

Integration and Implementation of ESG Strategies for Real Estate Companies

by

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ABSTRACT

There has not been a time in the history of capitalism that real estate investors and managers care about “doing good” as today. While the sole pursuit of financial return has undoubtedly been the dominant driver for real estate investments, Environmental, Social, and Governance (ESG) considerations currently play an increasingly vital role in decision-making for real estate companies. However, as the regulations and capital markets around ESG are still in their nascent phase, the real estate industry has to rely on diverse sources of information and unverified assumptions to determine what, how, and why they should approach ESG.

This study examines how real estate owners, asset managers and developers approach asset-level and portfolio-level ESG issues through deep-dive interviews with ESG leaders of major market players. Based on the interviews, the paper identified various patterns of methodologies for how those companies 1) integrate ESG into their investment process, 2) define ESG targets and metrics, 3) collect and manage data, 4) prioritize among ESG strategy options, and 5) perceive the impacts of those practices.

Beyond providing a structured overview of the current ESG practices by major US real estate companies, the study also intends to unveil the rationales behind those efforts. By mapping the results across the companies’ attributes, including ownership structure, investment strategy, international exposure, and asset class, it also sheds light on potential explanations for the divergence of their perspectives.

Thesis Supervisor: Siqi Zheng, STL Champion Professor of Urban and Real Estate Sustainability

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Chapter 1 Research Overview

1.1 Introduction

Environmental, social, and governance (ESG) considerations are becoming increasingly important in the real estate industry. According to CBRE, 60% of respondents to CBRE's 2021 Global Investor Intentions Survey stated that they have already adopted ESG criteria as part of their investment strategies with Americas, EMEA and Asia-Pacific all recording a stronger focus on ESG issues than in previous years (CBRE, 2021, p3). Also, an EY survey shows that 88% of institutional investors solicited will likely pursue more sustainable and resilient investment opportunities following the pandemic (EY, 2021, p15).

Many real estate companies are also embedding ESG considerations into the asset lifecycle - from acquisition and development due diligence to leasing, operation, and disposal - to meet the increasing demand from these investors for sustainable and responsible business practices. 64% of real estate investment trust (REIT) by equity market capitalization has disclosed carbon targets in 2021, a sharp increase from 46% in the previous year (NAREIT, 2022). The upward trend can also be seen in other ESG efforts, such as assigning dedicated ESG staff and disclosing social engagement programs. There are various frameworks and standards that provide a structured way for companies to report on their ESG practices and for investors to evaluate the sustainability impact of their investments. For example, participants of GRESB (Global Real Estate Sustainability Benchmark) reached 1820 in 2020, representing a 20% year-over-year increase (GRESB, 2022).

In addition to the capital markets, existing and emerging regulations also drive ESG actions by real estate companies. Regulatory requirements related to ESG can vary by country and region. In the United States, the newly proposed rule by SEC (Securities and Exchange Commission) requires registrants to disclose climate-related risks and financial statement metrics (SEC, 2022). Some local governments have also passed regulations, such as New York City's Local Law 97 and Boston's Building Emissions Reduction and Disclosure Ordinance (BERDO), that mandate the reporting of building energy and emission data and impose penalties for buildings that do not meet certain sustainability standards.

In the European Union, the Sustainable Finance Disclosure Regulation (SFDR) requires real estate fund managers to disclose how sustainability risks in their investment process could potentially negatively impact the financial return of an investment. In EU, UK and Cap, reporting aligned with

Task Force on Climate-related Financial Disclosures (TCFD) will become mandatory for all fund managers in 2025 or earlier (FSB, 2022).

1.2 Landscape of ESG-related Studies

Given the increasing interest in ESG from real estate investors and managers, the amount of research on ESG in real estate has grown significantly in recent years. Many academic journals publish research on ESG in real estate, including the Journal of Sustainable Real Estate, the Journal of Real Estate Research, and the Journal of Real Estate Finance and Economics. These journals feature a wide range of research on topics such as the financial performance of ESG-focused real estate investments, the impact of ESG practices on real estate values, and the role of ESG in shaping real estate development and investment decisions.

Recent focus areas of research include social impact in real estate (Zaccack, 2020), the financial impact of healthy buildings (Sadikin, 2021), local regulations (Steele, 2020), sustainable construction (Masselink et al., 2020) and divergence of ESG ratings in a broader ESG context (Berg et al., 2019).

In addition to academic research, a number of industry organizations and think tanks publish research on ESG in real estate. For example, ULI, GRESB, NAREIT, EY, PwC, JLL, and CBRE have all produced reports and guides on sustainability and ESG in real estate.

1.3 Research Scope and Conceptual Framework

For real estate companies, ESG strategies can relate to the asset or the corporate operation. While both asset-level and corporate-level ESG strategies are essential for real estate companies, this paper focuses on **asset-level strategies** because they are unique and intrinsic to the real estate business and have been less studied by past research. For example, reducing carbon emissions from its industrial portfolio is related to the invested asset and, therefore, falls within the research scope. However, reducing carbon emissions from the business travel of its employees and the operation of its own headquarter building is not the focus because they are related to the corporate operation. In this paper, the definition of “asset-level” is inclusive of portfolio-level. It can also be referred to as “investment level” for non-direct investments.

This paper is intended to provide valuable insights for decision-makers in the real estate industry to create and implement asset-level ESG strategies. First, we aim to gain the perspectives of market leaders on

- how real estate companies integrate ESG into the investment process,
- how they define, measure, and implement asset-level ESG strategies, and
- what are the perceived impacts of those strategies.

Further, we seek a deeper understanding of whether companies of different categories have different perspectives on those questions. We use the following four dimensions as potential drivers to analyze the divergence of the perspectives of these companies:

- **Ownership structure:** whether a company is public or private
- **Investment strategy:** whether a company has substantial in-house development capacity ("development-focused") or not ("acquisition-focused") .
- **Geographical exposure:** whether a company has substantial investment and operation in non-US markets ("international") or not ("domestic").
- **Asset class:** Which property type a company specialized in.

1.4 Research Methodology

The study is based on both literature review and deep dive interviews. Major reviewed literature include the followings.

- ESG reporting of real estate companies
- Non-ESG company information including SEC filings, especially 10-K
- ESG frameworks and market reports by non-profit organizations and consultancies
- Past academic research

Deep dive interviews are conducted anonymously with senior leaders in ESG of major real estate companies. The interviewee profiles are outlined as follows.

- Total number of Companies: 9
- Ownership structure: 4 public (including 3 REITs) and 5 private
- Business type: 6 companies with in-house development functions, 3 financial investors

- Geography: 7 US headquartered and 2 globally headquartered with major operations in the United States
- Number of companies with major operations outside of US: 7
- Company size: Market leaders with higher market capitalization or AUM than industry average.
- Asset Class: Office, Industrial, Multifamily, Mixed-use, Senior Housing, Student Housing, Diversified
- Number of Persons interviewed: 12
- Function and Seniority: Mostly senior leader in ESG. (Sample title: Head of ESG, Senior Director of ESG, VP Global ESG, VP Sustainability, Head of Sustainability.)

Following the interviews, we took the following step to analyze the interview data.

- Transcribe the interviews into text data;
- Group together responses to the same topics from different companies;
- For each topic, identify the patterns presenting in the collected interview data;
- Map the patterns across the attributes of those companies to analyze the drivers for the divergence.

1.5 Limitations of Collected Data

While the study is intended to provide a general insights into how real estate companies define ESG strategies, there are several limitations of this research given the feasibility of data collection.

Limited scope: By interviewing only large companies, the sample data may not be representative of the broader real estate industry. Small and medium-sized companies may have different ESG strategies and challenges, and may not be included in the findings.

Self-selection bias: Large companies are more likely to have a dedicated head of ESG and are more proactive about their ESG efforts due to higher levels of stakeholder pressures and availability of resources.

Limited data size: The number of interviewed companies only represent a small portion of the players in the real estate industry.

Limited perspective: Interviewing only the heads of ESG may provide a narrow perspective as the individuals may not have visibility into the entire company and its operations. Also, senior leaders of ESG may be incentivized to emphasize the success over the shortfalls of their work. However, we kept the interviews anonymous to minimize the incentives for the interviewees to overstate positive impacts.

Limited exposure to certain asset class: The interviewed companies have limited exposure to hospitality, self-storage, data center, and other niche asset classes. However, companies specialized in the single-family housing are intentionally excluded.

Limited exposure to non-US markets: Although over half of all interviewed companies have significant international operations, the interviews are focused on the US market.

Chapter 2 – ESG Integration in Investment Process

2.1 Governance of ESG

While Governance primarily focuses on the corporate level for a real estate company, it provides underlying control to ensure that asset-level strategies are appropriately created and implemented. From the interview, we understand that governance structures and practices can vary across organizations. This section illustrates some Governance features presented in the companies that participated in this research.

Dedicated ESG team: All companies interviewed have a dedicated ESG team led by a sustainability professional known as Head of ESG or an equivalent title such as VP Sustainability, VP Global ESG, and Chief Impact Officer. The majority of ESG leaders interviewed are not part of the investment committee members and therefore do not have a voting right for investment decisions. In one company, the senior manager of ESG sits in all investment committee meetings for global and large-scale transactions. Another participant has an ESG person based in the UK who has voting right but does not actively participate in the investment committee in the US.

In addition, the ESG team plays an active role before the deal is brought to the investment committee or even only gets involved if ESG factors have a material impact on the value of the underlying property. The size of the ESG team varies by company. Among the companies interviewed, the largest ESG team has as many as 14 people in the US office alone. For companies with international operations, some ESG staff are based in global gateway cities such as London. The team sometimes consists of experts specialized in a particular area, including building certification and social impact. Like its environmental counterpart, the social team may be responsible for social initiatives and manage external consultants and NPO partners.

ESG Committee, Board & Auditor: An ESG Committee or Sustainability Committee in a real estate company is a group of senior managers responsible for overseeing the company's ESG efforts. If the company is the real estate arm of a major institutional investor, such as a pension fund, the ESG Committee may be at the institution level. For a public company, the board has the role of linking the ESG goals with the compensation of the CEO and other senior management. In addition, there are independent auditors who report to the board. Auditors should be completely independent of the business and free of conflict of interest so that they do not have the incentive to sugarcoat to protect their jobs.

Policy, Guidelines, and Procedures: As many companies are large in scale (some have over one thousand assets under their portfolios), it needs to establish a systematic approach to ensure the ESG practice is performed efficiently and effectively. The ESG team and the ESG Committee are often involved in developing ESG policies, also known as frameworks or guiding principles. Based on the policy, guidelines are created to address more specific topics, such as climate risks and data management. The ESG team also established the processes and procedures to integrate the ESG considerations in the lifecycle of a specific investment.

2.2 Non-Direct Investment Strategies

There are several strategies for a company to invest in real estate. One straightforward way is Direct Investment in private equity real estate, in which the investor may manage the property either by itself or through a joint venture (JV) with an operating partner. Real estate companies may also engage in other investment strategies, including indirect investment in private equity real estate (e.g., commingled funds), investment in public equity (listed securities), and debt (credit) investment.

How a company integrates ESG in its investment process differs by the type of investment strategy. Sections 2.3 to 2.5 will focus on Direct Investment, in which the investor has substantial control over the investment's lifecycle at the asset level. On the other hand, for non-direct investment strategies where companies do not have daily control over the management of the physical asset, Governance becomes the crucial factor in achieving the ESG objectives. Real estate investors need to design policies, procedures, and controls to ensure that the companies they invest in or partner with have the proper structure to make good decisions in the long term. Such Governance also plays an essential role in certain direct investments where the investor is the limited partner in the joint venture and has to rely on the general partner to manage and operate the property.

Here are some ESG practices the interviewees take for their non-direct investment strategies and JV direct investment strategy.

- Use a checklist for the target company to examine whether proper control (e.g., dedicated ESG professional) is in place.
- Review the existing ESG program of the target company.
- Assess the risks, including physical and transition risks, and the mitigation plan prepared by the target company.

- Provide guidelines for development and operating partners.

2.3 Acquisition and Development

From the interviews, we grasp how real estate companies integrate ESG considerations into the lifecycle of an investment, from due diligence to acquisition/development decisions, leasing, operation, and CapEx. We have identified the following practices presented within the interviewed companies.

ESG Checklist during Due Diligence: Four out of nine participants mentioned the use of a checklist or questionnaire designed to gather essential information related to ESG factors. The ESG team usually requests the transaction team to fill in the checklist. For joint venture transactions, the checklist is directly sent from the ESG team and includes information such as the presence of ESG staff, the quality of their ESG program, and the mitigation plan. Some participants use third-party consultants to help develop the checklist.

Climate Risk Assessment: For the acquisition of an existing property, climate risk assessment is usually performed by the ESG team during the due diligence phase. For carbon emission, a commonly used tool is the Carbon Risk Real Estate Monitor (CRREM), which informs the companies of the stranding year when an asset is no longer on track to meet the Paris Climate Goals of limiting global temperature rise to 2°C with ambition towards 1.5°C. Companies may download from the CRREM website a pathway model by city and enter 3-year energy consumption data for the underlying asset to generate the result. For energy intensity, companies can benchmark against GRESB though other more accurate benchmarks may be available in the upcoming years. It is also essential to assess the transition risks specific to the jurisdiction where the asset is located, such as alignment with SFDR in Europe.

CapEx Projection: Four participants mentioned the assessment and projection of CapEx as part of their involvement in the acquisition process. This process is to ensure the business plan and underwriting have taken into consideration climate risks, both transition risks and physical risks. A third-party consultant can be engaged to propose the required retrofit works, including HVAC upgrades, LED lighting and smart meters, and renewable energy integration. Coordination with the deal team is required to incorporate the budget and timing of those retrofit works into the underwriting model and the business plan.

Special Considerations for Development: For a development deal that involves the ground-up construction of a new building, the ESG team may be involved to provide expertise on building certifications such as LEED and WELL Building Standard. At the moment, none of the US-based companies interviewed has adopted embodied carbon assessment. However, some mentioned that they are trying to establish a baseline of embodied carbon for each asset class due to the increasing significance of disclosing and reducing scope three emissions. For JV deals, policies for third-party developers are provided.

Investment Committee (IC) Process: Although not all ESG teams have a voting right in the investment committee, all six participants with a traditional investment committee process require a dedicated ESG session in the investment memo (IM) or pitch deck. During the preparation of an investment memo, the ESG team provides the transaction team with essential information on ESG factors, including risks, performance standards, regulations, and social considerations. The memo also includes specific ESG commitments to the investors, such as GRESB ratings, net-zero carbon targets, and building certifications.

Voluntary Engagement of ESG Team: In one participating company, no dedicated ESG procedure is required for development deals due to the limited number of development projects. Similarly, another participant adopts an informal ESG process for single-asset acquisitions because the business mainly focuses on development. In both cases, the ESG team is engaged voluntarily at the discretion of the transaction team.

2.4 Asset Management - Leasing

In real estate, a classic barrier for executing asset-level ESG strategies is the separation of ownership and user, usually defined by a lease agreement. A traditional lease structure such as triple-net may create split incentives between the landlord and the tenants, preventing the landlord from benefiting from investment in sustainability projects such as energy retrofit. From the interviews, we understand how companies leverage leases as a tool to achieve ESG objectives.

Green Lease: Green leasing is the practice of realigning the financial incentives of sustainability or energy measures in lease documents (IMT, 2015). Several companies interviewed are experimenting with green leasing. One participant focusing on class-A offices has incorporated green lease language in approximately half of its active leases (Anonymous company, 2021), allowing the pass-through of costs related to energy efficiency improvement, building certifications,

and ENERGY STAR registration to the tenants. Other provisions also obligate the tenants to disclose energy use data by submetered high-intensity equipment. Compared to offices, the green lease is less penetrated for industrial properties where typically the tenant manages the utility directly.

Social Impact through Leasing: Companies can use the lease to address social considerations in addition to environmental issues. An office investor provides below-market rates and fit-out work management for minority business owners and simplifies the long and complicated legal document for smaller tenants to negotiate and execute.

Management Contract: In certain asset classes, such as senior housing and hotels, the real estate owner usually enters into a management contract with a third-party operator who manages the operation of the property. Like the lease agreement, ESG provisions like data disclosure can also be incorporated into the management contract. An interviewed senior housing investor and developer mandate quarterly reporting of utility data through the management contracts with operators.

2.5 Asset Management - Operation, CapEx & Disposal

After the investment decision is made, the ESG team is typically responsible for achieving the ESG objectives throughout the operation, capital expenditure, and disposal of the investment. The practices integrated into the asset management phase are summarized as follows.

Tracking of ESG Objectives: Primarily for companies using third-party property managers, the ESG team may provide asset management guidelines to property managers and make sure every asset has asset-level planning. The property management team must also respond to questionnaires covering various ESG factors that need to be incorporated into asset-level planning. Decarbonization audits may be performed annually to collect year-end data for GRESB benchmarking and ESG reporting.

Capital Expenditure: The head of ESG is often actively involved in budgeting operating expenses and capital expenditures (CapEx). One company mentioned that the ESG team has the approval right over capital budgets and can make project recommendations such as boiler replacement, smart building management system (BMS) installation, and rooftop solar PV implementation. According to two other participants, the timing of CapEx works needs to be carefully planned, considering external factors, including lease rollover, debt maturity, and grid decarbonization. Close coordination with the leasing team, financing team, and other disciplinary functions are

essential to minimize business disruption and capital project costs, as well as to optimize the impact of the capital projects.

Disposition: Real estate owners usually determine whether they should exit a property through a periodical hold-or-sell analysis. One participant pointed out that the amount of CapEx required to decarbonize a building is vital in such decisions. For example, if an asset requires an extensive retrofit to mitigate its transition risk, the company may elect to sell it instead of holding it while absorbing the retrofit costs. ESG efforts are made even beyond the disposal of an asset, as one company emphasized the necessity to adequately capture all the ESG practices, such as LEED Certification and social programs, that had been put into the sold property for marketing and reporting purposes.

2.6 Analysis

The interviews show a slight divergence in how companies integrate ESG into their investment process. We analyze the divergence among participating companies by each of the following dimensions.

- **Ownership structure:** whether a company is public or private
- **Investment strategy:** whether a company has substantial in-house development capacity ("development-focused") or not ("acquisition-focused").
- **Geographical exposure:** whether a company has substantial investment and operation in non-US markets ("international") or not ("domestic").
- **Asset class:** Which property type a company specialized in.

The number of companies for each controlled group is indicated in the () below.

Ownership Structure: Public (4) vs. Private Companies (5)

While one would have expected public companies to have a greater level of ESG integration, we do not notice any meaningful divergence in responses between public and private companies. As the selected companies are all industry leaders, we need to further examine the difference by including smaller and lower-positioned firms in the sample.

Investment Strategy: Acquisition-focused (3) vs. Development-focused (6)

Acquisition-focused companies are generally more likely to create policies, procedures, and guidelines than development-focused firms. Two companies in this category detailed how they track ESG progress during the asset management phases, including decarbonization auditing and reporting. While the ESG team in a development-focused firm tends to primarily work with the deal team and asset management team on a case-by-case basis, their counterpart in an acquisition-focused firm is more likely to send out guidelines and policies to relevant parties. This difference may be because these acquisition-focused companies tend to have a larger and more diversified portfolio, so a more systematic approach is required.

Also, building certification is a main consideration that development-focused firms tend to embed into their due diligence and investment decision process. The fact that building certifications are easier to obtain for new constructions and can be a value adder during sales may explain the divergence.

Geographical Exposure: Domestic (2) and International (7)

As revealed in the interviews, companies with operations in European markets are more likely to give more consideration to transition risks from SFDR and TCFD. In contrast, one US-focused firm suggested that they do not expect SFDR to make its way into the US market anytime soon as it is likely to result in a fierce battle in the court.

Asset Class

One participant focusing on class-A offices is much more progressive in implementing green leasing. However, this trend may not be generalized for all office investors and managers as the distinction may be attributable to the unique positioning of the underlying firm due to its large property sizes, gateway city locations, and the high bargaining power over tenants.

Chapter 3 - Defining and Implementing ESG Strategies

3.1 Target Setting

3.1.1 Overview

Setting ESG targets or goals is usually a necessary step before a company defines specific sustainability strategies. These targets are categorized into Environmental (E), Social (S), and Governance (G). While targets can be related to its own corporate operation, such as the race/gender diversity and retention of its workforce, ESG policy development, and reduction of commuting or business travel, this study primarily focuses on those related to the asset/portfolio's performance. The following list shows examples of targets real estate companies may set.

Environmental:

- Carbon emissions: Reduce xx% of scope 1 and 2 greenhouse gas emissions (tCO₂e) by 2040.
- Total energy consumption: Reduce xx% of total energy consumption (kWh) by 2030.
- Energy use intensity: Reduce xx% of energy intensity (kWh/SF) by 2025.
- Water conservation: Reduce xx% of water use intensity (gallon/SF) by 2030.
- Waste diversion: Reduce xx% of waste (ton) to landfill.
- Renewable energy generation: Generate xxGW of renewable energy by 2025.
- (all the above need to have a baseline year)
- Building certification: 100% of all new developments obtain certification above LEED gold.
- Net Zero: Achieve net zero across scope 1, 2, and 3 by year 20xx or sooner.

Social:

- Housing affordability: provide xxx units of affordable housing of xxx AMI by 2025
- Workforce training: train xxx people and increase xx% of their income by 2025.
- Job creation: Create xx quality jobs from development by 2025.
- Community engagement: Invest xxx (\$) capital in projects that support underserved communities by 2025.

All companies participating in this study publicly disclose ESG targets at some level. While we can grasp a company's efforts in goal settings through their ESG reports, interviews with ESG leaders provide deeper insights in 2 ways: first, the interviews reveal internal targets that are not disclosed to the general public but only to specific stakeholders. Second, it allows us to better understand

their rationales and approaches behind the target setting. In this section, we categorize the approaches identified from the interviews. Some companies apply a combination of multiple approaches.

3.1.2 Impact Projection (Bottom-up)

One approach recognized in this study is to set achievable ESG goals by estimating the trajectory of the existing efforts. A participant first identifies the drivers for building energy performance to set an adequate for energy reduction. The drivers include tenant improvements, conservation/retrofit measures and investments, the weather of the location, and operation, including setback settings for weekends and other non-operational hours.

Second, the ESG team looks at the historical energy improvements and historical investments in the assets by each category (lighting, HVAC and control, real-time energy management system, etcetera.).

Using the historical data, the company then develops a probabilistic model and calculates the future energy reduction for the asset based on the estimation of improvement in each category. Finally, regional and enterprise-level targets are estimated by combining the asset-level projections.

We call this the “Bottom Up” approach because it is primarily driven by information on an asset or retrofit project basis. While it is a data-driven approach, the practicality of achieving the target is highly contingent on the quality of historical data and the model. Also, the goals need to be validated by framework alignment, as practiced by the participant, to show that they are enough to address objectives in the greater society.

3.1.3 Framework Alignment (Top-down)

Contrary to computing the reduction goals using an engineering-intensive approach, 7 out of 9 companies considered alignment with widely accepted frameworks to set the numbers. For carbon emissions, the one widely adopted framework is Science-based Target Initiatives (SBTi) which helps companies set emissions reduction targets that are in line with the goals of the Paris Agreement on climate change. If a company joins the Net Zero Asset Manager Initiative, it is obliged to work towards net zero by 2050 or sooner across all investment strategies, with the aim of aligning with SBTi.

In one example, the ESG team calculates its carbon emission target by backing out from the SBTi goals. For instance, if the company needs to reduce 90% in scope 1 and 2 emissions by 2050 from a 2020 baseline, an annual reduction of 7.4% is required. Another company used third-party evaluation to align with the climate pathway.

Less than half of the companies interviewed have already signed with SBTi though some intend to do it in the upcoming year. Also, some companies apply the methodologies indicated by the framework without formally aligning with it. According to ESG managers participating in the interviews, hurdles for a real estate company to adopt SBTi officially include (1) incohesivity with real estate development, (2) complexity in defining the boundary for companies with multiple investment types and (3) release of new standards, which requires additional efforts in re-alignment.

In addition to SBTi, other frameworks include Better Building Partnership in the UK, GRESB, building certifications, and emerging regulations also set out similar pathways for net-zero carbon and other sustainability indicators. To mitigate the risk of relying on a single framework, one participant maps out all criteria laid out by those different frameworks and regulations and identify a roadmap that satisfies the most common requirements.

Social-related issues are well informed by the Global Reporting Initiative (GRI) framework. One company interviewed is undergoing a GRI alignment process annually with a sustainability consultant to disclose social indicators. SEC also provides guidelines on human capital disclosure, which is relatively consistent with GRI.

3.1.4 Peer Benchmarking

As more companies create their ESG reports and make them publicly available, peer benchmarking becomes a handy way for companies to gain the latest trend and best practices in the industry. Two ESG managers mentioned that they referred to what their peers are doing when setting the targets, on top of other approaches. This methodology is seen as advantageous for setting social-related targets, which are less standardized than environmental targets.

3.1.5 Alignment with Major Investors

As one perceived impact of ESG practice is to gain a competitive advantage in capital raising, it is beneficial for the company to set the targets which the investors care about the most. One participant which is the real estate asset manager of an insurance company indicated that it aligns the net-zero goals with that investor. A firm with a diversified investor base conducted a material survey among its investors to gain an understanding of the investors' priorities. For social issues, one company discovered that its investors care less about volunteer hours and more about employee retention and turnover. Also, the George Floyd incident pulled more attention to racial diversity at different levels of the organization. At the same time, the pandemic of COVID-19 triggered interest in indoor air quality and pushed for more WELL-certified buildings.

3.1.6 Business Unit Level and Fund Level Target Setting

A company with multiple business units (including non-real estate business) also set separate ESG targets for each individual business unit. The senior management breaks down the firmwide goals and allocates ESG targets to each business unit. The dedicated sustainability team of each business is responsible for the execution while reporting to the central committee on its progress and roadmap.

Another participant does not set any overall ESG targets as a firm except for a long-term net-zero commitment. Instead, it sets ESG targets by fund or investor account, as the targets depend on the type of investors, investment strategies (core vs. opportunistic), and geographical markets.

3.1.7 Issues in Target Setting

Through this study, we also observed several challenges for a real estate firm to set targets for its asset and portfolio.

Boundary setting: The targets do not always cover 100% of their business, mainly due to data availability and ownership. Companies may exclude a particular asset class of their portfolio from the boundary of the targets, making it difficult to compare across the industry.

Duration mismatch between the goal and the tenure of the ESG manager: While ESG goals and commitments are long-term in nature, it is implausible that the head of ESG or whoever set the goal

will remain in the position when the timeline is due. As a result, ESG leaders may be incentivized to create over-ambitious goals without sufficient action plans to achieve the results.

Duration mismatch between the goal and asset holding period: ESG targets are more relevant for a core strategy with a long-term holding period than for an opportunistic investment strategy requiring higher asset churns.

Divergence in ESG frameworks: the lack of market consistency can result in the inefficiency of property transactions because the ESG efforts put into an asset may not be fully recognized by the next buyer. One participant emphasizes the importance of coalescing as an industry towards the standardization of frameworks.

Immaturity of ESG frameworks: A release of a new framework or the update of an existing ESG framework may require significant time and effort in re-alignment and setting new goals. Many companies in this study are still publishing their “legacy goals,” which are to be revised.

3.2 Metrics Setting

3.2.1 Overview

Also known as Key Performance Indicators (KPIs), metrics are indicators used to measure and assess ESG targets. The metrics are an integral component of a target. While target setting focuses on how much one should achieve a specific objective, metrics setting concerns the adequate unit used to measure that achievement.

Metrics setting is essential for companies to collect data and analyze the ESG performance and for investors to benchmark across investments on the same basis. Different metrics settings may also create different incentives on how ESG leaders and senior management decide and execute strategies to achieve the targets.

Here are some examples of ESG metrics used by real estate companies:

- Scope 1, 2, and 3 GHG Emissions: Total tCO₂e at 100% ownership share.
- Operational Energy Data Coverage: % of gross SF for which the fund receives utility reporting data divided by the gross SF of assets in operation.

- Like-for-like water intensity: L/SF, based on those assets reported on applicable performance data for the entire assets (incl. both tenant-occupied premises and common areas) for at least 24 months.
- Construction Waste Diverted from Landfill: million metric tonnes
- Renewable Energy: MW of installed capacity
- Renewable Equity Investments: million USD
- Building Certification: % of new development projects or % of gross SF
- Average Energy rating: # / 100, on assets with at least 12 months of stabilized operational data, and that can be rated under either EPA Energy Star or EPC.
- Workforce Training: total number of people trained
- Ethics Training: % of full-time employees
- Average Walkability score: #/100

From the interviews with selected companies, we found that there are several considerations for metrics setting.

3.2.2 Absolute (total) Basis vs. Intensity Basis

Most companies have primary environmental targets, including carbon, energy, and water. One divergence seen in ESG disclosures is whether a company measures these targets on an absolute or intensity basis. For example, a 20% reduction in total carbon emission (MtCO_{2e}) can have significantly different implications than a 20% reduction in carbon emission intensity (CO_{2e}/SF).

To be clear, most ESG teams collect and monitor raw data on a property and portfolio level internally and can generate and disclose all types of metrics as necessary. However, they do not set targets for all the metrics but only a few that serve as indicators of ESG performance.

Considerations as to whether a company should use an absolute vs. intensity basis include the following.

Absolute (Total) basis:

- Pro: Indicative of the overall carbon and ecological footprint of the whole portfolio or company, which is more meaningful for stakeholders who care about the end result of environmental conservation.
- Pro: More comparable across industries for investors who invest in other than real estate.

- Con: May be deemed anti-growth by shareholders since it incentivizes the downscaling of the business.
- Con: Harder to derive asset-level strategies because the target is dependent on scale.

Intensity Basis:

- Pro: Easier to derive asset-level strategies and track performance.
- Pro: Can be used to calculate the overall reduction for a growing portfolio, so the ESG efforts are not offset by growth.
- Con: Hard to define boundaries, especially which area to be used as the SF basis.
- Con: May need separate targets for each asset class to track the data and set an action plan.

3.2.3 Metrics Defined by Frameworks

Some companies refer to market frameworks and emerging regulations to define metrics widely accepted by investors.

Weighted Average Carbon Intensity (WACI): The Task Force on Climate-Related Financial Disclosures (TCFD) recommends Weighted Average Carbon Intensity (WACI) as one of the metrics for carbon dioxide emissions. WACI measures the portfolio’s carbon efficiency and considers total emissions relative to the business’ revenue and the weight of the asset in the portfolio (from company disclosure). The below table shows a summary of how to calculate and implement the metrics (TCFD, 2017, p43).

Weighted Average Carbon Intensity	<i>Description</i>	Portfolio’s exposure to carbon-intensive companies, expressed in tons CO ₂ e / \$M revenue. <i>Metric recommended by the Task Force.</i>
	<i>Formula</i>	$\sum_n \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's \$M revenue}_i} \right)$
	<i>Methodology</i>	Unlike the next three metrics, Scope 1 and Scope 2 GHG emissions are allocated based on portfolio weights (the current value of the investment relative to the current portfolio value), rather than the equity ownership approach (as described under methodology for Total Carbon Emissions). Gross values should be used.
	<i>Key Points</i> + / -	<ul style="list-style-type: none"> + Metric can be more easily applied across asset classes since it does not rely on equity ownership approach. + The calculation of this metric is fairly simple and easy to communicate to investors. + Metric allows for portfolio decomposition and attribution analysis. - Metric is sensitive to outliers. - Using revenue (instead of physical or other metrics) to normalize the data tends to favor companies with higher pricing levels relative to their peers.

Figure 1 Weighted Average Carbon Intensity (TCFD)

Other metrics by EU Taxonomy: In addition to WACI, TCFD includes other climate-related metrics, including Embedded Emission, Energy usage/ intensity, and water usage/intensity (TCFD, 2017, p8)

3.2.4 Compatibility with Performance Contract

Strategies related to ESG targets are executed by professionals from different organizations. In some cases, the company may achieve the targets more efficiently by aligning the metrics with other parties who execute the strategies. An interviewed ESG manager seeks to incorporate the metrics into performance contracts with external consultants (architects, engineers, contractors, vendors) whose fees are contingent on their performance in achieving the ESG targets. However, performance contract is less pervasive in the United States than in other markets such as the middle east.

3.2.5 Metrics for Social Impact

Social-related metrics setting is fragmented due to the diversity of the underlying objectives. A company participating in this study measures social impact using **Social Return on Investment (SROI)**, a metric promoted by Social Value International. The SROI approach allows companies to set a social target in dollar values known as a financial proxy. The company adopts this approach to track the impact of social initiatives such as job training for women in the trade, community well-being, and reducing suicide in construction. A consultant is hired to help track the performance. Social Value International published guidelines (2012) demonstrating the calculation and reporting of the SROI metrics.

3.3 Data Collection and Management

3.3.1 Overview

Data plays a paramount role in measuring the ESG impact. Real estate companies need to collect and track asset data in order to assess the problem and quantify the result of the implemented strategies. This section summarizes how participating real estate companies perceive and tackle the challenges in collecting and tracking data.

3.3.2 Challenges in Data Collection

Access to Tenant Data: While the tenants or users of commercial real estate have primary responsibility for sustainable energy and water consumption, landlords or real estate owners are increasingly required to disclose and mitigate the environmental impacts of their downstream activities. For example, one interviewed company implied that a recent change in GRESB requires property owners to report energy data they do not manage. However, under a triple-net (NNN) lease, the property owner generally does not have contractual access to the tenants' utility data, including electricity and water usage. Limited tenant data access imposes a problem when the asset owner is trying to evaluate and reduce its energy usage and carbon footprint.

Limited Capability of Industry: Real estate companies invest in assets that are subject to local regulations and market standards. An interviewed company pointed out that American real estate companies tend to have a shorter history in sustainability reporting than their European and Australian counterparts, resulting in lower data gathering and tracking capability. Also, data quality needs improvement to allow US companies to withstand third-party auditing in sustainability.

Regulatory and Political Environment: Three companies acknowledge that the regulatory system imposes significant challenges for data collection. Landlords do not have the legal right to obtain tenant data in certain countries and cities, such as Germany and Chicago, according to one ESG manager. Another company mentioned that, although it would be efficient to access tenants' utility data directly from utility companies, the federal government cannot mandate the publication of those data because of the deregulation of utility companies. It also highlighted the importance of engaging regulators to push forward data sharing. Also, an interviewee views the legal and political systems in the US as a deterrent that slows down the green transformation of the industry.

3.3.3 Data Collection Strategies

Companies are taking various strategies to obtain data required for ESG practice.

From tenants or operators

- **Data sharing provisions in lease or management agreement:** 6 out of 9 companies interviewed explicitly indicated that they incorporate language into lease or management agreements to obligate the tenants or operators to share utility data. Given the significance

of those data to the investors, some companies seek to include penalty provisions for missing the deadline. One participant seeks to change the data submission frequency from annual to quarterly but faces challenges in the operators' capability of submitting the data timely and accurately. In addition, non-binding data acquisition guidelines are shared with the operator or external manager.

- **From billpay aggregators** Some sophisticated senior housing operators use billpay aggregation platforms such as Schneider and Yardi, allowing the property owner to download the auto-generated data in a uniform format.
- **Manual collection:** At least 3 participants also collect data manually from the tenants in cases where the old lease is still in place, and in some international markets.

From utility companies

- **As of right:** Several states and local municipalities allow real estate owners to get the data directly from utility companies, according to a participant.
- **Data collection waiver:** Another ESG manager works to sign waivers with operators to enable them to access their data through utility companies.

From independent data management systems

- **Meter management system:** A company seeks to roll out independent whole-building energy metering systems to newly built industrial properties.
- **Project-based sustainability management system:** A large-scale and highly sophisticated project implemented by one of the companies has its standalone sustainability management system. The system includes a tracking dashboard of all necessary sustainability indicators like embodied carbon.

Estimate

- One company interviewed applies estimation where data is unavailable by using public proxies based on the property type. In this case, determining which data is material to the ESG targets is crucial to optimize the accuracy of the estimation.

3.3.4 Tools

Companies use a variety of digital solutions to collect data and manage information. Examples of tools used by participants include EPA Portfolio Manager for data acquisition and Measurabl for data integration and visualization. There are tools to quantify embodied carbon emissions, including Quantis, One Click LCA, and EC3.

3.3.5 Data Assurance

A public company highlighted the importance of third-party assurance for all its measured data claimed on the ESG report because the accuracy of the information is substantial to its investors and shareholders. The company goes through a 3-month assurance process with an assurance provider annually. The assurance process is similar to financial/corporate governance assurance and auditing, including sampling and verifying the data and issuing an assurance opinion.

3.3.6 Special Topic 1: Embodied Carbon Emissions Data

Embodied carbon emissions, as a part of a company's scope 3 emissions, are a significant contributor to the carbon footprint of the real estate sector, especially for developers who rely on new property constructions. All 4 public companies and at least 3 out of 5 private companies interviewed measure and disclose scope 3 emission data. However, some ESG managers expressed challenges in accounting for embodied carbon, including the lack of vendor information and limited expertise in embodied carbon calculation.

According to one company interviewed, there are three methodologies to account for embodied carbon:

- **Using the SBTi framework**
- **Rough estimations:** Calculate by inputting the total dollar amount of purchased goods and services in Quantis or using a dataset from the Carbon Leadership Forum, which is based on the spend on the hard costs.
- **Embodied carbon assessment:** obtain environmental product declaration forms EPDs from contractors. Then use tools like one-click LCA and EC3 to generate actual embodied carbon calculations. This method can be especially advantageous in calculating the savings from lower embodied carbon materials substitutes.

The company also pointed out that although innovative technologies such as low-carbon materials are helping reduce embodied carbon, the most significant impact is from adaptive reuse, as it drastically reduces the need for the production and transportation of building materials.

Another ESG manager suggested a potential shift in market dynamics with intensifying mandates for embodied disclosure in the future, as buyers with a net-zero goal might prefer sellers that can provide embodied carbon data. This potential change resembles the change in landlord and tenant relations, which is already taking place.

3.3.7 Special Topic 2: Social Data

Collecting and managing social data is another challenge for real estate companies implementing asset-level social programs. A participant collects data from social initiatives by surveying and interviewing stakeholders, including community participants, their family members, the government, and its own employees. Consultants and collaborating NPOs often share the responsibility for data tracking. However, these collection approaches may take time and have low response rates.

Data accuracy is another issue for social data as the involved metrics are less standardized than environmental ones, such as carbon and energy usage. A company refers to Social Value International's principles for guidance. For example, one cannot overclaim the impact if the program is funded by multiple sponsors, but instead only claims the relevant portion which equals the percentage interest in the program.

3.4 Prioritization of Strategies

3.4.1 Overview

Usually, more than one asset-level strategies are available for a company to achieve its ESG goals. For example, to reduce the carbon emissions of a property, one may improve the building energy efficiency, including retrofitting the building envelope, HVAC system, LED lighting, and building control systems. The management may also electrify the property so that all scope 1 emissions will be eliminated and scope 2 emissions will be reduced over the course of the decarbonization of the grid. In addition, integrating on-site renewable energy, such as behind-the-meter solar photovoltaic systems, can reduce tenant emissions. Lastly, a company can purchase carbon offsets from

reforestation or offsite renewable energy development projects. For Social, asset-level strategies can include affordable housing development, healthy building, and community engagement.

Companies constantly apply a combination of strategies to achieve their ESG goals. However, given the limited resource and budget, ESG managers also face the challenge of choosing between the options. By interviewing real estate companies, we have identified several patterns a company may take when prioritizing ESG strategies.

3.4.2 Direct Financial Benefits

One of the barriers to rolling out ESG strategies at scale is their misalignment with profit maximization for companies. Therefore, it is no surprise that 3 companies participating in this study mentioned that they prioritize the strategies that make a business case. A strategy with a positive return on investment tends to be very persuasive among stakeholders across functions and levels, so that a company can easily make the decision within the “conventional framework”.

Building efficiency (energy saving and water conservation) projects are among the top priorities of real estate companies because they help save operating costs and benefit the real estate owner, given that the lease is appropriately structured. Second, on-site renewable energy integration can also be profitable. However, the economics may vary by metering option (in-front-the-meter vs. behind-the-meter), which in turn depends on the specific demand of the asset and tenants. Similar to in-front-of-the-meter on-site renewable energy, offsite renewable energy can also bring extra revenue by selling power or Renewable Energy Credits (RECs). Following this methodology, carbon offsets are the least priority because they always represent a negative return.

However, we noticed that the direct financial benefit of a specific strategy might not be constant but varies by individual asset, as driven by a myriad of factors.

Project costs: Costs of CapEx, such as HVAC systems, solar PV panels, and energy storage systems, may vary by project.

Debt maturity: A property’s debt maturity schedule also makes a difference as it determines when the capital becomes available.

Utility costs: The market price of utilities like electricity, natural gas, and water plays a significant role in deciding whether the revenue can fully offset the costs.

Regulatory penalties: Fines and penalties imposed by regulations on non-compliance buildings may also justify the financial viability of sustainability projects in the form of avoided “brown discount.”

3.4.3 Strategic Benefits for Business

Not only does a profit-driven business consider direct financial benefits, but it also evaluates indirect ones. At least two participants suggested leasing and government relations as drivers for strategy prioritization, though their impacts are not always quantifiable.

Leasing: Companies can prioritize ESG projects that help the leasing activity, resulting in higher occupancy, shorter ramp-up duration to stabilization, and even higher rents. The timing of the project is vital as it needs to be aligned with the leasing rollover of the underlying property. For example, the company chose to invest in retrofit projects for one property with upcoming lease rolls but not another leased-up building with similar physical and environmental attributes. Social-related strategies can also improve building performance. For example, another company indicated that air quality improvement and WELL Certification for an office building helps real estate owners and tenants bring employees back to the office who would otherwise work from home. Social strategies can be a differentiator for ESG-aware tenants as Environmental strategies are becoming common.

Government relations: Strategies aligned with government policies and mandates are always welcome by local officials and, therefore may contribute to improved government relations for a real estate company. The relationships are especially beneficial for developers who rely on the relationship to realize their business plans. Because every municipality has different problems that the government seeks to solve first, the real estate company also needs to be flexible and tailor the menu of strategies based on the priority of the local government. For example, Affordable housing is regarded as the most outstanding issue for public officials in Boston, while San Francisco may prefer addressing the homeless problem. Also, government relations' importance varies significantly by country and may outweigh any direct financial benefit in specific markets like China. The ESG team needs to collaborate with the transaction team to align the firmwide objectives with that of the individual asset.

3.4.4 Effectiveness and efficiency in achieving ESG goals

Three participants implied that they rank among strategies by how effective those strategies address the ESG objectives. Companies also factor in cost and feasibility when evaluating the environmental and social impacts, seeking to get the most “bang for the buck”.

LCA: To determine which strategy has the highest impact, a company can start by identifying the problem through Life-cycle assessment (LCA). For example, if 99% of a property developer’s carbon footprint is from scope 3 emissions (including both downstream emissions and embodied carbon), it would be more effective to implement the standalone metering system and apply low-carbon materials for its development pipeline.

Scalability: Another factor that drives effectiveness is the scalability of the strategy. Companies tend to avoid one-off strategies and prioritize those that can be rolled out across their portfolio. The maturity of the supply chain is a major consideration.

Testing through pilot projects: A few companies work on pilot projects to test whether a strategy is feasible, effective, and scalable. Some vendors for building efficiency solutions, such as irrigation and HVAC systems, can guarantee savings in energy or water so that the property owner does not need to incur the cost during the pilot stage. A participant found that solar PV is not fully scalable due to its dependency on the energy price of each market, though new government incentives may provide opportunities. The ESG team often collaborates with the asset management team, who directly liaise with vendors for the solutions. Another company also experiments with early-stage sustainable building technologies by partnering with industry and universities.

3.4.5 Compliance & Risk

Three participants mentioned risk mitigation or compliance as a consideration for prioritizing strategies. A company suggested that it needs to meet the minimum requirement by “sustainability leadership” to avoid being seen as a laggard. Another company implied that it chooses strategies less prone to greenwashing scrutiny. Risk mitigation may also contribute to direct financial benefits as it helps real estate owners and managers avoid “brown discounts.”

Also, one participant indicated that it implements strategies to satisfy voluntary emerging regulations, such as the California Zero Code, which are likely to become mandatory in the

subsequent years. By doing so, the company can also enhance government relations since the cities and states will feel the supports from the private sector, especially when they are understaffed (which is related to Strategic Benefits).

3.4.6 Materiality of Stakeholders

Another standardized way to determine ESG priorities is materiality analysis. One participant conducts a stakeholder survey to identify issues that are most important to stakeholders and have the most significant impact on the organization's performance and risk profile. Another ESG manager uses “concentric circles” to map out the hierarchy of stakeholders. However, one participant with a diversified portfolio cast doubt on this methodology, indicating it is focused on defining firmwide strategies rather than asset-specific ones because the materiality for each property may vary vastly depending on the investor, market, and regulatory environment. Nevertheless, we regard this approach as applicable, especially for real estate companies concentrating on a limited number of asset classes and geographical markets.

It is believed that materiality analysis is an ongoing process since the perspectives of stakeholders may change over time. However, a participant mentioned they do not expect a substantial change in the current ESG preference of their stakeholders.

3.4.7 Leveraging Existing Capability

Since each company has different competencies in the marketplace, the ESG manager needs to pay attention to its in-house capacity to decide on ESG programs. From the interviews, we identified two ways in which a company may think about how its existing capability may impact the prioritization of ESG strategies.

“Low-hanging fruits”: A participating company indicated that it prefers strategies that are “low-hang fruits,” which shall have the second priority only after existing and emerging regulatory requirements. These “low-hang fruits” include:

- Strategies that do not require excessive upskilling of critical disciplines, such as the legal and cost team.
- Strategies already implemented by the company in other “more advanced” markets (e.g., Europe, UK, and Australia).

- Strategies that do not require new policies, procedures, and mandates in place.

Competitive advantages: On the other hand, a few ESG managers suggested the power to leverage their unique positions in the marketplace to craft strategies that differentiate them from their competitors. For example, a company partnered with an investor, a developer under the same group, and a university tenant to set up a social impact fund to educate people in the community on high-tech jobs. Another company specializing in both student housing and senior living initiated a program to bring together these two groups of people in mixed-use developments. The strategy helps create a sense of community between the two demographic groups and solves the staff shortage problem for its senior living business by engaging lower-wage students.

3.5 Analysis

We analyze the divergence among participating companies by each of the following dimensions:

Ownership Structure: Public (4) vs. Private Companies (5)

We found that public companies interviewed are slightly more consistent in their answers about target and metrics setting. For example, all public companies have set and disclosed interim ESG goals with a timeline on or before 2025. On the other hand, private companies are bifurcated in the level of target disclosure with one company does not publish interim goals at all.

We see a similar bifurcation for data management and disclosure. While all public companies' ESG reports and data are assured by third-parties, less than half of the private companies have published their assurance reports. This may be indicative of the difference in reporting requirements for public and private companies.

For strategy prioritization, No meaningful difference is revealed between the two controlled groups. We consider the divergence attributable to the individual firm or ESG manager.

Investment Strategy: Acquisition-focused (3) vs. Development-focused (6)

We expected a difference in the awareness of embodied carbon for the two groups regarding target & metrics setting and data collection. However, there is no meaningful difference between the two controlled groups despite a limited number of exceptions. Instead, we observe a general tendency

that most companies face substantial challenges in accounting for and reducing scope 3 emissions, including embodied carbon.

Development-focused firms tend to implement more meter management systems and project-based sustainability management systems, which are regarded as more suitable for ground-up developments.

We observe more development-focused participants driven by direct financial benefits when selecting ESG strategies. This may be because development tends to be higher in risks and shorter in holding period, resulting in a lower tolerance for financial performance for the developer.

Geographical Exposure: Domestic (2) and International (7)

Companies with exposure in the European (including UK) markets are slightly more inclined to align with frameworks such as TCFD and Better Building Partnership and use metrics (e.g., WACI, SRIO) defined by those frameworks.

Companies with local operations in international markets tend to express more challenges in data collection for properties both overseas and in the US. This may be because they need to deal with a more diverse regulatory environment and market norms.

Asset class

No meaningful difference is observed for target and metrics setting.

Companies focused on offices have a higher data coverage ratio. In contrast, industrial and senior housing companies tend to struggle with data ownership issues with the tenants and operators.

Companies that are more asset-specialized (focused on only one or two property types) care more about the scalability of the strategies. This may be because the standardization and commoditization of their product allow for efficient rollout.

Chapter 4 – Perceived Impact of ESG

In this study, we examined the participants' perspectives on how their ESG strategies have impacted the financial performance of the assets and the company. We need to acknowledge that the results are based on the subjective perceptions of interviewees who are the ESG leaders in the firm. Those perceptions may deviate from the facts since ESG managers usually do not have full exposure to data and activities related to asset transactions and capital raising. We kept the interviews anonymous to minimize the incentives for the interviewees to overstate positive impacts. Further studies need to be done by introducing quantitative data and including perspectives from a more diverse stakeholder base.

4.1 Asset Valuation

ESG strategies may impact asset valuation in various ways. Many believe the asset-level ESG factors enhance the property value but frame them as “building quality,” of which the impact is hard to isolate. On the other hand, some companies explicitly integrate those strategies into their underwriting models for asset valuations. We break down the impacts of ESG into different components that drive asset value.

Operating Cost: One of the most tangible impacts of building efficiency projects is the reduction of operating costs, such as energy and water given that the lease is properly structured. An internal study by an interviewed company showed that 5% deductions in operating costs are achieved in sustainable buildings.

CapEx: The impacts on CapEx are twofold - additional CapEx costs and CapEx savings. Most building improvement strategies come with extra capital expenditure, which occurs upon the inception of the retrofit project. The ESG team and third-party consultant often work with the acquisition or management team to ensure the cost items are adequately incorporated into the financial model. There are also costs associated with building certifications such as LEED and registration with ENERGY STAR. Those capital investments sometimes result in lower CapEx costs over the asset holding period because of the extended physical or economic life.

Insurance costs: 3 companies indicated that they benefit from a lower insurance cost or a lower escalation rate of insurance cost through strategies that enhance climate resiliency. Since many

companies do not underwrite climate events, they only include the insurance benefits in the scenario analysis. It is worth noting that major real estate markets (e.g., New York, Boston, Los Angeles, San Francisco, Miami) tend to be near waterfront areas prone to climate risks. Therefore, this saving can be substantial for companies with a portfolio concentration on those gateway cities.

Regulatory non-compliance costs: ESG strategies can help companies avoid “brown discount” from not complying with decarbonization regulations. The direct impact of penalties or fines will also likely become a consideration in upcoming years.

Cost of social program: The cost of a social-related strategy can be treated as either corporate overhead or an asset-level expense similar to CapEx. In the latter case, the company can estimate the line item as a percentage of the project cost or use a predetermined budget depending on the nature of the strategy.

Rent premium: The views are divided on whether real estate owners have already achieved a rent premium solely attributable to ESG. A participant said there is a strong correlation between rent and sustainable buildings, but the causality is hard to prove. One participant does not see a general acceptance of a “green premium” by the market in the United States, though the case may differ in some European countries. Also, most companies interviewed do not incorporate any premium into their base case valuation model but take it as a potential upside. On the other hand, a company charges a “green premium” for residential properties by adding ESG features such as *cheaper* clean energy. However, the ability to increase the rent may be constrained depending on the asset class.

Occupancy and turnover: 3 participants mentioned that ESG strategies help increase rental income through a higher stabilized occupancy rate, quicker occupancy ramp-up, shorter turnover time, or longer tenure for tenants or residents. A company’s internal study showed sustainable buildings result in +4% in occupancy and +5% in rental income, compared to the non-sustainable properties in its portfolio.

Revenue from social programs: For asset-level social programs and initiatives, the return on investment shall be measured by SROI instead of direct financial benefits. Also, social strategies bring good government relations, which is valuable but not fully quantifiable.

Cap rate: Similar to green premium, opinions on the ESG’s impact on cap rate are also divided. Some argued that the causality between ESG and a higher cap rate is not fully proven. Another ESG

manager also implies that although a green building may have a higher appraised value, whether a buyer will bear the price premium in an actual transaction is questionable. Most companies do not assume a lower cap rate for an asset only because of its sustainability attributes. However, an internal study showed that sustainable buildings benefited from a 0.5% lower cap rate and a 14% increase in sales price. Also, a participant applies a “brown discount” for stranded assets in the form of higher cap rates.

Internal carbon tax: None of the companies interviewed currently apply internal carbon tax policies. If an internal carbon tax is imposed, ESG strategies will considerably impact the economics of a company’s activities.

4.2 Cost of Capital

4.2.1 Cost of Equity

Impact of ESG on equity raising

The most observed impact of ESG strategies among participating companies is the broadening of its investor basis. Many pension funds and other institutional investors have ESG mandates in their investment procedures and will not invest in companies or assets that do not qualify for their ESG criteria. The trend is further accelerated by regulations. For example, a company pointed out that their new European funds must be classified as at least “light green” under SFDR (Sustainable Finance Disclosure Regulation). Therefore, a better way to describe the impact of ESG is not lowering the cost of equity but avoiding a “brown discount” from the investors.

Also, since ESG strategies are vital for real estate companies to compete for capital in the capital markets, real estate companies need to balance financial returns and environmental and social performance. While some companies put the fiduciary duty of maximizing profits over all others, others implied that they are willing to accept a slightly lower return to achieve ESG recognition.

A listed REIT further indicates that ESG ratings and credentials increase the weight of its stock in ESG-dedicated ETFs.

Variance in investor preferences

While the market shows a general trend pushing towards ESG, not all investors share the same degree of preference. During the due diligence phase, an investor with moderate ESG mandates may use an analyst to ask ESG-related questions in order to check the boxes. However, a more "ESG-pushy" investor tends to be directly represented by a senior manager while asking more "hardcore" questions with follow-ups on more detailed and technical issues like reducing scope 3 emissions.

Investors' ESG preferences are driven mainly by their geographical locations. According to the participants, some of the most pro-ESG investors are from northern and western European countries (e.g., Norway, The Netherlands), Australia, New Zealand, South Korea, and Canada, represented by Norges Bank, APG, Allianz, Resolution Capital, Ivanhoe Cambridge, and CPPIB. Middle East sovereign wealth funds care the least about ESG issues, while American institutional investors sit in the middle. Also, investors signed with PRI tend to have a higher ESG preference.

Shareholder activism

The real estate sector has not seen as much shareholder activism in ESG as in some other industries, such as oil and gas. However, one company pointed out that the situation may change in the future. Activist shareholders and investors tend to use CRREM as a framework to evaluate a portfolio similar to many European funds.

4.2.2 Cost of Debt

Green financing is an independent research topic and, therefore, not the primary focus of this paper. However, we can grasp the perceived impacts of ESG on the cost of debt by interviewing market players in the real estate industry. At least 7 out of 9 companies interviewed claimed that they benefit from ESG practices by leveraging green bonds and other sustainability-linked credit financings.

Issuance and use of proceed: Green bonds can be issued by public companies, including REITs, on the corporate level. The debtor must align with relevant frameworks such as EU Taxonomy or Green Bond Principles (GBPs) by ICMA. Two participants mentioned that they use the proceeds from the green bonds to finance green building development.

Broader investor base: An ESG manager mentioned that green bonds help them attract new creditor investors from ESG-dedicated funds.

Pricing: The yield spreads observed among participants are 5-10 basis points though it can be close to 40bps in some European funds. 3 companies suggested that their green bonds have a substantial oversubscription of 2-10x, resulting in advantageous pricing compared to traditional corporate bonds.

Size: Currently, the financing size is not a significant portion of most companies' balance sheets. Some companies suggest scaling-up green financing in the future is critical to yield meaningful benefits, while others see green bonds as more of a recognition for their ESG programs.

Traditional bond: ESG practices may also result in better pricing for traditional bonds. However, an ESG manager pointed out that the premium associated with the greenness of the company is hard to quantify. The company also suggests that the pricing benefits become limited since their bonds are highly desirable due to high credit rating.

Green loans: Other sustainability-linked credit financings are available on the asset level with similar lender requirements and yield spread with green bonds.

4.3 Analysis

In general, the interviewed companies share many common perspectives on the ESG impact, and we consider most differences attributable to individual firms and persons. We analyze the divergence among participating companies by each of the following dimensions.

Ownership Structure: Public (4) vs. Private Companies (5)

We do not see any meaningful difference in perspectives on asset valuation between public and private companies.

100% of public firms interviewed benefit from the issuance of the green bond, a higher proportion than for private companies. The explanation could be that public companies can issue green bonds on the corporate level, while private equity firms tend to set up a green bond fund for ESG investors.

Investment Strategy: Acquisition-focused (3) vs. Development-focused (6)

We do not see any meaningful difference in perspectives on asset valuation between these two groups. A further comparison between investment strategies of different risk profiles (e.g., core vs. opportunistic) and holding periods may provide better insight into asset value drivers such as CapEx.

In general, acquisition-focused firms care more about the benefit of an increased investor base from ESG. Several participants emphasized that ESG practices effectively provide them access to the investors who increasingly mandate ESG components for their investment. The reason could be that acquisition-focused firms tend to have a larger portfolio, leading to a greater significance of each investor account.

Geographical Exposure: Domestic (2) and International (7)

Although the perspectives between these two groups are similar, we observed that firms with global operations are slightly more optimistic about rent premiums from ESG, probably because they are exposed to markets where the green premium is more prevailing than in the US.

Asset class

No meaningful difference is observed, given the limited sample size and scope. Further study on a fund or asset level may be helpful to gain a better insight into the impact of ESG on asset valuation.

Chapter 5 Conclusion

5.1 Summary of Analysis Results

In the last sections of Chapters 2, 3 and 4, we analyzed the divergence among participating companies by their ownership structure, investment strategy, geographical exposure, and asset class. Here we summarize the key takeaways from the analysis results.

Ownership Structure: All participating companies, public and private, are industry leaders. Therefore, they all have well-structured governance in place to integrate ESG into their investment process, though each company may have its unique way of prioritizing ESG strategies. However, compared to public companies, which are consistent in target/metrics setting and data collection, we see a bifurcation among private companies. Despite the drawback of increased public scrutiny, public companies are more likely to benefit from the green financing market.

Investment Strategy: Compared to development-focused companies, companies focused on acquisitions and non-direct investments tend to take a more systematic approach by creating and implementing policies, procedures and guidelines mainly due to their large and diversified portfolios. For the same reason, they regard the increased investor base as one of the enormous benefits of ESG. On the other hand, development-focused firms tend to be driven by direct financial benefits when selecting ESG strategies, given the higher risks and shorter holding periods of their investments. All firms face substantial challenges in accounting for and reducing embodied carbon, which is of higher relevance to developers.

Geographical Exposure: Companies with international operations are more likely to adopt the best practices in markets with more stringent ESG regulations, such as Europe. They tend to formulate their approach by aligning with frameworks such as TCFD and using metrics (e.g., WACI, SRIO) defined by those frameworks. As global firms need to deal with a more diverse regulatory environment and market norms, they tend to develop a deeper insight into the structural challenges in data collection.

Asset class: Because the contractual structure and market dynamics vary across property types, asset class specialization tends to impact a company's data coverage and ability to implement green lease provisions across its portfolio. Also, companies specializing in only one or two property types

care more about the scalability of the strategies due to the standardization and commoditization of their products.

5.2 Recommendations

Despite the momentum of ESG in recent years, the current economic, legal, and social systems are insufficient for us to achieve ESG objectives at the scale that our society and nature desperately need. While gradual improvements in efforts by direct market players are necessary, we list some recommendations that can potentially address the challenges and drastically help us shift towards a circular economy and stakeholder capitalism.

First, we need **consistency** and **mandate** in ESG disclosure requirements. Currently, the fragmented market frameworks and regulations lead to excess costs for asset managers and misinformed judgment for investors. ESG reports are idiosyncratic in content and style compared to financial reporting, making it difficult for professional and public scrutiny. A generally accepted framework and enforcing rules similar to those in financial reporting are necessary.

Second, we should leverage **technology** to its full potential and develop innovative **business models**. For example, a decentralized utility data platform using blockchain technologies can facilitate data-sharing while avoiding the improper use of proprietary information. With the technology, a start-up can craft a business model to allow tenants or individual residents to sell their utility data for a profit while retaining its ownership. Also, business innovations are required to speed up the commercialization of technologies such as low-carbon building materials, carbon capture, and green hydrogen.

Last but not least, market players in real estate need to coalesce to ensure ESG considerations are captured in all transactions across investment strategies, asset classes, markets, and supply chains. For example, a smaller private equity firm with opportunistic investment strategy and short-term holding duration is less incentivized to invest in ESG features due to the inability to internalize and pass through the benefits to its investors and asset buyers. A universal **carbon tax** may effectively ensure all market players account for externality, while an **internal carbon price** can be integrated to adjust asset valuations for more conscious decision-making. Other taxation tools for high-net-worth individuals and family offices can be designed to align the ESG preference among different types of investors.

5.3 Conclusion and Next Steps

This study provided a structured overview of how real estate companies integrate ESG into their investment process, define ESG targets and metrics, collect and manage data, prioritize among ESG strategy options, and the perceived impact of those practices. However, each of these topics deserves future exploration. Surveys can be introduced to allow for a larger sample size of the companies researched and to cover more issues in a uniform format. The diversity of the company can also be increased. For instance, we can include companies that are smaller, lower in the ESG adoption curve, and specialized in other asset classes (e.g., data centers, retails, hotels, self-storages). The same study can be conducted for other geographical markets for international comparison.

Also, we must not forget that ESG is a fast-evolving field, so the research result may be time-sensitive. Therefore, an ongoing effort is required to reveal the latest trend and best practices for decision-makers in the real estate industry to craft their strategies.

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