3	425	---	---
FUND SIZE ($M)				
≤100	3	191	7	365
100–250	10	1,819	5	898
250+	4	1,903	11	5,246
GEOGRAPHIC FOCUS				
US	17	3,913	15	2,664
Emerging Markets	---	---	---	---
Developed Markets ex US	---	---	8	3,846
TOTAL*	17	3,913	23	6,510

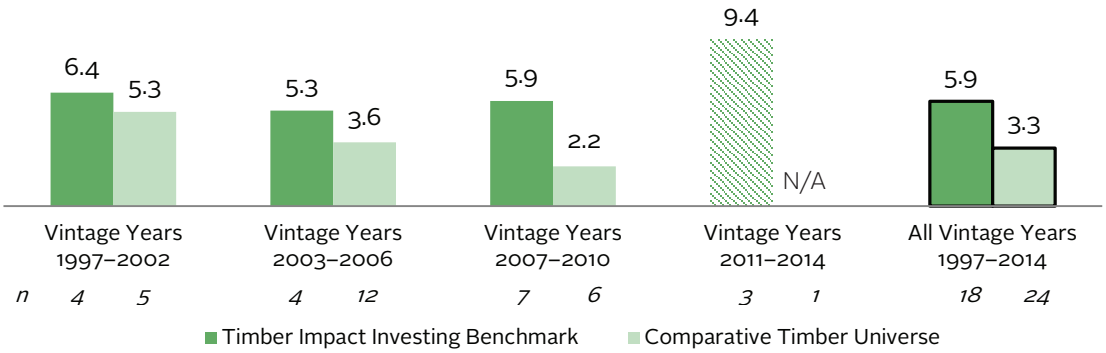
* The timber impact universe includes 18 funds, and the comparative timber universe includes 24 funds. One fund in each universe had unique characteristics that would have put it in its own category in this table on some criteria. For reasons of data confidentiality, we have removed these funds from this table. They are included in all of the analysis we conducted and are shown in the subsequent charts in this section.

PERFORMANCE ANALYSIS

Pooled IRR by Vintage Year

Across all vintage year groupings (Figure 5), funds in the Timber Impact Investing Benchmark outperformed peers in the comparative universe. Since inception to June 30, 2016, the 18 timber impact investing funds produced a pooled IRR of 5.9% versus 3.3% for the comparative benchmark. The return differential is narrower in the earliest vintage years, where returns are largely realized, but becomes more pronounced for vintage years 2003–2006 and 2007–2010. Performance for the three impact funds in vintage years 2011–2014 is strong, but given the relative immaturity will not be conclusive for another several years; the sample size of funds in the comparative universe during this time period was not large enough to allow for analysis.

Figure 5. Timber – Pooled IRR (%) by Vintage Year
As of June 30, 2016

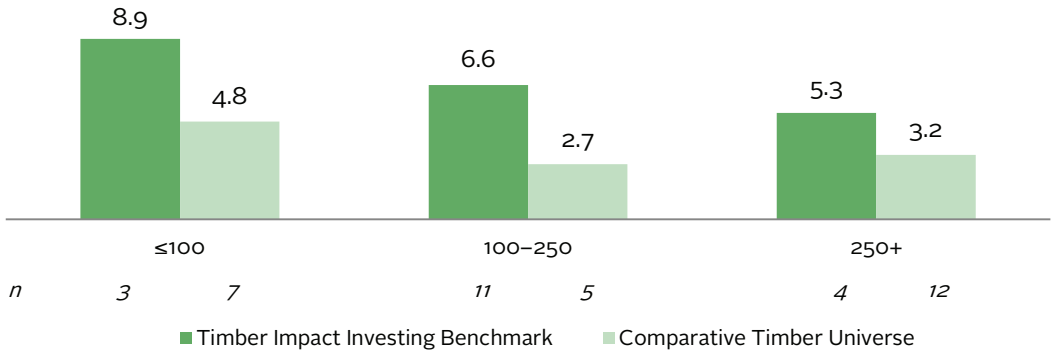


Note: The 2011–2014 period includes insufficient funds in the comparative universe for analysis. The impact benchmark includes only a few funds, which, coupled with the immaturity of the funds, suggests that the IRR for funds in these vintage years could change significantly over time.

Pooled IRR by Fund Size

Funds below $100 million in capitalization performed the strongest in both datasets, with the three timber impact funds in this category returning a pooled IRR of 8.9% since inception versus seven comparative funds returning a pooled IRR of 4.8% (Figure 6). The performance gap between the impact and comparative universes is less pronounced at the $250 million and above mark, but timber impact investing funds outperformed the comparative dataset across all capitalization ranges.

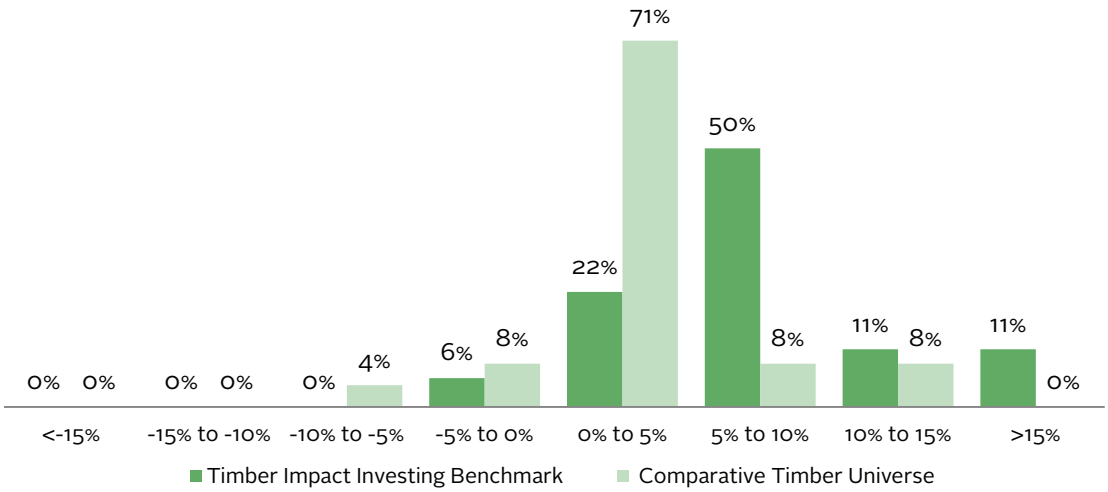
Figure 6. Timber – Pooled IRR (%) by Fund Size ($M)
As of June 30, 2016



Distribution of Returns

Both the impact and comparative timber universes exhibit a relatively normal distribution of returns (Figure 7), though the midpoint of that distribution differs between the sample sets. The comparative timber universe shows a high degree of concentration, with over 70% of funds (by count) delivering pooled IRRs between 0% and 5%, and another 17% of funds within 5% of that range on either side. The Timber Impact Investing Benchmark shows greater variation in returns, and the entire distribution is shifted to the right (or "up")—50% of timber impact investing funds returned between 5% and 10% net to LPs. It is also notable that only one timber impact investing fund, a 2009 vintage, delivered a negative return (versus three funds in the comparative universe of vintages 2004, 2006, and 2013), while two more recent vintages have earned a net IRR upwards of 15% (versus zero in the comparative universe).[17] Figure 1 shown earlier further illustrates this point—the IRR breakpoints for the Timber Impact Investing Benchmark are higher across all quartiles.

Figure 7. Timber – Distribution of Fund IRRs Net to LPs
As of June 30, 2016



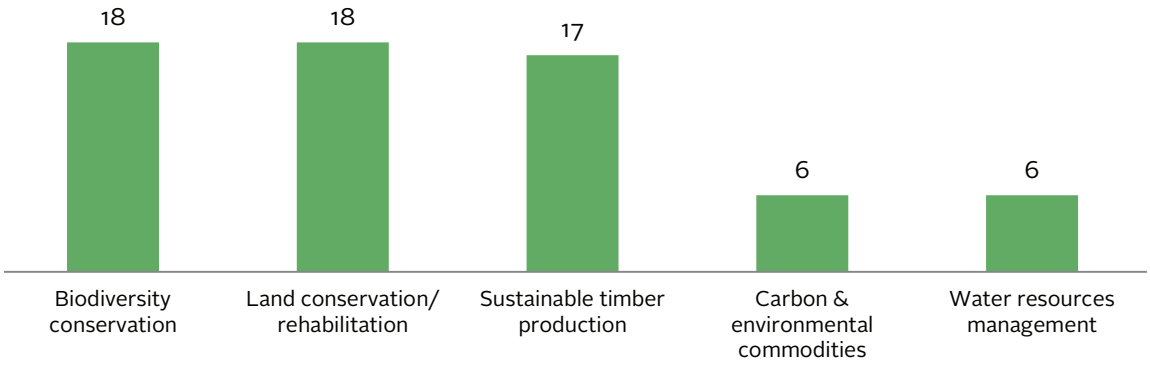
Note: Percentage of funds in each IRR performance group is based on fund count.

17 As noted, the Timber Impact Investing Benchmark skews younger than the comparative universe. The two funds in the impact universe with since inception IRRs greater than 15% are of vintages 2010 and 2013. As relatively young vintages, performance may evolve.

IMPACT OBJECTIVES AND METRICS

All of the impact timber funds in this dataset target biodiversity conservation and land conservation/rehabilitation. All but one also noted sustainable timber production as an impact objective. In the United States, funds that target conservation often acquire ecologically important land and aim to ensure its conservation (often in return for conservation tax credits) by transferring management to conservation groups or state or local agencies. These funds aim to generate positive environmental impact such as cleaner air and water, carbon sequestration, reforestation, and biodiversity conservation. Figure 8 shows the top five impact objectives targeted by the sample's timber-focused funds (funds may target more than one objective). Other impact objectives not depicted in Figure 8 include sustainable farming practices and job creation for rural communities and minorities. On average, timber funds in the sample track four to five metrics to gauge progress toward their impact objectives, though a handful track significantly more metrics.

Figure 8. Timber – Top Impact Objectives and Selected Metrics for Tracking Progress
n=18



Note: Funds may target more than one impact objective.

METRICS FOR TRACKING PROGRESS TOWARD THESE OBJECTIVES	
IMPACT OBJECTIVE	METRICS USED TO TRACK PROGRESS
Biodiversity conservation	Several funds track the number and type of rare species present at year-end on a given piece of land or the number of state and federal endangered species protected.
Land conservation and rehabilitation	Eleven of these 18 funds measure metrics such as the number of acres of land preserved or number of conservation and restoration projects completed in a given year.
Sustainable timber production	Funds focused on sustainable timber production track the number of acres of timberland under a certain type of certification. Many certify the forests they manage to international sustainable forestry standards such as FSC and SFI certification. Sixteen of the 18 timber-focused funds seek FSC certification, and 15 seek SFI certification.
Reduction in carbon emissions	To measure the reduction in carbon emissions, funds measure metrics such as the tons of CO_2 sequestered or number of carbon credits sold.
Water resources management	These funds track metrics such as the number of acres of preserved/restored wetlands or number of feet of streams present.

REAL ESTATE

Real estate investing funds with an impact lens typically focus on either green real estate or affordable housing (or both). Funds focused on green real estate incorporate sustainability principles into their value creation strategies—for example, developing or retrofitting properties to be energy efficient and environmentally sustainable. These enhancements have the potential to offer sale price premiums and reduce operating and maintenance costs. Funds focused on affordable housing often make units available only to residents of a certain income range in relation to the local area median income, to ensure that they serve lower-income residents.

CHARACTERISTICS

The real estate impact investing funds in the sample represent a much smaller subset of the broader private real estate investing sector than do timber impact investing funds of their respective universe. Funds in the Real Estate Impact Investing Benchmark raised $4.7 billion in assets between 2004 and 2014 while funds in the comparative real estate universe represent nearly $500 billion in total capitalization (Figure 9).

Figure 9. Real Estate Characteristics
As of June 30, 2016

	REAL ESTATE IMPACT INVESTING BENCHMARK		COMPARATIVE REAL ESTATE BENCHMARK	
	COUNT (N)	CAPITALIZATION ($M)	COUNT (N)	CAPITALIZATION ($M)
VINTAGE YEAR				
2004–2006	3	1,013	194	139,222
2007–2010	7	2,309	230	173,788
2011–2014	10	1,335	192	185,947
FUND SIZE ($M)				
≤50	6	209	31	892
50–100	---	---	39	2,921
100–250	8	1,430	116	19,853
250+	6	3,018	430	475,292
SUB-SECTOR FOCUS				
Diversified Real Estate	12	3,973	478	430,468
Residential Multi-Family	5	318	33	10,666
Other	3	365	105	57,822
GEOGRAPHIC FOCUS				
US	12	2,559	390	312,052
Developed ex US	4	924	127	133,698
Emerging Markets	4	1,175	99	53,207
TOTAL	20	4,657	616	498,957

Though total capitalization was spread relatively evenly among vintage years in both the impact and comparative real estate universes, by fund count the impact dataset skews much smaller and less mature. Half of the 20 impact real estate funds analyzed were raised in 2011 or later versus just 31% of the comparative real estate universe. The median size of a real estate impact investing fund raised prior to 2009 was $376 million versus $168 million in 2009 or later. While the comparative real estate universe also saw a drop in median fund size pre- and post-2009, $459 million to $381

million, the decline was decidedly less marked than in the impact space. This trend may be attributable, in part, to the challenging fundraising environment for real estate strategies after the onset of the global financial crisis and the collapse of the housing market.

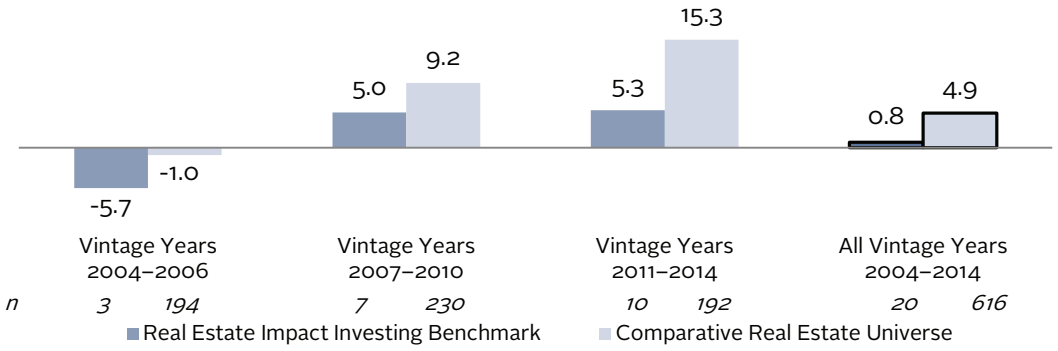
Consistent with funds in the comparative universe, most real estate impact investing funds pursue a diversified strategy—meaning they invest in multiple property types including residential, retail, industrial, and office properties, among others. The only notable area of concentration by subsector in the impact sample set is in strategies dedicated to investments in residential multi-family properties—25% of the impact funds were concentrated in this area versus just 5% of funds in the comparative universe. This focus on multi-family properties is not surprising given that many real estate impact investing funds invest around the themes of affordable housing and/or community development.

PERFORMANCE ANALYSIS

Pooled IRR by Vintage Year

Funds in the Real Estate Impact Investing Benchmark underperformed funds in the comparative real estate universe across vintage year groupings. Since inception to June 30, 2016, real estate impact funds produced a pooled IRR of 0.8% versus 4.9% for comparative real estate funds (Figure 10). Funds raised from 2004 to 2006 were the worst performers, with both the impact and comparative universes generating negative returns; this poor performance from both universes is not surprising given that funds of these vintages came of age during the global financial crisis, which was particularly damaging to the real estate sector.

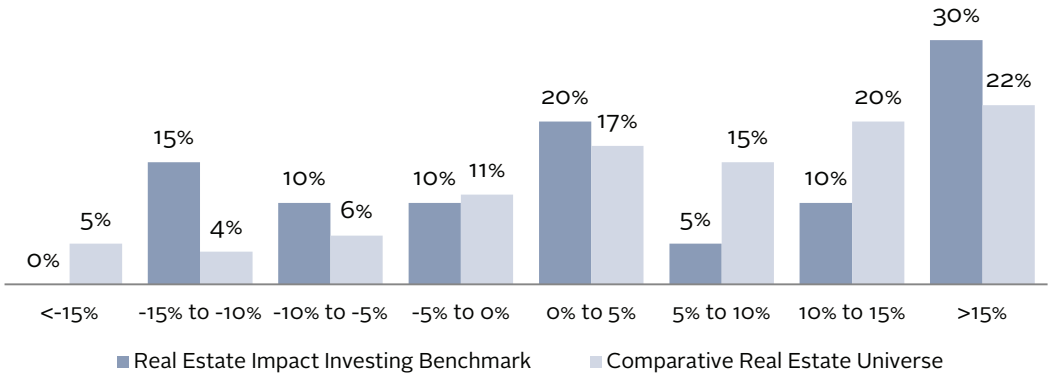
Figure 10. Real Estate – Pooled IRR (%) by Vintage Year
As of June 30, 2016



Distribution of Returns

The distribution of returns for both impact funds and the comparative universe is skewed to the right, rather than normally distributed. A larger proportion of the impact funds (by count) generated returns in excess of 15% than in the comparative universe (Figure 11), although as seen in Figure 1, the top return for the comparative universe was higher than the top return for the real estate impact funds. No funds in the impact dataset returned below -15% versus 5% of comparative funds; however, a larger proportion of impact real estate funds displayed negative returns overall: 35% of impact funds analyzed had a net IRR below 0% versus 26% of funds in the comparative universe.

Figure 11. Real Estate – Distribution of Fund IRRs Net to LPs
As of June 30, 2016

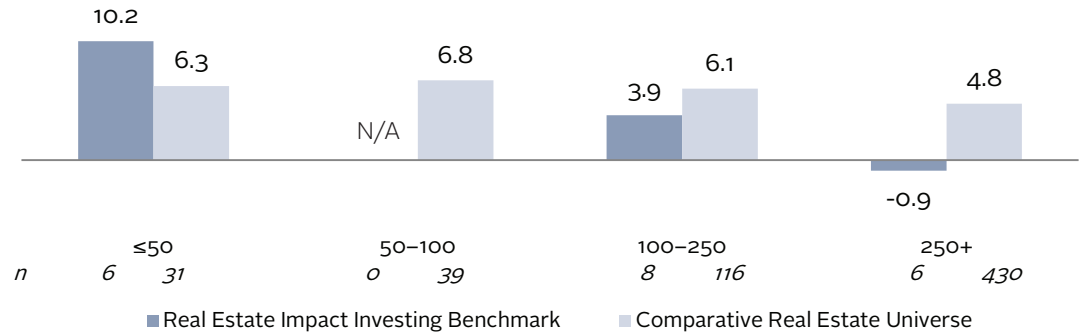


Note: Percentage of funds in each IRR performance group is based on fund count.

Pooled IRR by Fund Size

One drawback of the standard, pooled IRR methodology used to calculate benchmark returns is that the performance of small funds can be overwhelmed by the performance of larger ones. The distribution in Figure 11 suggests that, although real estate impact investing funds underperformed on average, several smaller, individual funds have generated strong returns. An analysis of the two universes by size (Figure 12) confirms this hypothesis: while larger real estate impact investing funds have underperformed, those under $50 million in assets under management—which constitute 30% of the sample by count but only 5% by capitalization—returned 10.2% versus 6.3% for real estate funds of the same size in the comparable universe.

Figure 12. Real Estate – Pooled IRR (%) by Fund Size ($M)
As of June 30, 2016

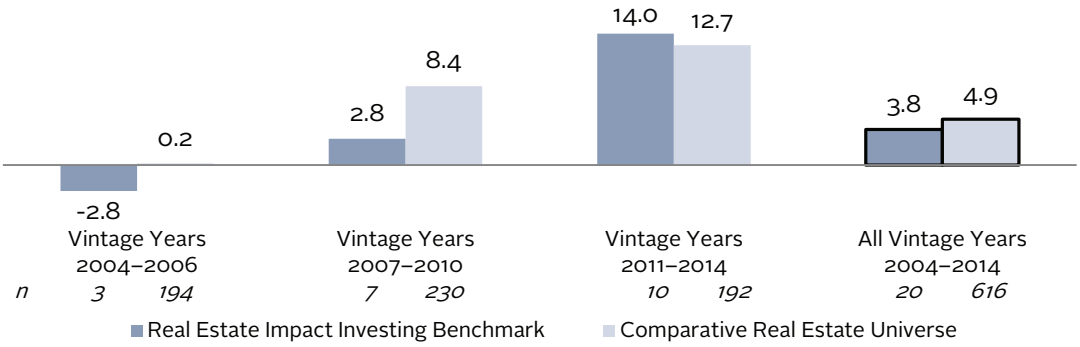


Equal-Weighted IRR by Vintage Year

To control for the effect of fund size, the following analyses look at the performance of the two datasets using an equal-weighted, rather than pooled, calculation.[18] When each fund is given an equal weight in the analysis (Figure 13), the Real Estate Impact Investing Benchmark has returned 3.8% since inception to June 30, 2016, versus 4.9% for the comparative universe, a much smaller differential than when using a pooled calculation. Impact funds in earlier vintages still demonstrate underperformance, but those raised since 2011 lead the comparative universe by a small margin.

18 The equal-weighted IRR calculation seeks to normalize each individual fund's contribution to the return calculation by scaling the cash flows and NAVs of each fund by that fund's commitment amount. Then, scaled cash flow streams are pooled, with each fund now contributing equal weight to the total calculation.

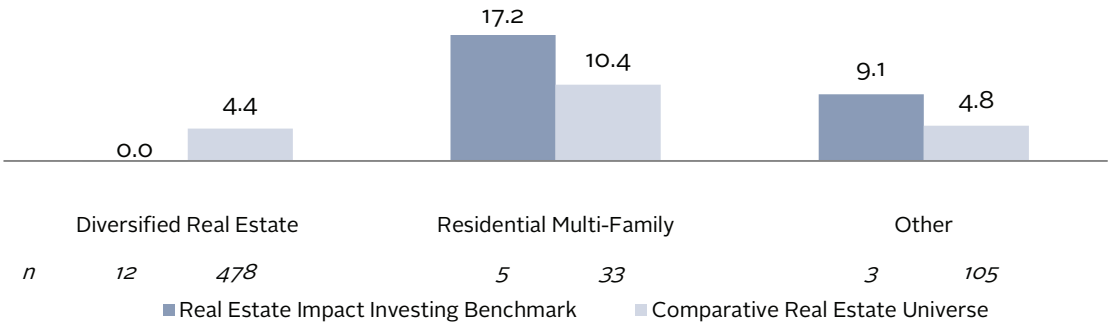
Figure 13. Real Estate – Equal-Weighted IRR (%) by Vintage Year
As of June 30, 2016



Equal-Weighted IRR by Sub-Sector

Though the majority of both the impact and comparative real estate universes pursue diversified investment strategies, the Real Estate Impact Investing Benchmark is significantly more concentrated in the residential multi-family sub-sector than is the comparative benchmark (Figure 9). For both groups of funds, residential multi-family investments outperformed (Figure 14). In fact, four of the five top-performing funds in the Real Estate Impact Investing Benchmark overall were focused on this sub-sector. Post–global financial crisis, this sector has been one of the better performers in the real estate universe generally, and all five residential multi-family funds in the impact benchmark were raised in vintage years 2011–13. Given earlier observations on the strong performance of smaller real estate impact funds, it is worth noting that four of these funds were less than $50 million in size, and they were also among the top-performing Real Estate Impact Investing Benchmark funds.

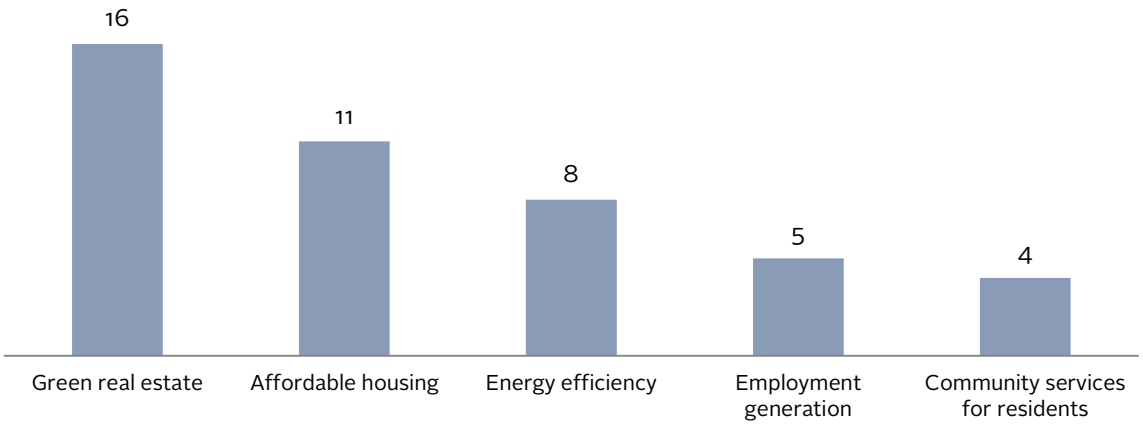
Figure 14. Real Estate – Equal-Weighted IRR (%) by Sub-Sector
As of June 30, 2016



IMPACT OBJECTIVES AND METRICS

The 20 real estate–focused impact investing funds in the sample focus primarily on green real estate or affordable housing, and their impact objectives tend to be both environmental and social: 15 of the 20 funds concentrated in real estate target both social and environmental impact objectives, while three target only social objectives and two target solely environmental impact objectives. As shown in Figure 15, the most common impact objectives pursued are green real estate (16 funds) and affordable housing (11), followed by energy efficiency (8) (funds may target more than one objective). Additional social impact objectives include employment generation and the provision of social services for building residents. To measure progress against these impact objectives, real estate–focused impact investing funds employ the metrics summarized in Figure 15.

Figure 15. Real Estate – Top Impact Objectives and Selected Metrics for Tracking Progress
n=20



Note: Funds may target more than one impact objective.

METRICS FOR TRACKING PROGRESS TOWARD THESE OBJECTIVES	
IMPACT OBJECTIVE	METRICS USED TO TRACK PROGRESS
Green real estate Energy efficiency	The top metrics for funds that target green real estate include gallons of water conserved, watts of energy conserved, and tons of CO_2 emissions reduced. Seven of 11 funds that provided data on certifications noted that they seek buy or develop LEED-certified buildings. Leadership in Energy and Environmental Design (LEED) is managed by the US Green Business Council, and provides various certifications that speak to a building's environmental sustainability. Four of these 11 funds purchase or develop buildings in line with Energy Star standards, which certify energy-efficient consumer products produced in the United States, such as appliances and computer products, and generally use 20%–30% less energy than what is required by federal standards. Funds that indicated targeting energy efficiency track many of these same metrics and adhere to LEED and Energy Star certifications, among others.
Affordable housing	Four funds targeting affordable housing track metrics such as the number of units set aside for low-income residents. Five funds track the number of jobs created as a result of their investment, primarily in low-income or disadvantaged communities.
Employment generation	These funds track the number of jobs created as a result of their investments.
Community services for residents	These funds track metrics such as the number of residents provided with social services.

INFRASTRUCTURE

The majority of infrastructure impact investing funds in the dataset have a significant or sole focus on investments in renewable energy generation—particularly wind and solar—which could arguably be considered a distinct sector given the unique risks and opportunities it presents in comparison to traditional infrastructure investments. Therefore, unlike impact investing strategies in timber and real estate, infrastructure impact investments cannot be viewed as simply an offshoot or subset of a broader sector.

Renewable energy infrastructure funds have only been in existence since the early 2000s, when the technologies underpinning the generation capacity of renewable energy projects began to be applied on an industrial scale. At that point, many of the technologies on which the value of these assets relied were still in development and had yet to be proven in commercial applications. This technology risk, combined with legal and regulatory uncertainties surrounding renewable energy policy and development, resulted in heightened risk/return characteristics for funds of these early vintages, particularly when compared to traditional infrastructure investments, which are typically characterized by low-yielding, stable return profiles.

The renewable energy sector has evolved significantly in the past ten years. Project costs have fallen, the technologies underpinning many of these strategies have been tested, and the legal and regulatory environment in many countries has progressed to the point where the idiosyncratic risks associated with funds raised a decade ago have been mitigated significantly. While the track record is still developing, core infrastructure impact investing funds with exposure to the renewables sector raised in more recent years should be expected to behave more similarly to traditional core infrastructure assets—offering investors limited downside risks with predictable return streams guaranteed by long-term, legally binding offtake agreements, and a lower, more stable return profile.

For all of these reasons, the research team does not view the Infrastructure Impact Investing Benchmark as having a comparable universe at present. CA's traditional, non-impact Infrastructure and Private Equity Energy benchmarks are included in the exhibits that follow, but they are not intended to be used as direct comparisons. Rather, they serve as useful points of reference given that (1) renewable infrastructure is expected to exhibit a risk/return profile similar to conventional infrastructure going forward and (2) infrastructure impact investments are often seen as a substitute for traditional, fossil fuel–based energy investments from an energy-generation standpoint, though not from a portfolio construction perspective.

Not all infrastructure impact funds invest purely in renewable energy. Infrastructure is a broad category and impact investments in the sector are also focused on transportation (e.g., hybrid/electric vehicle charging infrastructure), utilities (e.g., wastewater treatment), and social infrastructure (e.g., health care, education, and recreation facilities), among others.

CHARACTERISTICS

By count, funds in the Infrastructure Impact Investing Benchmark are distributed relatively evenly across vintage year groups, though with a slight skew toward younger funds—seven of the 17 funds in the sample were raised in 2011 or later versus five each in 2005–07 and 2008–10 (Figure 16). Funds in the Infrastructure Impact Investing Benchmark skewed larger than funds in either the timber or real estate impact universes—35% of funds raised more than $500 million in total capitalization. Fund sizes tend to be larger in the infrastructure sector in general due to the capital intensity of underlying projects. The average fund size in the traditional Infrastructure Benchmark was $1.4 billion, versus $800 million and $300 million for the traditional real estate and timber universes, respectively.

Figure 16. Infrastructure Characteristics
As of June 30, 2016

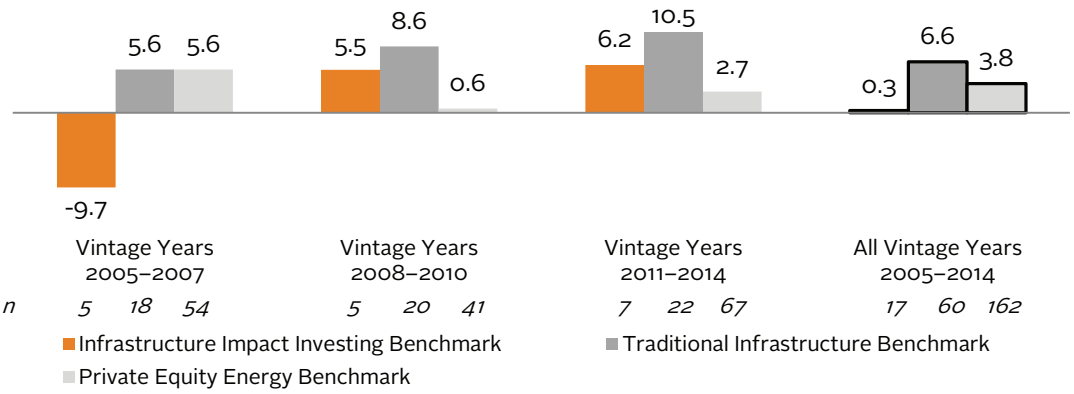
	INFRASTRUCTURE IMPACT INVESTING BENCHMARK	
	COUNT (N)	CAPITALIZATION ($M)
VINTAGE YEAR		
2005–2007	5	2,448
2008–2010	5	4,258
2011–2014	7	2,383
FUND SIZE ($M)		
≤100	3	159
100–250	3	382
250–500	5	2,057
500+	6	6,491
SUB-SECTOR FOCUS		
Diversified	6	1,648
Renewable Energy	11	7,441
GEOGRAPHIC FOCUS		
US	8	6,227
Developed ex US	5	1,428
Emerging Markets	4	1,435
TOTAL	17	9,089

In terms of fund focus, the majority of infrastructure impact investing funds by both count and capitalization were focused purely on investments in alternative energy, which includes wind, solar, hydroelectric, and waste-to-energy projects, among others. Six funds in the sample, representing just 18% of assets, pursue a diversified infrastructure strategy. These strategies are invested in other infrastructure assets including transportation, utilities, and social infrastructure, though often have significant exposure to alternative energy as well.

Pooled IRR by Vintage Year

When viewed against traditional infrastructure and private equity energy benchmarks—which are not put forth as points of direct comparison today, but rather as familiar points of reference—the Infrastructure Impact Investing Benchmark returned 0.3% since inception to June 30, 2016, versus 6.6% for traditional infrastructure and 3.8% for private equity energy funds (Figure 17). Much of the infrastructure impact fund performance is driven by funds launched between 2005 and 2007, which returned -9.7% net to LPs, significantly lower than returns from traditional infrastructure and energy funds raised in the same period. As noted earlier, renewable energy funds of this vintage took on more technology and regulatory risk than later funds given the nascent nature of the sector at the time. Indeed, four out of the five lowest-performing funds in the impact dataset were launched in this period. Infrastructure impact investing funds of later vintages (2008–10 and 2011–14) show stronger performance, besting private equity energy funds launched in the same period.

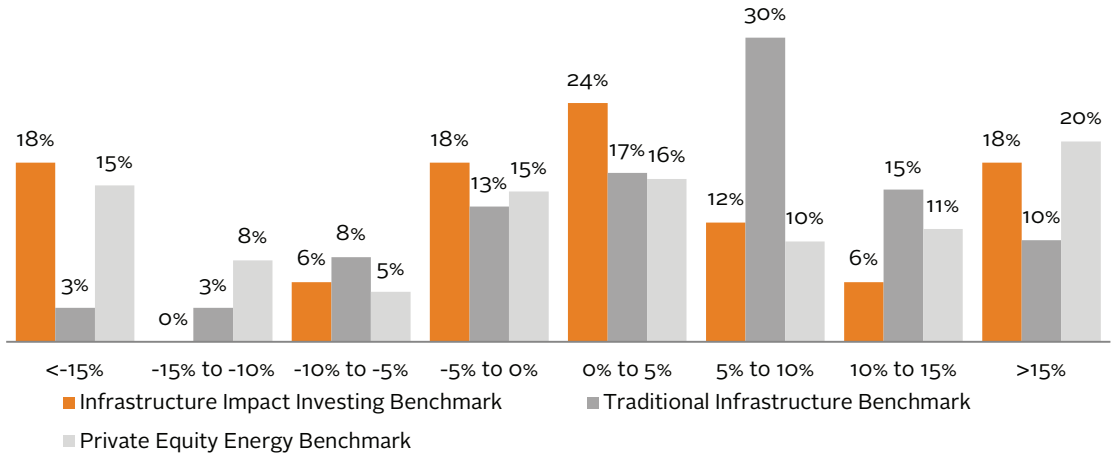
Figure 17. Infrastructure – Pooled IRR (%) by Vintage Year
As of June 30, 2016



Distribution of Returns

An analysis of the distribution of returns of the Infrastructure Impact Investing Benchmark versus traditional infrastructure and private equity energy funds (Figure 18) shows a wider dispersion in performance among infrastructure impact investing funds and PE energy funds than traditional infrastructure funds. Traditional infrastructure funds display more concentration—30% of funds returned between 5% and 10% net to LPs—with a relatively normal distribution. Both impact infrastructure and PE energy funds, by contrast, exhibit more upside capture, with nearly 20% of funds in both datasets returning a net IRR in excess of 15%, but also more downside risk, with more than 40% of funds in both datasets generating negative returns over the full time period.

Figure 18. Infrastructure – Distribution of Fund IRRs Net to LPs
As of June 30, 2016

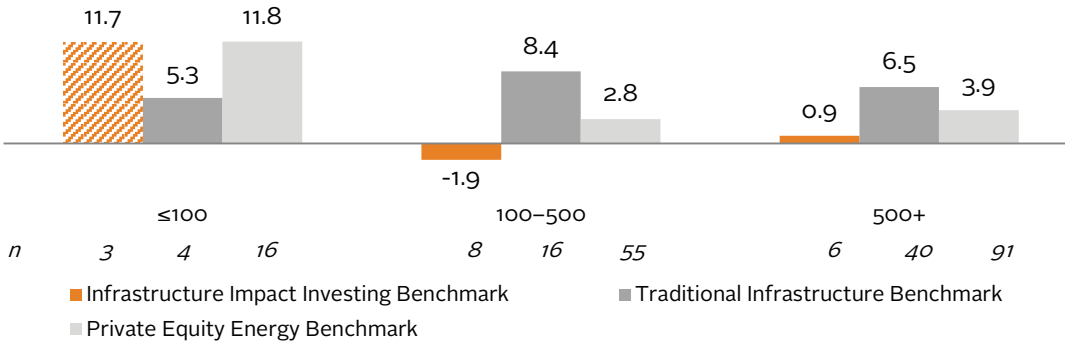


Note: Percentage of funds in each IRR performance group is based on fund count.

Pooled IRR by Fund Size

An analysis of the returns of funds in the Infrastructure Impact Investing Benchmark by fund size reinforces a trend witnessed across private equity and venture capital impact investing funds, as presented in the 2015 report[19] focused on these funds, as well as in the timber and real estate sectors studied in this paper: smaller impact investing funds have had stronger performance than larger funds (Figure 19). Though the sample size was small, infrastructure impact investing funds under $100 million in capitalization handily outperformed larger funds in the sample, returning 11.7%. We note that in addition to the small number of funds in this category, two were raised in the most recent vintage years, so performance may evolve over time.

Figure 19. Infrastructure – Pooled IRR (%) by Fund Size ($M)
As of June 30, 2016



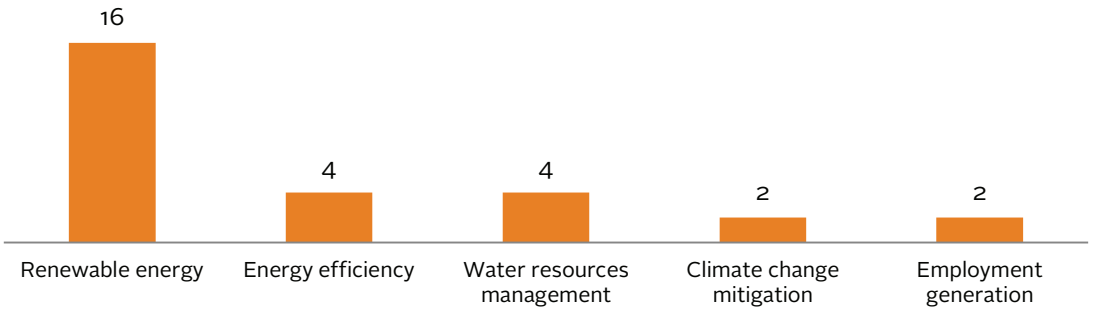
Note: The infrastructure impact investing benchmark includes only three funds of under $100 million and two of these were raised in recent years. The small number of funds coupled with the immaturity of the funds suggests that the IRR for funds in this size segment could change significantly over time.

19 Please see Jessica Matthews et al., "Introducing the Impact Investing Benchmark," Cambridge Associates and GIIN, 2015.

IMPACT OBJECTIVES AND METRICS

Infrastructure-focused funds in the dataset invest primarily in clean energy generation projects or facilities, such as solar, wind, and hydro-electric energy. Unlike the two other impact sectors we've discussed, most funds in the infrastructure impact benchmark focused on only one impact objective: 16 of 17 funds target increased renewable energy generation (Figure 20). Additionally, four funds target energy efficiency, four target water resources management, two target climate change mitigation, and two target employment generation. To measure progress against these impact objectives, infrastructure-focused impact investing funds employ the metrics summarized in Figure 20.

Figure 20. Infrastructure – Top Impact Objectives and Selected Metrics for Tracking Progress
n=17



Note: Funds may target more than one impact objective.

METRICS FOR TRACKING PROGRESS TOWARD THESE OBJECTIVES	
IMPACT OBJECTIVE	METRICS USED TO TRACK PROGRESS
Renewable energy usage Energy efficiency Climate change mitigation	The funds focused on renewable energy usage, energy efficiency, and climate change mitigation track metrics such as megawatts of renewable energy produced and megawatts of CO_2 emissions reduced.
Water resources management	Those funds that aim to impact water resources management track the amount of water saved, in cumulative cubic meters, or the acres or feet of water replenished back to aquifers.
Employment generation	These funds track the number of jobs created as a result of their investments.

CHALLENGES & CAVEATS

In the discussion of each sector we noted, where applicable, limitations of each analysis due to our small sample or other factors. In this section we discuss broader challenges in creating this dataset and general caveats to these findings.

DATA COMPILATION CHALLENGES

Private investment benchmarking can be a challenging exercise even in established private market segments. Creating and analyzing benchmarks for a younger, emerging portion of the market such as impact investing presents an additional layer of complications. Difficulty acquiring private fund performance data and strict inclusion criteria limited our ability to amass a large dataset.

- **Difficulty Acquiring Data.** To be included in this dataset, fund managers were required to submit unaudited quarterly and audited annual financial statements since inception for each relevant fund. This information is typically readily available to limited partners (LPs), but for some smaller managers, gathering and distributing the data can be too cumbersome. Furthermore, to be included in the benchmarks, fund managers must report net asset values at fair value (rather than at cost). Due to the fixed nature of real assets investments, fair value reporting is less widespread among real assets funds than other private investment strategies. Failure to meet either data submission requirements and/or reporting standards resulted in the exclusion of several willing participants.

- **Strict Selection Criteria.** To maintain the integrity of these benchmarks from both financial and impact perspectives, CA and the GIIN worked collaboratively throughout the data collection phase. Inclusion criteria were refined over time to ensure that all included funds were dedicated to creating positive social or environmental impact alongside competitive financial returns.

  The definition of impact investing guiding this research was simple and straightforward—investments made with the intention to generate measurable social and/or environmental impact alongside a financial return. These benchmarks do not include funds that some may consider to be inherently impactful based solely on their investment portfolio; rather, the intent of the fund manager was a key determinant. In addition, funds that only sought to encourage environmental, social, and governance policies within their portfolio companies were also excluded. Such policies may certainly generate societal benefits, but they alone are not enough to indicate intent to create social or environmental impact.

  In the end, rigidly enforced selection criteria made these benchmark datasets—and the acceptable universe of funds—markedly smaller. As noted earlier, the initial outreach list included over 300 funds; 129 of these funds met the inclusion criteria and 55 were willing and able to submit their data. While this approach preserved the integrity of the data from an impact perspective, it rendered the task of splicing the data, controlling key variables, and deriving conclusions more difficult.

DATA ANALYSIS CAVEATS

The analysis we presented is subject to many of the same caveats as any performance study, including: survivorship and self-selection bias, a younger performance record, imperfect segmentation of strategies, and the typical limitations that plague small datasets. These caveats are unavoidable at this stage, and while they indicate that certain portions of the data must be interpreted cautiously, as was discussed in each section, the data presented still contain insight and value for impact investing practitioners.

- **Survivorship Bias.** Survivorship bias is based on the notion that poor-performing funds will eventually drop out of the benchmark and cease data submissions, which, over time, biases performance upward as only the strongest performers remain in the dataset. However, we have no reason to believe that survivorship bias will skew the impact investing dataset differently than it would skew any of CA's other private investment benchmarks.

- **Self-Selection Bias.** Typically, this bias is manifested through managers of poor-performing funds declining to submit their data to CA's database. As a result, any benchmark may represent a better-performing sample of funds than the actual universe. However, it is possible that poor-performing funds—impact or not—are more likely to submit their data to CA, as poor performers may have a stronger motivation to build a presence on CA's database and gain free visibility to CA's clients and investment directors. Self-selection bias could push performance in either direction; our assumption is that a random sample of funds submitted data for these benchmarks.

- **Evolving Performance Record.** The performance of private investment funds is dynamic. Unlike public stock portfolios that often have significant overlap with both market indexes and peer strategies, private funds often have unique performance drivers relative to peers. Furthermore, performance cycles for private funds are long and constrained by a defined end-point. According to CA research, private equity and venture capital funds generally do not settle into a final performance quartile within their peer universes until six to eight years after inception.[20] In fact, over 80% of private real estate and private natural resources funds launched between 1995 and 2005 were in at least three different quartiles before settling. The dataset of impact investing funds analyzed in this paper—particularly in the infrastructure sector—is nascent relative to the broader real assets universe. This issue should be somewhat mitigated going forward, as the impact investing space, and therefore these benchmark datasets, mature over time.

- **Imperfect Segmentation.** The dataset was divided into the three broad sectors (timber, real estate, and infrastructure) analyzed based on commonalities between risk/return profiles and the underlying investments of participating impact funds. However, a number of funds pursued niche investment strategies that did not align perfectly with one of the three sectors. In such instances, funds were grouped within the sector determined to have the most similar drivers of risk and return. For example, a small number of funds invested in agriculture were included in the Real Estate Impact Investing Benchmark based the importance of land value appreciation and property improvements in driving returns. Similarly, a small number of funds focused on mitigation banking were included in the Timber Impact Investing Benchmark since they pursue a conservation-oriented strategy centered around sustainable natural resource management. In the future, these niche strategies will be viewed independently as the sample size grows large enough to enable meaningful analysis.

- **Limits of a Small Dataset.** One side effect of a small sample size is that the larger constituent funds have a disproportionate influence on pooled performance calculations. As the industry and this dataset grow, the outsized performance influence—either positive or negative—of individual funds will begin to wane and the ability to draw more meaningful conclusions from more segmented data will increase. The size of the dataset also inhibits the ability to control for multiple variables.

20 Jill Shaw et al. "A Framework for Benchmarking Private Investments," Cambridge Associates Research Report, 2014.

CONCLUSION

Beyond their important role in portfolio construction, real assets investments have the potential to generate positive social and environmental impact. A broad and diverse asset class encompassing vital industries such as real estate, timber, agriculture, telecommunications, roads, railways, energy, and water, real assets provide the physical foundations of a functioning society. In an increasingly resource-constrained world, managing real assets with a sustainable and positive impact-oriented lens is of growing interest. Real assets impact investments can channel much-needed capital to physical and natural assets, helping to ensure that they are resilient to climate and demographic shifts, are environmentally sustainable, and offer societal benefits to diverse segments of the population.

This research aims to shed light on opportunities in real assets impact investing and equip investors with information about the financial performance of timber, real estate, and infrastructure impact investments. Each sector's dataset will continue to evolve and become increasingly robust as existing funds mature and as more funds are added to the benchmarks over time. At this stage, given the limited sample size, it is difficult to reach definitive conclusions, but we can make some initial observations on the real assets impact investing landscape:

- **Market rates of return are attainable in real assets impact investing, but manager selection is paramount.** To achieve superior returns and risk management, rigorous due diligence in manager selection is critical in all investment decisions, including those related to real assets impact investments. The distribution of individual fund returns in each of the three sectors analyzed in this report is similar to the distribution of returns in conventional funds, reinforcing the assertion that market rates of return are achievable in impact investing, but manager skill remains a key factor driving performance—just as it is in conventional investing.

- **Fund managers can rigorously pursue both financial and impact objectives.** These benchmarks demonstrate that funds can pursue (and achieve) market rates of return while channeling capital to investments with the intention to generate measurable positive impact results. Among many other metrics, funds measure progress toward outputs such as reductions in CO_2 emissions, land and water conservation, and affordable housing units developed.

- **Impact timber funds in the dataset have outperformed comparative timber funds for the period analyzed.** While impact investments in real estate and infrastructure had pockets of both strength and weakness, impact timber funds outperformed the comparative universe in both our vintage year and fund size analysis. Over the full period analyzed, the Timber Impact Investing Benchmark returned 5.9% net to LPs versus 3.3% for funds in the comparative timber benchmark.

- **Based on a limited sample size, across all three sectors analyzed, smaller funds have had the strongest performance.** Impact timber funds that raised under $100 million (3 funds) returned 8.9%, besting larger funds. Similarly, impact funds under $50 million (6) were the strongest-performing group in the real estate sector, with a net IRR of 10.2%. Within impact infrastructure, funds under $100 million (3) were also the best performing, producing a net IRR of 11.7%. Importantly, two-thirds of the small funds in these three sectors were raised in vintage year 2011 or later, suggesting that the IRR may change over time.

- **Maturity is an important consideration in real assets impact investing.** Impact investments in timber and real estate are similar in structure and characteristics to their non-impact counterparts and, in some cases, have track records of similar length. Impact funds focused on infrastructure—particularly renewable energy infrastructure—and other assets whose success depends, in part, on advanced technologies, are relatively newer investment strategies with less evolved legal and regulatory guidelines. Investors should keep the maturity of each sector in mind when interpreting these findings and setting expectations for the future performance of funds.

This report launches the real assets impact investing benchmarks in timber, real estate, and infrastructure, which will allow investors to better measure and evaluate the performance of impact investing funds in these sectors. These benchmarks provide a critical tool for alleviating barriers to industry growth in an asset class that has the potential to generate significant tangible social and environmental impact. As the benchmarks are updated over time, the sample size will grow and more concrete conclusions will emerge. ■

APPENDIX 1: IMPACT FUND MANAGER PROFILES

TIMBER

This fund manager invests in US- and Canada-based assets, and has four funds in the benchmark of vintage years ranging from 2002 to 2014. The manager aims to generate primarily environmental impact through investments in sustainable timberlands and high-value conservation properties. It generates financial return through strategies such as selling conservation easements and carbon offset credits, harvesting timber, and mitigation banking, and generates impact by conserving biodiversity and land with high conservation value and rehabilitating fallow or low-value land. It seeks certification of its timberlands through the FSC and the SFI. The fund manager collects data on IRIS[21] metrics across its portfolio. These metrics capture information on topics such as the area of land that is managed or protected, uses of land, and volume of sustainable products sold. The specific IRIS metrics are:

Environmental Metrics

- Land directly controlled: sustainably managed (IRIS ID: OI6912)
- Operational certifications (third-party certifications, such as FSC and SFI) (IRIS ID: OI1120)
- Protected land area: permanent (IRIS ID: PI3924)
- Ecological restoration management area (IRIS ID: PI9556)
- Area of adjacent protected land (IRIS ID: PI5750)
- Units/volume sold: total (sustainably harvested wood products) (IRIS ID: PI1263)
- Area of trees planted: native species (IRIS ID: PI3848)
- Area of fresh water bodies present (on land managed by the fund manager) (IRIS ID: PI7170)
- Ecosystem services provided (IRIS ID: PD8494)

Social Metric

- Jobs maintained at directly supported/financed enterprises: total (IRIS ID: PI5691)

The manager collects much of this data through its baseline assessments and annual monitoring of lands with conservation easements. It produces an annual impact report for each fund for investors and investment advisors. For one fund during 2015, the manager reported that over 45,000 acres were permanently protected, over 150,000 metric tons of sustainably harvested wood products were sold, and almost 2,250 acres of native trees were planted. Of the 965,000 acres managed across all funds in the current and historical portfolio, 95% have been or are expected to be permanently protected.

Beyond reporting, this manager views the measurement and analysis of impact data as central to improving both its impact performance and its financial performance. It uses impact data to ensure that new investments are aligned with its investment thesis and for marketing and reputation-building that helps attract LPs and investees.

21 IRIS is the catalogue of generally accepted impact performance metrics managed by the GIIN.

This fund manager states that the practice of impact measurement and management in real assets investing has improved over the years as impact investing industry metrics expanded beyond microfinance to apply to a variety of different social and environmental impact themes, including sustainable natural resources. The manager hopes that coordination between different impact measurement standards will increase, as it believes that this would be beneficial for the industry.

REAL ESTATE

This fund manager has two funds in the benchmark of vintage years 2011 and 2013, which invest in US-based real estate assets. The manager aims to generate environmental and social impact through investments in new and retrofitted office, apartment, and mixed-use properties in urban areas. The manager specifically targets sustainability through the reduction of resources used and therefore invests in environmentally sustainable buildings. It also aims to create communities for its tenants and residents and contribute to the neighborhoods surrounding its buildings. The fund manager seeks LEED certification at the Gold and Platinum levels for its new developments, earned a Green Real Estate Sustainability Benchmark (GRESB) Green Star two years in a row, and is a certified B Corporation. Beyond seeking these certifications, the organization sees impact as an integral part of its organizational mission and has a proprietary system for measuring and reporting on impact. It collects data on several metrics to track progress on social and environmental impact:

Environmental Metrics

- Gallons of water saved (compared to similar properties)
- KWH of energy saved (compared to similar properties)
- Metric tons of carbon emissions avoided (compared to similar properties)

Social Metrics

- Number of locally owned vendors for building operations
- Number of minority/women owned vendors for building operations
- Number of affordable housing units (determined as a percentage of area median income)
- Number of jobs created
- Walk score (a score that measures walkability in the surrounding neighborhood)
- Bike score (a score that measures how accessible the surrounding neighborhood is for bicycles)

To track these metrics across all properties, the manager installs energy monitoring systems, conducts annual resident and tenant surveys, and requires building manager reporting on activities and operations. The fund manager augments these portfolio-wide data with qualitative examples of practices that enhance community and sustainability at some properties, such as the use of sustainable building materials, health and wellness options for residents and tenants, and periodic art installations. Additionally, longer anecdotes and photos of resident engagement initiatives around volunteerism and support for local charities are collected from a handful of properties. This information creates a holistic picture of the fund's social and environmental performance and is compiled in an annual impact report for investors. In a recent report, the manager informed investors that on average across all properties in the fund, it had 31% energy savings, 23% water savings, and 25% carbon emissions savings compared to similar properties; created over 1,500 union construction jobs; and developed 12% of residential units as affordable housing units—a percentage it hopes to increase in the coming years.

Reflecting on the state of the real assets impact investing sector, this fund manager is encouraged to see investors incorporating more targeted social impact objectives into their investment theses. The manager sees this as indication of growing sophistication in impact measurement practice in the sector.

INFRASTRUCTURE

This fund manager has one fund in the benchmark of vintage year 2014, which is invested in primarily US-based assets. The manager aims to generate environmental and social impact through investments mostly in renewable energy, but also in sustainable transportation, agriculture, land, and water. It believes that high rates of return are achievable in infrastructure impact investments, and it assesses the environmental impact potential of each investment, alongside the financial return potential, during due diligence. The manager invests in a variety of assets and establishes its impact thesis at the investment level, while tying the portfolio's impact together with three common themes: carbon emissions reductions, land improvement, and enabling economic growth and access to sustainability. It collects data on several metrics to track its progress:

Environmental Metrics

- Metric tons of carbon emissions avoided
- Acres of land improved (umbrella term for outputs such as area of solar panels installed over landfills and fallow land converted for sustainable agriculture)

Social Metrics

- Number of workers educated
- Number of jobs created
- Number of organizations served (through investments in companies that promote access to energy efficiency)

The fund manager collects the applicable metrics from each investee during semi-annual meetings, along with anecdotes that capture qualitative information. It also sets targets with the investees to align expectations for future impact. The impact data are compiled into a semi-annual investor report that highlights aggregated impact metrics across the portfolio and also provides further information on individual investments. This includes a description of the investment, its impact thesis, details of how impact is derived, and future impact goals. In a recent semi-annual report, the manager reported over 62,500 tons of CO_2 emission reductions, 435 acres of land improved, and 150 jobs created in a six-month period for ten investees.

One challenge noted by the manager is that not all investees have equal experience with measuring and managing impact. Often the reporting process requires informal coaching from the fund manager; one tactic used is to identify an employee at the investee level that can be the internal champion for impact measurement and management. The manager has found that renewable energy investments often already track impact metrics, while other types of infrastructure investments require more assistance in this area.

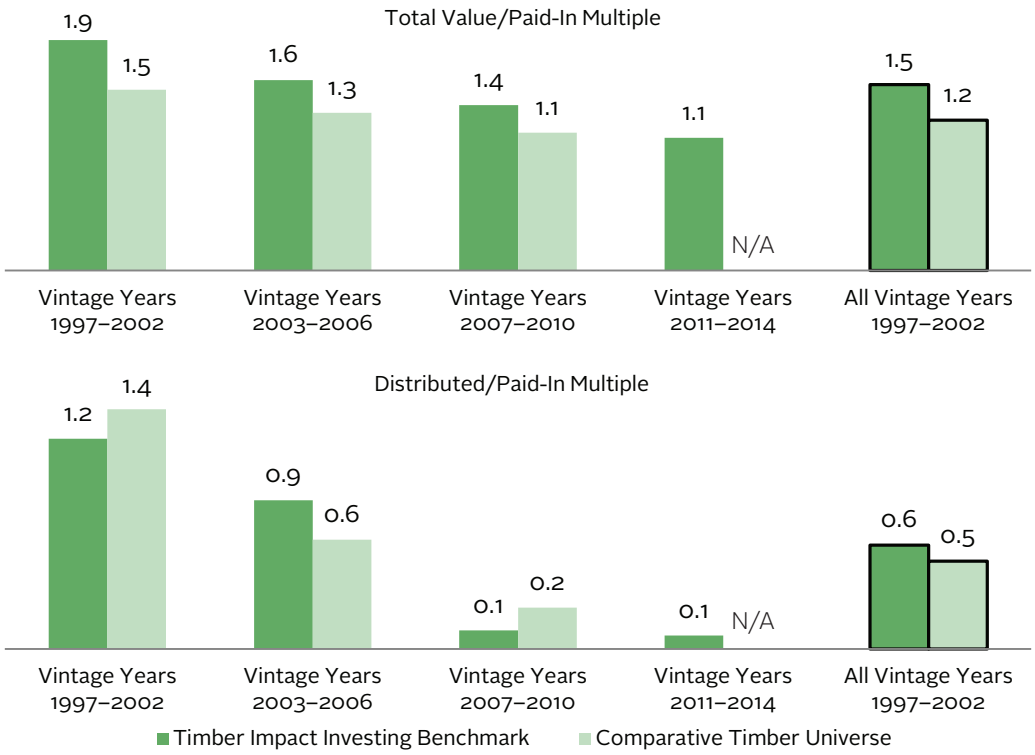
Reflecting on the broader real assets impact investing community, the manager is encouraged to see that more fund managers are tracking and reporting impact, noting that many are incorporating the data into some aspect of investment decision-making. However, the manager notes that there is still significant opportunity for greater standardization in impact measurement and management methodology. ■

APPENDIX 2: NET RETURN EXPECTATIONS BY SECTOR FOR TRADITIONAL REAL ASSETS FUNDS

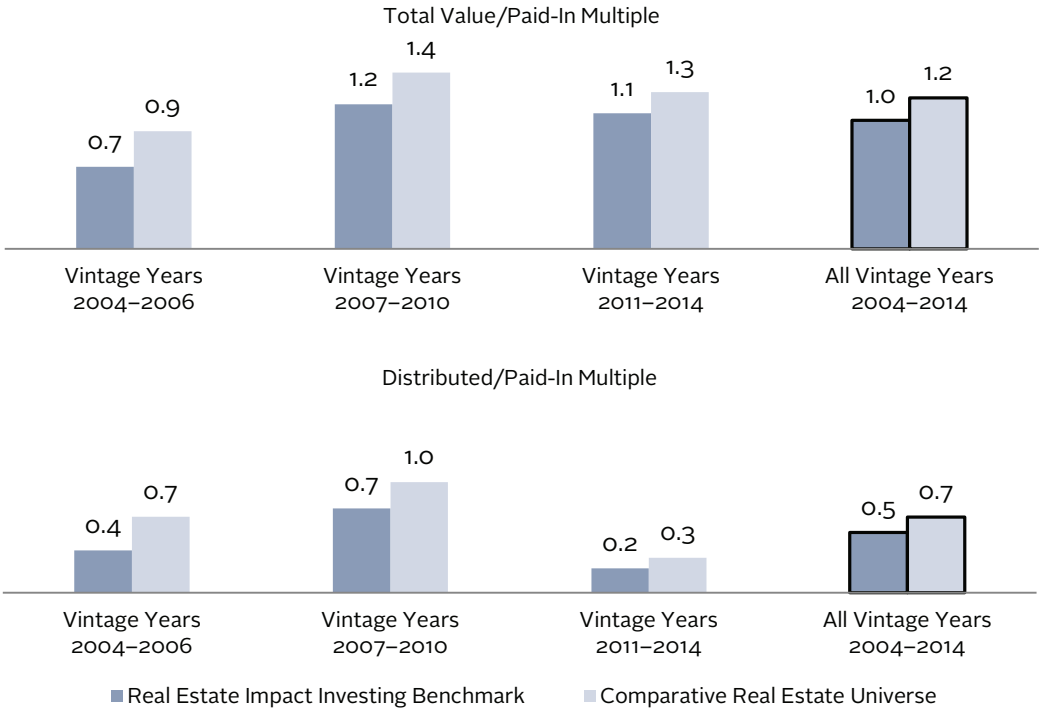
SECTOR	RISK PROFILE	DESCRIPTION	RISK LEVEL	TARGETED RETURN
Timber	N/A	Operating timberland assets	Low	3%–8%
Real Estate	Core/Core+	Fully leased, high-quality properties typically requiring limited repositioning	Low	8%–11%
	Value-Added	Properties typically requiring some re-positioning to enhance value	Moderate	11%–14%
	Opportunistic	Properties typically requiring major improvements or developments to enhance value	High	15%+
Infrastructure	Core/Core+	Operating assets subject to stable regulatory regimes with limited competition and long-term, contractual revenues	Low	6%–8%
	Value-Added	Greenfield projects with similar long-term characteristics to core infrastructure but with some element of development/ construction risk Operating assets with monopoly-like characteristics but exposed to some demand or market risks or with some development/ construction risk	Moderate	10%–12%
	Opportunistic	Assets not subject to regulation and with demand risks Emerging markets assets; typically greenfield projects in untested regulatory regimes with heightened political risk	High	14%+

APPENDIX 3: MULTIPLES BY SECTOR

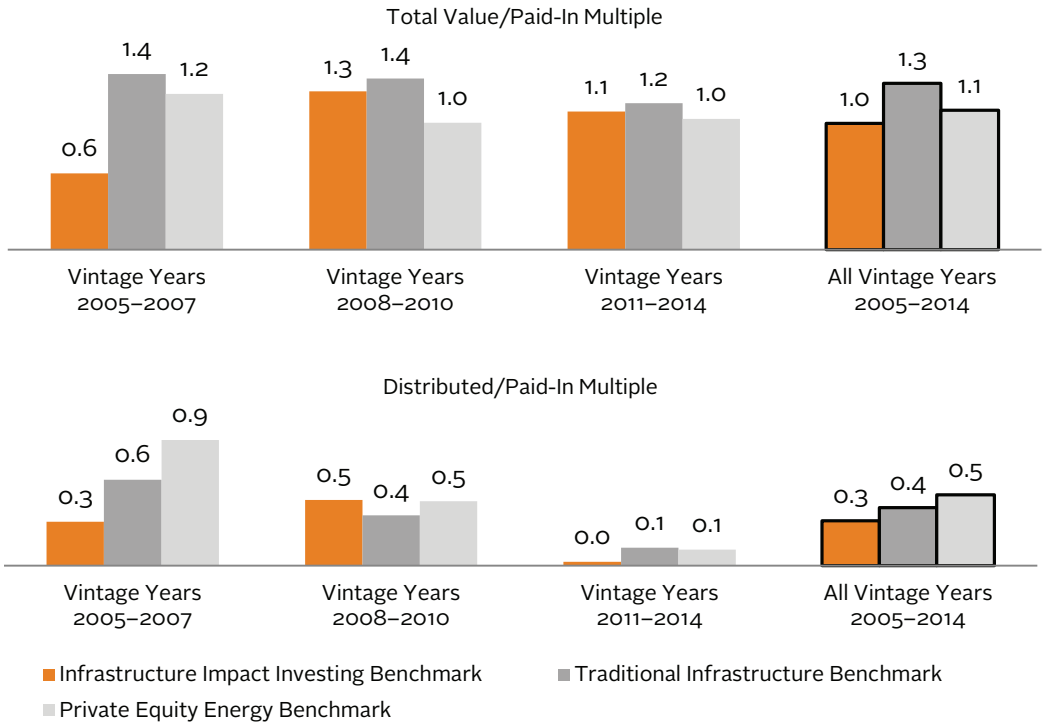
Timber Multiples by Vintage Year
As of June 30, 2016



Real Estate Multiples by Vintage Year
As of June 30, 2016



Infrastructure Multiples by Vintage Year
As of June 30, 2016



Infrastructure Impact Investing Benchmark
Traditional Infrastructure Benchmark
Private Equity Energy Benchmark

Jessica Matthews, Cambridge Associates

Kristine Leary, Cambridge Associates

Abhilash Mudaliar, Global Impact Investing Network

Aliana Pineiro, Global Impact Investing Network

Hannah Dithrich, Global Impact Investing Network