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The State Of Corporate Sustainability Disclosure



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UCLA CENTER FOR IMPACT AT ANDERSON
CENTER FOR CORPORATE ENVIRONMENTAL PERFORMANCE



Anderson
School of Management

Table of Contents

I. Executive Summary	4
II. Introduction	5
III. Data and Methodology	6
IV. Overall Disclosure	6
V. GHG Emissions	7
1. Scope 1 emissions	
2. Scope 2 emissions	
3. Scope 3 emissions	
VI. Climate Strategy	10
VII. The Coming Regulations	11
A. The SEC's Proposed Rule	
B. California's Regulations	
VIII. Social and Governance Key Metrics: Diversity	11
A. Gender Diversity	
B. Ethnic Diversity (Board and Workforce)	
C. CEO-to-Median-Employee Pay Ratio	
IX. Conclusion	15
X. Appendices	16
A. List of Current Metrics	
B. List of Companies	
C. Companies by Sector	
Endnotes	27

This report
highlights
3 key topics:
Climate Change,
Diversity, and
Pay Ratios

I. EXECUTIVE SUMMARY

In our second State of Corporate Sustainability Disclosure report, we analyze the most commonly disclosed corporate sustainability metrics among S&P 500 firms, based on data from the Open for Good initiative. Our focus is on greenhouse gas emissions (GHG), climate strategy, gender and ethnic diversity, and the ratio of CEO-to-median-employee compensation.

We evaluate the disclosure rates and performance data of S&P 500 companies using a refined set of 16 sustainability metrics, categorized as Environmental, Social and Governance. Our findings indicate that Environmental metrics, such as GHG emissions, climate strategy, water usage and land use, have the lowest average disclosure rate at 52%. Across all metrics, the average disclosure rate is fairly low at 55%. **Social metrics, encompassing workforce diversity in terms of age, gender and ethnicity, show the highest average disclosure rate at 58%.** Governance metrics, including board diversity, competencies in environmental and sustainability issues, and the identification of material issues, follow closely with an average disclosure rate of 55%.

Regarding climate change disclosures, we observe that **reporting for Scope 1 and 2 GHG emissions is notably high, with average rates exceeding 80%. Conversely, the disclosure rate for Scope 3 emissions drops to 56%.** The highest Scope 1 emissions appear in the Utilities, Energy and Materials sectors. However, the lack of detailed information on the assumptions and methodologies that these disclosures employ constrain this data's usefulness. The recent legislation in California that mandates the disclosure of carbon emissions and climate risk could foster greater standardization in the future. However, the current **low levels of Scope 3 disclosures suggest a significant challenge for firms to swiftly comply with new regulatory requirements.**

Our examination of workplace and board diversity shows that gender composition disclosure within the workforce is common, with an average rate of 84%. However, the average disclosure rate for ethnic diversity is lower at 61%. While reporting this data to the government is a federal mandate, public disclosure occurs less frequently. Because we find that firms already collect standardized diversity data for the Equal Employment Opportunity Commission (EEOC), disclosing this information more comprehensively should not be overly burdensome.

Our analysis of firm performance on these metrics indicates areas for potential improvement. On average, women comprise only 39% of employees in S&P 500 firms, with Financials and Health Care the sectoral exceptions, reporting averages of 50% and 51% women, respectively. At the board of directors' level, the representation of women is lower, averaging 32%, with minimal sectoral variation. Ethnic diversity also shows lower levels of disclosure and representation, with an average workforce composition of 61% White and 39% non-White. Board ethnic diversity is similarly low but varies by sector.

Regarding the comparison of the CEO's total compensation with that of the median employee, the average ratio for the S&P 500 sample is 305.¹ This means that **average CEO compensation is 305 times greater than that of the median employee.** CEOs in the Consumer Discretionary, Consumer Staples and Communication Services sectors are typically the highest paid. However, this can vary significantly from year to year within each company, with one-time compensation awards often influencing the ratio. Mandating this information for the entire set of C-suite employees would allow more stable yearly comparisons.

In summary, the 2024 State of Corporate Sustainability Disclosure report reveals that the current voluntary sustainability disclosures of S&P 500 companies frequently fall short, primarily due to a lack of standardization and detailed context. Anticipated regulatory changes, especially in GHG emissions reporting, are likely to foster more consistent and useful disclosures. However, the present state of reporting suggests that firms will need to undertake significant efforts to comply with these forthcoming regulations. Additionally, existing mandatory reporting requirements, such as those pertaining to diversity, show a clear need to mandate firms' public disclosure. Furthermore, the report suggests that similar requirements should extend to the disclosure of total compensation ratios for not only CEOs but all C-suite executives.

The Open for Good Initiative at the UCLA Center for Impact at Anderson aims to provide transparent and accessible insights into the corporate sustainability disclosures of the S&P 500.

II. INTRODUCTION

Over the past decade, sustainability issues have gained prominence among the public, investors and consumers, prompting firms to disclose their corporate sustainability practices and performance. While this has led to an increase in the availability of sustainability information, it has also resulted in significant discord and confusion. Various disclosure frameworks, such as the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), the Task Force on Climate-Related Financial Disclosures (TCFD), the Carbon Disclosure Project (CDP), the World Economic Forum's (WEF) Stakeholder Capitalism Metrics and the International Sustainability Standard Board (ISSB), have emerged, highlighting the need for convergence. Furthermore, mandated climate-related disclosure requirements also exhibit significant disparities, as Europe and California have demonstrated. Absent a standardized definition of the topics that disclosures should encompass and the metrics for assessing performance, stakeholders, including the public, other firms and investors, have struggled to effectively utilize disclosed sustainability information in comparing firms or making investment decisions.

The Open for Good Initiative

To address this challenge, we have launched the Open for Good Initiative at the UCLA Center for Impact at Anderson, which aims to bring clarity to sustainability disclosures within the S&P 500 and serve as a resource that firms, investors and the public can access for transparent insights into corporate sustainability.

The Open for Good initiative tracks disclosures by the S&P 500 listed firms, focusing on key topics and metrics covering the range of environmental, social and governance (ESG) issues. In spring 2023, we released our inaugural Transparency Index, highlighting those companies with the highest rates of disclosure in terms of the Open for Good metrics. In this State of Corporate Sustainability report, we delve deeper into the substance of those disclosures involving three key topics: Climate Change, Diversity and Pay Ratios. We also explore areas for improvement in disclosure and critical topics with which companies must grapple. Through these reports and our website, we work to bring clarity to the corporate sustainability landscape and serve as a source of accessible and transparent insights into corporate sustainability.



III. DATA AND METHODOLOGY

This report presents an analysis of the data the Open for Good project collects; namely, public information that firms within the S&P 500 have disclosed.² For our first report, we collected data on 39 metrics spanning Environmental, Social and Governance topics. Initially, this set included both mandatory and pro forma disclosures, as detailed in the 2022 State of Corporate Sustainability Disclosure report.

To enhance our focus on voluntary measures that more directly reflect environmental and social performance, we refined the Open for Good metric set. Nonetheless, we maintained data collection on the CEO-to-median-employee pay ratio. Mandatory for publicly traded companies in the U.S., this ratio offers valuable insights into income inequality and firms’ social contributions. However, since it is a required disclosure, we exclude it from our calculation of disclosure rates.

We sourced publicly available data from sustainability reports, firm websites and public filings with the Securities and Exchange Commission (SEC) from 2019 to 2022. For each metric, we evaluated whether firms disclosed relevant information fully, partially or not at all. Additional information on the S&P 500’s disclosure of sustainability information appears in Open for Good’s 2023 Transparency Index, available on the UCLA Anderson Center for Impact website.³

Following data collection, we ensured accuracy through cross-verification by a second team member for each entry. The team examined and rectified any identified inconsistencies. We also conducted outlier checks for each metric, to further confirm its accuracy.

We derived our metrics from the WEF’s Stakeholder Capitalism Metrics because they represent some of the most agreed-upon metrics. However, we modified some on the basis of the results of our earlier research, which [The State of Corporate Sustainability Disclosure \(2022\)](#) outlined.

IV. OVERALL DISCLOSURE

The Open for Good metrics represent fairly common disclosure topics, including characteristics of the board, GHG emissions and workforce diversity. For each metric, companies received a score of “0” if they did not disclose responsive information, “1” if they fully disclosed the relevant information or “0.5” if they partially disclosed the responsive information. A company might receive a “0.5” score if, for example, instead of reporting Scope 1 GHG emissions, the company reported a combined number for Scopes 1 and 2. Calculating a topic (E, S, G) score for each company entailed averaging the disclosure score on the corresponding metrics, and creating a disclosure score on each topic for the S&P 500 was the result of averaging the score for each company. The metrics we assessed appear in Table 1.

Table 1: Open for Good Metrics Assessed

Environment	Social	Governance
• Scope 1 emissions • Scope 2 emissions • Scope 3 emissions • TCFD • Land use • Water usage • Water usage from high-stress areas	• Workforce age diversity • Workforce gender diversity • Workforce ethnic diversity • CEO-to-median-employee pay ratio*	• Board members with environmental competencies • Board members with social competencies • Percentage of women on the board • Percentage of underrepresented social groups on the board • Identification of material issues

* Mandatory disclosure, not included in Figure 1 disclosure rate calculation

Figure 1 below depicts the disclosure rates among the S&P 500 firms. Across the three key areas of Environmental, Social and Governance, the rates of disclosure are relatively similar, with the Social dimension exhibiting a marginally higher level of disclosure. However, please note that the disclosure calculation excludes one specific Social metric we collect; namely, the ratio of the CEO’s total compensation to the median employee’s. This is because companies must disclose this information annually in their proxy statements.

Consequently, even though the Open for Good metrics encompass a range of relatively standard topics within ESG areas, the average rates of disclosure remain fairly low, averaging 55%.

Figure 1: Disclosure Rate by Category

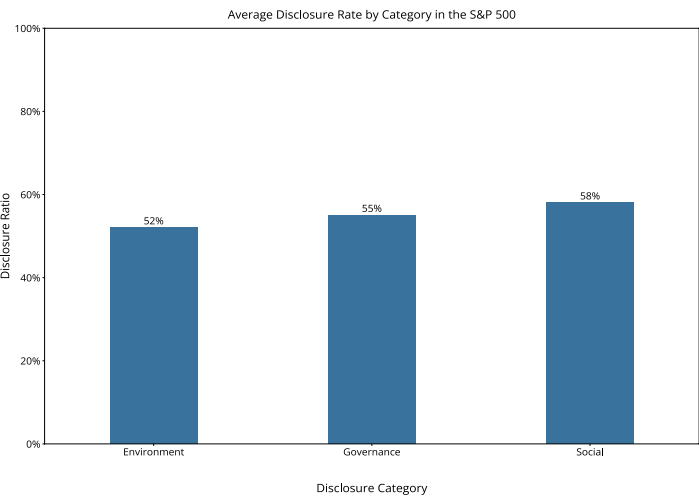


Figure 1 displays the average disclosure rate by category for the Environmental, Social and Governance metrics. Firms receive a disclosure score for each metric: “1” for full disclosure, “0.5” for partial disclosure or “0” for no disclosure. The average disclosure rate is then calculated by averaging the disclosure score for each metric within the respective category.

V. GHG EMISSIONS

Greenhouse gas emissions are some of the most reported metrics among Environmental and Social disclosures.

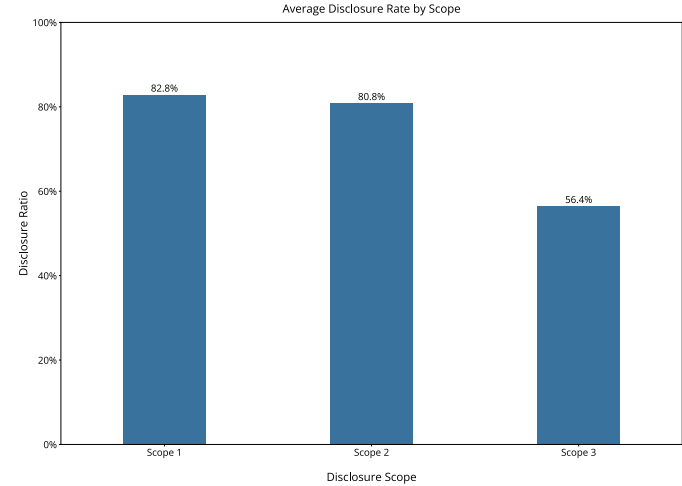
The term “greenhouse gas” (GHG) refers to gases that trap heat in the Earth’s atmosphere.⁴ The most commonly discussed GHG is carbon dioxide, making up nearly 80% of U.S. GHG emissions. However, other GHGs include methane, nitrous oxide and fluorinated gases.⁵ While these all contribute to trapping heat in the atmosphere, some gases trap significantly more than others, referred to as the “Global Warming Potential” of a gas. Thus, discussing GHG emissions commonly includes reporting amounts in units of carbon dioxide equivalent (CO₂e). This is calculated by taking the amount of the non-CO₂ gas and calculating how much CO₂ it would take to result in the same amount of global warming potential. As an example, 1 metric ton of methane equals 28 metric tons of carbon dioxide equivalent (CO₂e).⁶

Generally, greenhouse gas emissions comprise three types, or “Scopes.” Scope 1 emissions represent emissions by sources the company owns and controls.⁷ Scope 2 emissions arise from the company’s purchase of energy to support its operations.⁸ And Scope 3 emissions represent the indirect emissions from the company’s entire value chain, both upstream and downstream.⁹ The GHG Protocol provides a common methodology for calculating greenhouse gas emissions.¹⁰

We focus on the GHG emissions of the S&P 500 companies because they represent a significant portion of the total GHGs the United States emits. In 2021, the U.S. recorded a total of 6,340 million metric tons of CO₂e emissions.¹¹ According to the publicly disclosed data that the Open for Good initiative collected, the Scope 1 emissions alone from the S&P 500 make up about 18% of the total reported U.S. GHG emissions.

Across the S&P 500, the average disclosure rate for Scope 1 emissions is approximately 83% and 81% for Scope 2. The average disclosure rate for Scope 3 emissions falls to approximately 56% of S&P 500 companies (see Figure 2). Despite these relatively high disclosure rates, especially for Scope 1 and Scope 2 emissions, a critical issue arises with the depth of the information provided, which often lacks comprehensive details essential for accurately assessing the full impact of an organization’s emissions.

Figure 2: GHG Disclosure by Scope



GHG emissions reporting utilizes three scopes. In Figure 2, for example, calculating the average disclosure rate for Scope 1 averages the Scope 1 disclosure scores (0, 0.5 or 1) that firms have received.

1. Scope 1 emissions

When we categorize them by sector using the Global Industry Classification Standard (GICS), we see wide sectoral discrepancies in the amounts of Scope 1 emissions, as Figure 3 shows.

Figure 3: Average Reported Scope Emissions by Sector

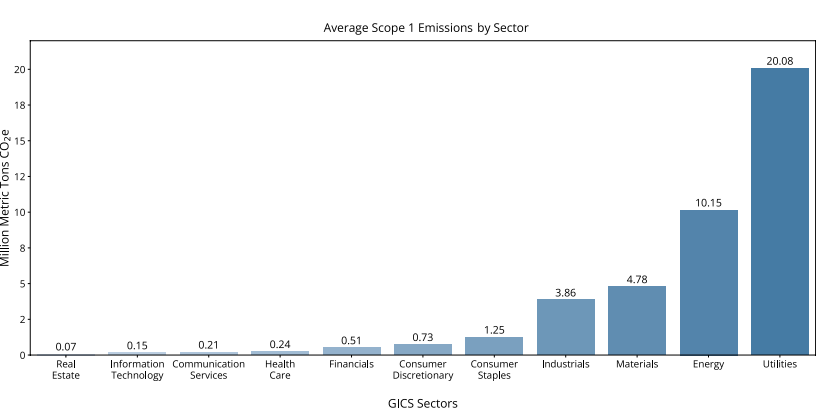


Figure 3 illustrates the average GHG Scope 1 emissions for each of the 11 sectors of the S&P 500. Not every firm discloses Scope 1 information, so the calculation of these averages involves only the subset of firms within each sector that report their Scope 1 information. For example, within the Industrials sector, the average reported Scope 1 emissions are 3.86 million metric tons of CO₂e.

On average, each of the 27 companies within the Utilities sector emits around 20 million metric tons of CO₂ equivalent. Collectively, this sector accounts for about 40% of the Scope 1 emissions the S&P 500 companies report. Figure 4 below provides a visual representation of the proportion of companies in each sector that report at least some Scope 1 emissions data. In total, 417 companies of the S&P 500 disclose at least some information regarding their Scope 1 emissions — that is, 417 companies received a disclosure score of either 0.5 (partial) or 1 (full) for the Scope 1 emissions metric.

Figure 4: Average Disclosure Rate of Scope 1 Emissions by Sector

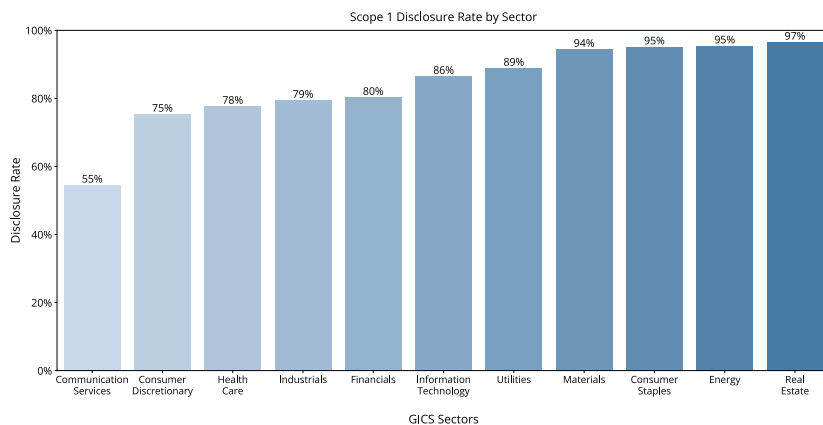


Figure 4 illustrates the average disclosure rate of Scope 1 emissions by sector. For example, the Industrials sector has an average disclosure rate of 79%, calculated by averaging the individual disclosure scores (0, .5 or 1) of all companies within that sector.

In our analysis of the 417 S&P 500 companies that report at least some Scope 1 emissions data (receiving a score of full or partial disclosure), we observe a significant trend. Companies with the highest average emissions also tend to have more comprehensive Scope 1 disclosures. Specifically, in sectors known for high average emissions — namely, Utilities, Energy and Materials — only five out of the combined 76 companies in these sectors do not report their Scope 1 emissions. This contrasts sharply with the Communication Services sector, where nearly half of the companies (10 out of 22) do not disclose their Scope 1 emissions. However, notably, the available data shows that companies in the Communication Services sector generally have a lower average Scope 1 emissions footprint than sectors with higher levels of emissions, so the low rate of reporting may be less consequential.

Interestingly, because Scope 2 emissions focus on a company's purchased energy, the Scope 1 emissions of the Utilities companies represent the Scope 2 emissions of most other companies. Their high Scope 1 disclosure rates may provide insight into those other companies' broader Scope 2 emissions.

2. Scope 2 emissions

There are two primary methodologies to calculate a firm's Scope 2 emissions. The market-based method determines emissions on the basis of the company's contractual agreements governing its energy purchasing.¹² In contrast, the location-based method calculates emissions based on those of the grids on which the energy is consumed.¹³ While both methods are valid, and companies may choose to disclose their emissions according to one or both methods, knowing which method a company uses to report Scope 2 emissions is critical because market-based and location-based figures may vary significantly. For example, as Figure 5 shows, American Express discloses both categories of Scope 2 emissions. Its market-based emissions for 2022 were 3,849 MT CO₂e, but its location-based Scope 2 emissions were 86,734 MT CO₂e, more than 20 times larger.¹⁴

Figure 5: American Express Scope 2 Emissions 2022

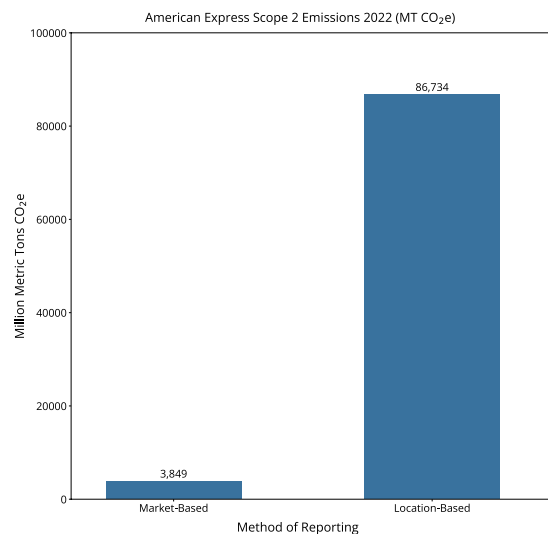


Figure 5 illustrates the importance of understanding the type of Scope 2 emissions being reported. Given the potentially vast differences in magnitude, knowing which type is at hand is key for making rational comparisons of firms.

As Figure 6 shows, within the S&P 500, 9% of companies report only location-based Scope 2 emissions, while 5% report only market-based figures. About 36% of companies provide both location- and market-based data. However, for the remaining 30% of firms, there is insufficient information to determine what method was used, leaving them to be classified as uncategorized.

Figure 6: Scope 2 Emissions Disclosure Breakdown (Market- vs. Location-Based)

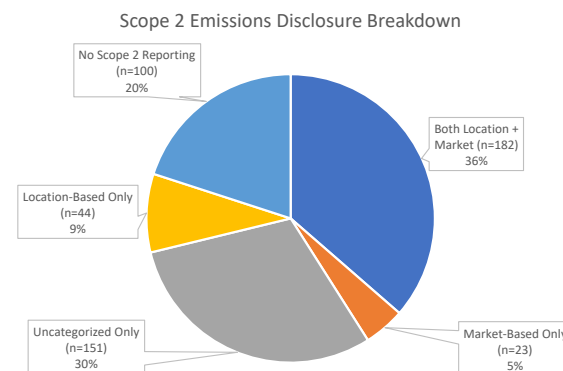


Figure 6 illustrates how the S&P 500 chose to report their Scope 2 emissions. We see the largest category of firms (181 S&P 500 firms) reporting both location- and market-based figures. However, 151 firms do not identify the method used to calculate their Scope 2 emissions, hindering broad comparisons of firm performance.

Widely accepted reporting frameworks generally advocate using both calculation methods to disclose Scope 2 emissions. The Taskforce on Climate-Related Financial Disclosures recommends that firms disclose their Scope 2 emissions, according to the

GHG Protocol,¹⁵ which emphasizes the importance of disclosing a firm's performance according to both approaches.¹⁶ Similarly, the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP) encourage companies to report their location-based Scope 2 emissions, as well as their market-based emissions when relevant.^{17,18} However, as long as these disclosures remain voluntary, firms retain the discretion to decide which, if any, Scope 2 data they disclose.

Therefore, while Scope 2 emissions disclosure prevails among S&P 500 companies, the information's usefulness for stakeholders aiming to compare firm performance is limited if the companies do not disclose their emission-calculation methodology. Enhancing the utility of these disclosures requires firms to provide not only quantitative data but also the context and crucial details that underpin the figures.

3. Scope 3 emissions

In terms of disclosure, Scope 3 emissions present an even greater challenge. Overall, fewer companies disclose Scope 3 information, with evident disparities between sectors, as Figure 7 shows. The Energy sector, with higher levels of Scope 1 and 2 emissions, exhibits the lowest rate of Scope 3 emissions disclosures. This lack of transparency in the Energy sector on a crucial and significant aspect like Scope 3 emissions hinders stakeholders' ability to fully comprehend the sector's comprehensive emissions impact. Especially in light of the sector's substantial contribution to overall emissions, the omission of these disclosures skews the understanding of the total emissions landscape.

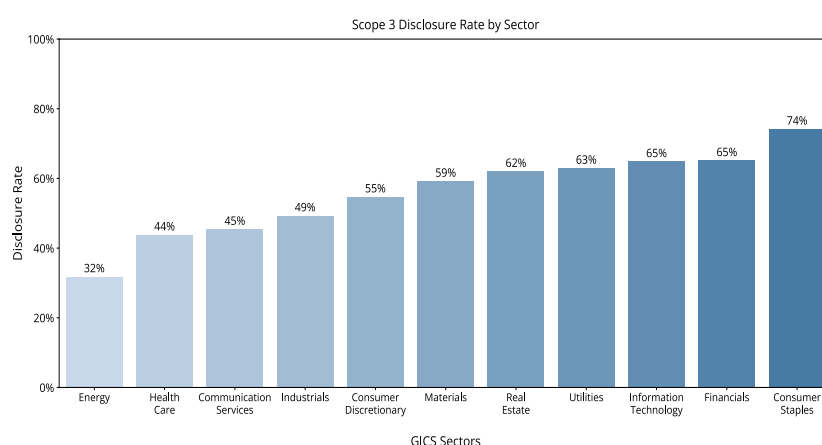


Figure 7: Scope 3 Disclosure Rate by Sector

Figure 7 highlights the average sectoral disclosure rate of Scope 3 emissions. For example, the Real Estate sector has an average disclosure rate of 62%, calculated by averaging the individual disclosure scores (0, .5 or 1) of all companies within the sector.

As with Scope 2, the disclosed Scope 3 data frequently lacks comparability and context. First, companies must contend with the extensive range of information that Scope 3 emissions encompass. The GHG Protocol categorizes Scope 3 into 15 distinct categories,

as Table 2 shows. These categories encompass a company's indirect emissions throughout its entire value chain, both upstream and downstream. The specific categories appear below, and further information is available in the GHG Protocol.¹⁹

Table 2: GHG Scope 3 Categories

1. Purchased goods and services	9. Downstream transportation and distribution
2. Capital goods	10. Processing of sold products
3. Fuel- and energy-related activities	11. Use of sold products
4. Upstream transportation and distribution	12. End-of-life treatment of sold products
5. Waste generated in operations	13. Downstream leased assets
6. Business travel	14. Franchises
7. Employee commuting	15. Investments
8. Upstream leased assets	

Companies may have more control over the relevant emissions data for things in Categories 6 (Business travel) and 7 (Employee commuting). However, for much of the Scope 3 data, companies must obtain data from third-party suppliers, which, in turn, must also obtain data from their suppliers. Consequently, the Scope 3 emissions of a single large company can have considerable reach, effectively extending deep into various levels of the economy.

Companies often report only a subset of the Scope 3 categories rather than providing a complete inventory. This approach presents two major issues for stakeholders. First, the various categories do not contribute equally to a company's overall Scope 3 emissions footprint. Therefore, knowing how a company performs in some categories does not provide a comprehensive view of its total Scope 3 emissions. For example, Becton Dickinson (BD), a large medical technology company, offers a breakdown of its Scope 3 emissions in Table 3. In BD's case, Categories 1 (Purchased goods and services) and 12 (End-of-life treatment of sold products) significantly outweigh the emissions appearing in the other reporting categories.

Table 3: GHG Scope 3 Breakdown Example

Scope 3 Category	MT CO ₂ e
1. Purchased goods and services	3,128,376
2. Capital goods	87,249
3. Fuel- and energy-related activities	148,181
4. Upstream transportation and distribution	601,174
5. Waste generated in operations	20,725
6. Business travel	62,029
7. Employee commuting	20,400
8. Upstream leased assets	619
9. Downstream transportation and distribution	286,273
10. Processing of sold products	Not Relevant
11. Use of sold products	281,742
12. End-of-life treatment of sold products	2,355,929
13. Downstream leased assets	1,940
14. Franchises	Not Relevant
15. Investments	Not Relevant
Total	6,994,637

Second, considering that Scope 3 can comprise 70% or more of a company's total emissions footprint, accurately assessing a company's entire environmental impact requires a complete inventory.²⁰ In the context of BD, Scope 3 emissions represent more than 90% of the company's total emissions footprint, as Figure 8 shows.

Figure 8: Becton Dickinson (BD) Emissions Footprint 2022

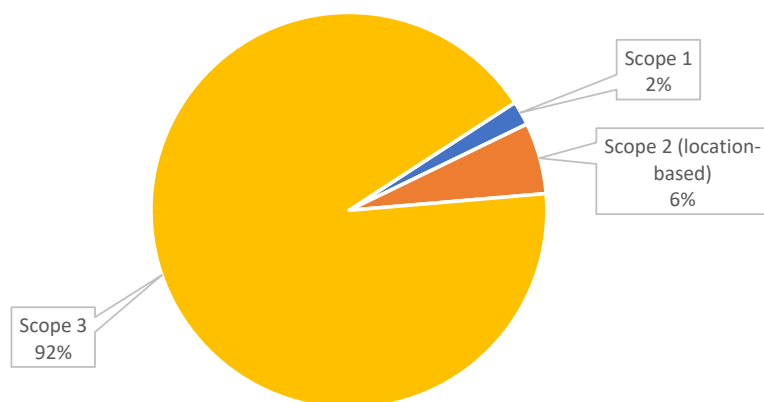


Figure 8 illustrates the distribution of Becton Dickinson's (BD) emissions among Scopes 1, 2 and 3. BD's Scope 1 emissions represent only 2% of its overall footprint.

Although GHG emissions data is quantitative and widely reported, using it to compare firm performance remains difficult because firms often do not disclose sufficient details regarding their methodology and the context of their disclosures.

VI. CLIMATE STRATEGY

Alongside the disclosures of emissions, companies are increasingly disclosing some of their strategies to ensure business resilience against future climate change risks. Companies employ various methods, but the Task Force on Climate-Related Financial Disclosures (TCFD) has emerged as a notable standard. The TCFD consists of 11 recommended qualitative disclosures covering governance of climate-related risks and opportunities, business strategy, risk management, and climate metrics and targets.²¹ Figure 9 shows wide adoption of TCFD recommendations across various sectors. These qualitative disclosures have the potential to provide insights into a company's readiness to manage climate risks and opportunities. However, their qualitative nature also poses challenges in determining whether what they reflect leads to genuine preparation or are mere instances of greenwashing.

Figure 9: TCFD Disclosure Rate by Sector

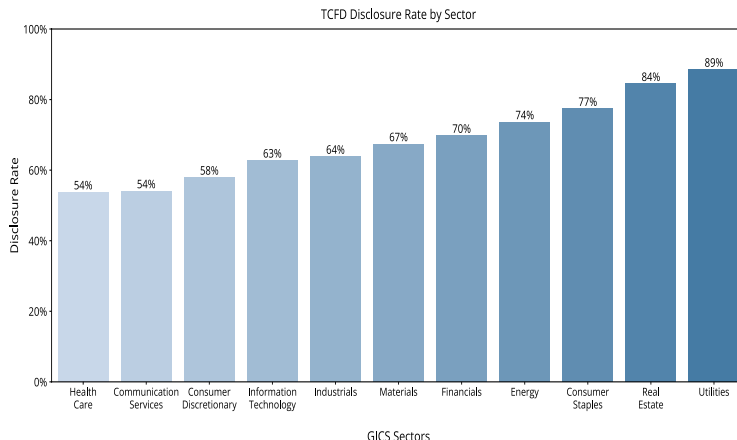


Figure 9 illustrates the overall disclosure rate of the TCFD by sector. Because the TCFD consists of 11 disclosures, the TCFD disclosure score for each firm is the result of averaging the disclosure score (0, .5 or 1) of the firm for each disclosure. Calculating the sector average was the result of averaging each firm's TCFD disclosure score within the sector.

In sum, the prevalent use of TCFD disclosures among the largest U.S. companies provides insights into their climate strategies. However, with only about half of S&P 500 companies currently adhering to TCFD standards, many companies will need to catch up to comply with the upcoming regulations that require similar disclosures. Although the TCFD's qualitative nature may hinder comparability, combining these disclosures with emissions reporting can provide a well-rounded picture of a company's efforts to tackle climate change.

VII. THE COMING REGULATIONS

For the first time, the United States government is poised to enact regulations mandating the disclosure of climate information. Two major regulations of interest are coming from the SEC and the State of California.

A. The SEC's Proposed Rule

In March 2022, the SEC issued a proposed rule titled "The Enhancement of Standardization of Climate-Related Disclosures for Investors." In an effort to respond to investor demand for reliable, decision-useful information on public company climate performance, the proposed rule would require companies to provide climate-related disclosures in their annual filings.²² These disclosures include information on climate risks that are reasonably likely to have a material impact on the company; the company's Scope 1, 2 and 3 emissions; and, potentially, financial metrics to incorporate in the company's audited financial reports. The final rule is scheduled to arrive in early 2024.

B. California's Regulations

In September 2023, the California Legislature passed a slate of environmentally focused bills, including two key bills addressing climate change: SB 253 and SB 261. SB 253, the Climate Corporate Data Accountability Act, will require companies that do business in California and have total annual revenues in excess of \$1 billion to disclose their Scope 1, 2 and 3 GHG emissions and obtain assurance of their disclosure.²³ Requirements for Scope 1 and 2 disclosures and assurances will take effect in 2026, and companies will have an additional year (until 2027) to disclose and assure their Scope 3 emissions.

SB 261 — Greenhouse Gases: Climate-Related Financial Risk — will require companies to publicly disclose biennially their climate-related financial risks and the measures they are putting in place to reduce and mitigate those risks. SB 261 applies to businesses with total annual revenues over \$500 million that transact business in California.²⁴

Taken together, these two California regulations will require significant changes in how companies disclose their climate data. Not only will they require companies to be more precise in how they disclose, but the potential assurance requirements may increase the reliability of the reported data. Further, companies disclosing according to set requirements will likely ensure more comparable data.

These regulations represent an important step forward in driving climate disclosures' transparency, accountability and comparability.

In sum, the coming regulations represent a major advance in ensuring stakeholders' access to decision-useful and comparable information. However, given the state of current public disclosure of climate data,

companies may not be prepared to undertake changes in data collection and reporting necessary to meet the regulations' requirements.

Comparing the current state of corporate sustainability disclosure on climate data with the requirements of SB 253 and SB 261, firms will need to significantly change their disclosure practices to comply with the coming mandates. For example, nearly half of the S&P 500, the largest and most well-resourced companies in the U.S., have not yet disclosed their Scope 3 data. The short time frame for compliance with the coming regulations will also necessitate that companies engage additional resources to comply. Companies may need to hire or train employees or contract with consultants to create climate risk forecasts, gather and accurately report standardized data, implement rigorous governance controls, and interpret and communicate their performance.

Key Takeaway: The S&P 500's current GHG disclosure practices fall far short of the coming California and SEC requirements. Compliance will require firms to significantly alter their practices and bring on new resources by upskilling and training their employees, hiring new employees or outsourcing much of this work to consultants.

VIII. SOCIAL AND GOVERNANCE KEY METRICS: DIVERSITY

Turning to the Social and Governance metrics, key topics within both pillars relate to the diversity within companies. While the Social version of diversity metrics focuses on the makeup of the workforce, its Governance counterpart looks at diversity on the board of directors. We examine both gender and ethnic diversity among the S&P 500.

The SEC characterizes "diverse" as describing "an individual who self-identifies in one or more of the following categories: Female, Underrepresented Minority or LGBTQ+." The SEC further explains that a member of an underrepresented minority "means an individual who self-identifies as one or more of the following, Black or African American, Hispanic or Latinx, Asian, Native American or Alaska Native, Native Hawaiian or Pacific Islander, or Two or More Races or Ethnicities."²⁵ We use the term "ethnic diversity" to refer to the inclusion of underrepresented minorities in the workforce and at the board level.

A. Gender Diversity

Within the S&P 500, the average disclosure rate for gender is 84%. However, while companies appear committed to reporting these values, their performance on the gender metric falls short. Across the S&P 500, companies average only 39% women, but the spread among firms is wide. For example, Ulta Beauty, Inc., a beauty salon company in the

Consumer Discretionary sector, reports that its workforce is 94% women. At the other end of the spectrum, Norfolk Southern Company, a railroad company in the Industrials sector, discloses that just 4.4% of its workforce is women. As a reference, within the broader U.S. labor force, women represent approximately 47% of the employed population.²⁶

Beyond the company level, we also see distinct differences in the percentage of women by sector (Figure 10).

Figure 10: Average Percentage of Women Employees by Sector in the S&P 500

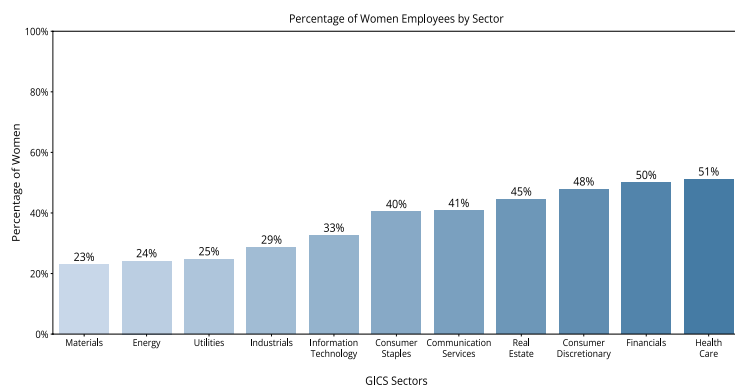


Figure 10 provides the average percentage of women employees by sector. For example, in the Materials sector, the companies that report gender disclose that their workforce is on average 23% women.

The Health Care and Financials sectors have the highest average percentage of women, with 51% and 50%, respectively, while Materials has the lowest with 23%.

In addition to workforce diversity, board diversity is a key indicator of good governance. Within the S&P 500, the average representation of women on boards is only 29%, representing a range among companies from a maximum of 69% to a minimum of 0%. Figure 11 represents the distribution of the percentage of women on boards among the S&P 500, 80% of whose companies have between 14% and 38% women on the board.

Figure 11: Distribution of Percentage of Women on Boards

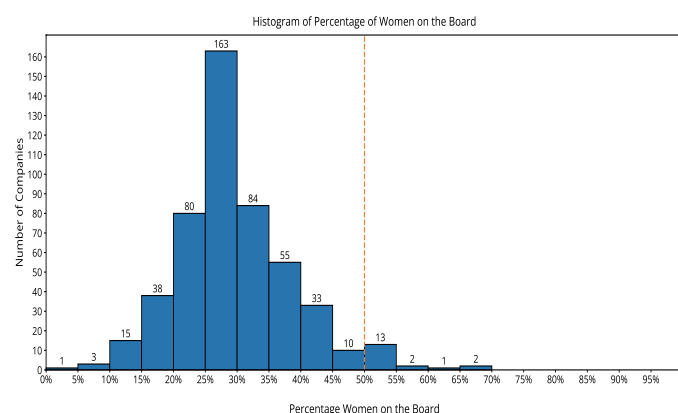


Figure 11 represents the distribution of the percentage of women on the board of companies in the S&P 500. For example, 163 firms in the S&P 500 have a board whose membership is between 25% and 30% women, while 19 companies have boards whose membership is fewer than 15% women.

Breaking down the gender diversity of the board by sector, we also see significantly less spread among sectors than the gender diversity of the workforce (see Figures 10 and 12). At the sectoral level, Industrials and Energy have the lowest percentage of women on their boards (25%), and the industries with the highest percentage are Consumer Staples and Consumer Discretionary, both of which have an average of 32% women on the board. In contrast, the average gender diversity of the workforce by sector ranges from 23% to 51%.

Figure 12: Average Percentage of Women on the Board by Sector

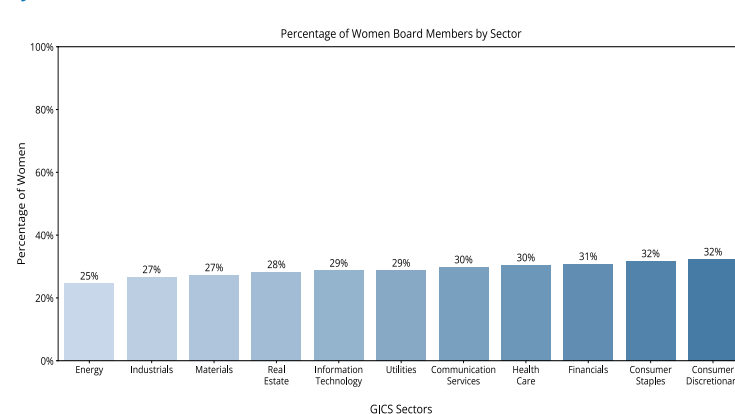


Figure 12 shows the average representation of women on the board by sector. For example, companies in the Financials sector have boards that average 31% women.

Figure 13's comparison of women's representation in the workforce versus on boards by sector reveals intriguing disparities. Despite high-level female representation in the Financials and Health Care sectors' workforces, their boards lack similar diversity. In contrast, such sectors as Energy, Materials and Utilities, where women are less represented in the workforce, show better average representation on their boards. For such sectors as Financials and Health Care, board representation lagging behind workforce diversity raises this question: Is gender diversity limited to lower-level roles, or if it is present at all management levels, what hinders women's inclusion in board leadership?

Answering this question from public data is challenging. However, more comprehensive disclosures, such as the EEO-1 form, could shed light on these disparities.

Figure 13: Average Percentage of Women Employees and Board Members by Sector

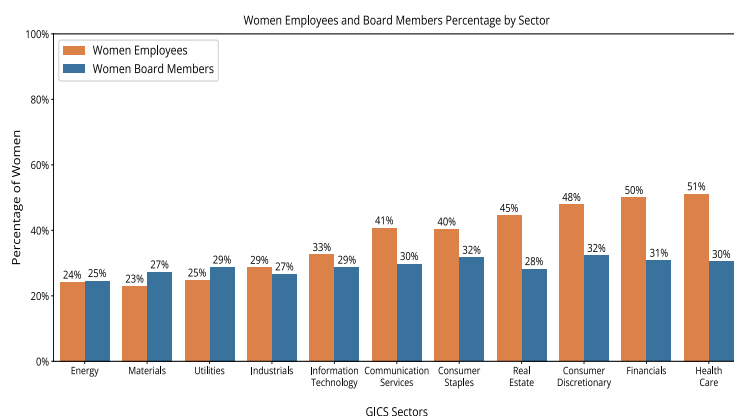


Figure 13 illustrates the difference between the percentage of women in the workforce and the percentage of women on the board, by sector. In the Energy sector, the percentage of women in the workforce is close to that of women on the board. In contrast, in the Health Care sector, women comprise a much larger percentage of workforces than of boards.

While companies are generally transparent about the presence of women on their boards and governing bodies, gender parity remains an exception rather than the norm. Several regulations passed in recent years aimed to increase representation of women on corporate boards. For instance, in 2021, California's SB 826 came into full effect, mandating a minimum number of female board members for companies with principal executive offices in the state, the requirement varying with the board size.²⁷ Similarly, Nasdaq-listed companies must disclose or explain why they do not have diverse boards (including women).²⁸ Going forward, the Open for Good initiative will track these numbers to assess whether firms are indeed increasing the representation of women at the director level.

In sum, despite high levels of disclosure regarding the gender diversity of S&P 500 companies and their leadership, female representation lags across numerous sectors.

B. Ethnic Diversity (Board and Workforce)

Along with gender diversity, we also examine corporate disclosure of ethnic diversity, categorized according to the federal standards. Within the United States, the latest census identifies approximately 58.9% of the population as White (not including Hispanic or Latino), 16.6% as Hispanic or Latino, 13.6 percent as Black or African American, 1.3% as American Indian or Alaska Native, 6.3% as Asian, 0.3% as Native Hawaiian or Other Pacific Islander, and 3% as Two or More Races.²⁹

To provide comprehensive disclosure, a company should report the percentage of employees in each of these categories. Federal regulations mandate that S&P 500 companies collect and report data on their workforce's gender and ethnic diversity, using the Equal Employment Opportunity Commission's EEO-1 form. Consequently, these firms possess the necessary data for public disclosure, should they choose to do it.

The S&P 500's average disclosure rate for ethnic diversity is 61%, including companies that disclose some information about ethnic diversity that does not align with federal categories. Figure 14 shows the S&P 500 average ethnic diversity disclosure rate by federal categories.

Figure 14: Percent of S&P 500 Companies Disclosing Federal Ethnic Diversity Categories

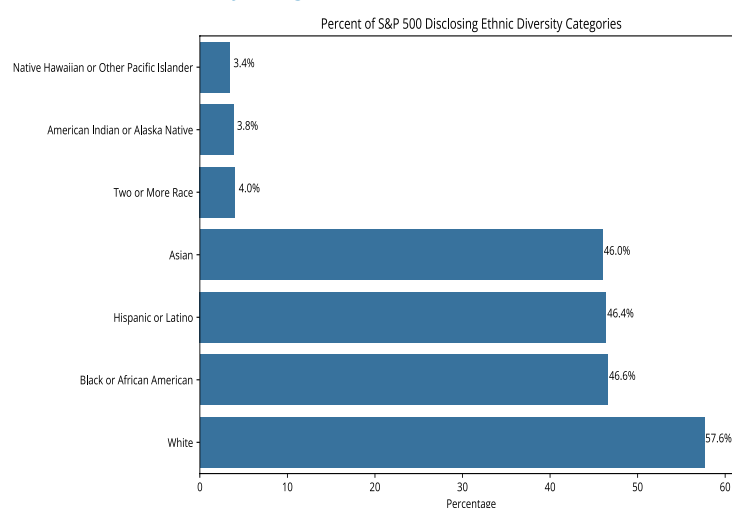


Figure 14 illustrates the percentage of companies that report information on each federal ethnicity diversity category. Of the S&P 500, 57.6% of companies disclose information on the percentage of their employees who are White.

Companies seem more inclined to disclose workforce percentages for Asian, Hispanic or Latino, Black or African American, and White employees. However, why there is less disclosure for the other three federally required categories — Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and Two or More Races — is puzzling, given that collecting this data is a federal requirement. The reasons behind this lack of disclosure remain unclear.

Figure 15 breaks down the data by sector and reveals that the Consumer Discretionary and Information Technology sectors have the most diverse workforces.

Figure 15: Average Diversity by Sector

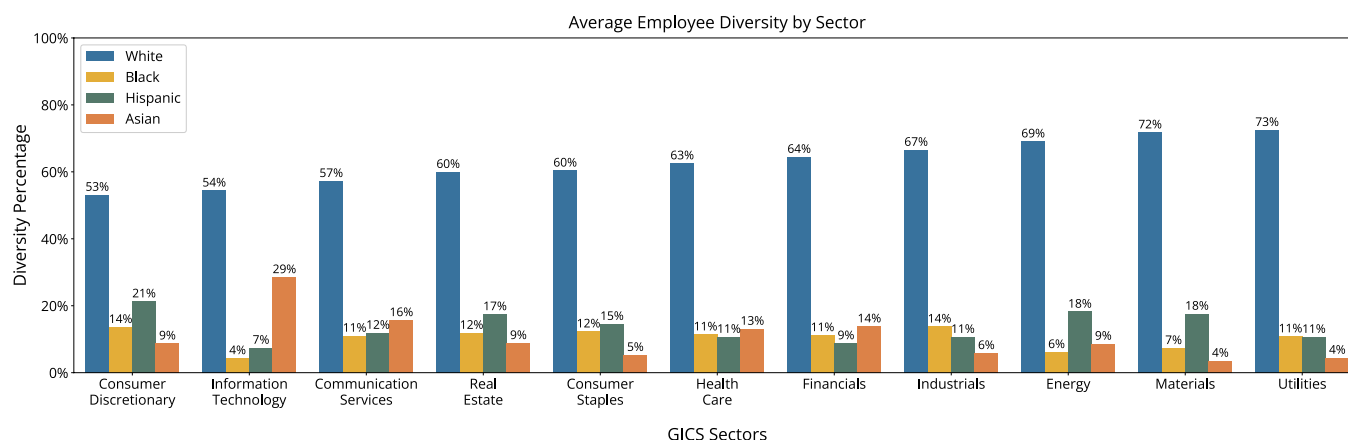


Figure 15 illustrates the average diversity of the S&P 500 workforce by sector. The Utilities sector has the lowest average diversity, disclosing that those companies have a workforce that is on average 73% White, 11% Black, 11% Hispanic and 4% Asian.

The EEO-1 form also includes important insights into how the various levels of the organization represent diversity. Merely disclosing the overall ethnic diversity of a workforce does not provide insight into whether an organization's diversity is consistent or restricted to certain positions.

We also examine the diversity of the board of directors in Figure 16. S&P 500 companies have boards of directors that on average are 25% diverse. At the sectoral level, there is a fairly narrow spread. The Communication Services sector has the highest percentage of diverse board members at 34%, and the Consumer Discretionary and Energy sectors have the lowest at 22%.

Figure 16: Average Percentage of Diverse Board Members

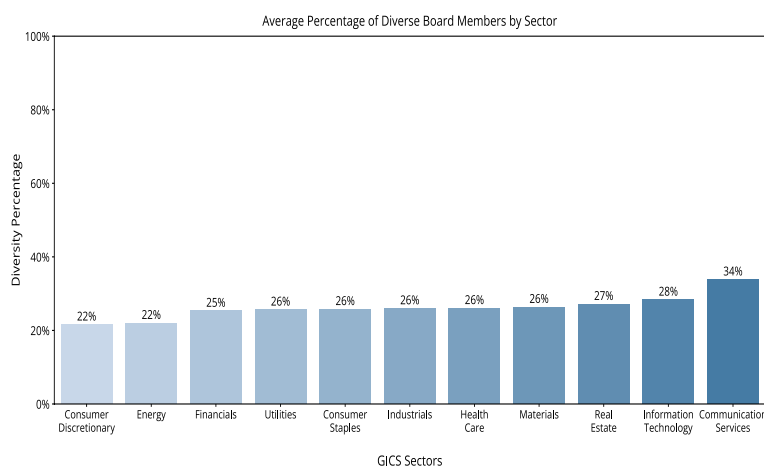


Figure 16 provides the average percentage of diverse board members by sector in the S&P 500. We see that Utilities, Consumer Staples, Industrials, Health Care and Materials all average boards that are 26% diverse.

When we compare diversity at the board level to that of the employees by sector (see Figure 17), the largest discrepancy is in the Consumer Discretionary sector, where 47% of the workforce is diverse, but on average, only 22% of the board is. In contrast, within the Utilities sector, boards on average are 26% diverse, and the workforce is 27% diverse.

Figure 17: Average Percentage of Diverse Employees and Board Members

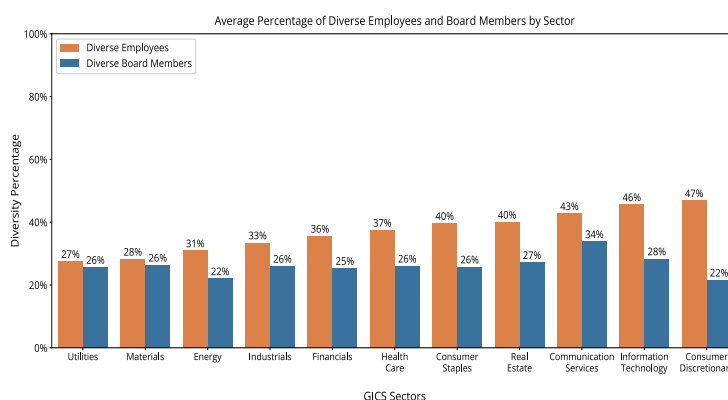


Figure 17 shows the average percentage of diverse employees and board members by sector. For example, we see that Consumer Discretionary sector companies have workforces that are on average 47% diverse, while their boards are only on average 22% diverse.

In sum, these disclosures demonstrate significant room to improve the overall diversity of the workforce in the S&P 500. However, disclosures pursuant to the EEO-1 form can provide insights into whether that diversity is meaningful at all levels of the organization or confined to positions with little opportunity for advancement.

Key Takeaway: For both ethnic and gender diversity, the diversity of the board of directors (generally low) rarely even matches the diversity of the workforce on a sectoral basis. Companies in the S&P 500 have significant work to do to ensure that their boards of directors reflect the diversity of their respective workforces.

C. CEO-to-Median-Employee Pay Ratio

Along with disclosures related to emissions and diversity, we seek to understand how companies compensate their executives relative to their employees. Public companies must disclose annually the ratio of their CEO's total compensation to that of the median employee. On average, the CEO-to-median-employee pay ratio among the S&P 500 is 305, and it ranges from 0 to 5,733, excluding one outlier. Figure 18 represents the average CEO-to-median-employee pay ratio by sector.

Figure 18: Average CEO-to-Median-Employee Pay Ratio by Sector³⁰

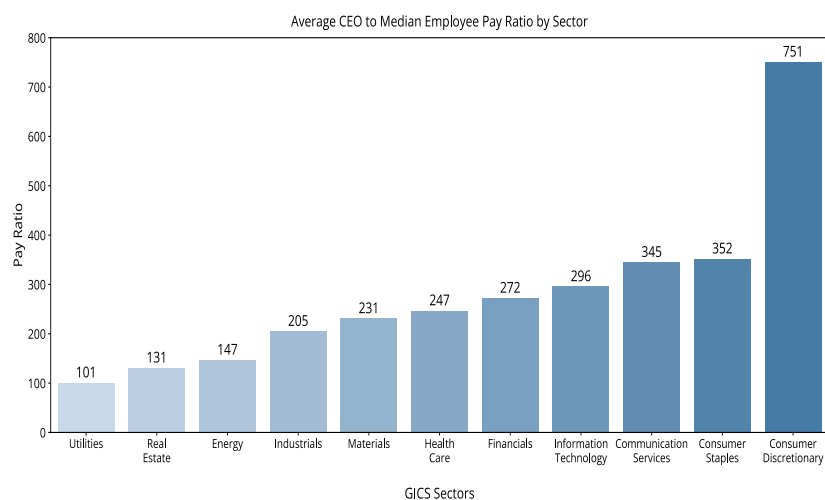


Figure 18 illustrates the average CEO-to-median-employee compensation by sector. For example, within the Utilities sector, on average, companies compensate their CEOs at 101 times what they pay their median employees.

Notably, at the company level, this ratio can vary significantly due to one-time compensation awards. For example, between 2018 and 2023, Microsoft's CEO-to-median-employee pay ratio varied between 154 and 250. From the current sample, the Utilities sector has the lowest average ratio at 101:1, which the regulated nature of the industry may partly explain, while Consumer Discretionary has the highest average ratio at 751:1.

The variance in the CEO-to-median-employee compensation ratio may be due in part to what the CEO's compensation package includes. Along with salary, the CEO's compensation also includes bonuses, pensions, incentive plans and equity, (e.g., stock and stock options).³¹ This definition thus includes compensation not yet realized, such as stock options, raising questions of whether the comparison of the CEO to the median employee is actually comparing "apples to apples." Additionally, as the CEO is only one member of the executive team, and significant pay discrepancies among the C-suite officers may exist, comparing the average compensation of the executive officers to the median employee might provide a more stable metric.

Key Takeaway: This CEO-to-Median-Employee Pay Ratio provides some information about compensation decisions within an organization, but its potential for significant fluctuations between years may indicate that a less variable metric for evaluating executive compensation could prove more insightful.

IX. CONCLUSION

Many S&P 500 companies produce sustainability reports, yet comparability remains an issue, even in areas like greenhouse gas emissions. Companies can improve clarity by transparently referencing their methodologies and expanding their reporting focus to include their most significant societal and environmental impacts.

In this report, we focus on key S&P 500 metrics collected via the Open for Good initiative, but ESG issues extend beyond this report. Companies must expand their focus as sustainability challenges grow. Key environmental metrics, such as water consumption and biodiversity, are less reported but essential. The Taskforce on Nature-Related Financial Disclosures (TNFD) offers guidance on biodiversity, emphasizing the importance of actionable data that combines quantitative and qualitative aspects for meaningful comparisons.

Firms can enhance the transparency of social disclosures by sharing EEO-1 forms and examining their human rights impact.

With evolving regulations, particularly regarding climate change disclosures, companies must prepare to integrate sustainability more deeply into their operations. Ultimately, the drive toward comprehensive and transparent sustainability reporting is not just about regulatory compliance. It is a strategic imperative that reflects a company's commitment to responsible corporate citizenship and long-term value creation.

X. APPENDICES

A. List of Current Metrics

Environmental Metrics

- Scope 1 emissions
- Scope 2 emissions
- Scope 3 emissions
- TCFD
- Land use
- Water usage
- Water usage from high stress areas

Social Metrics

- Workforce age diversity
- Workforce gender diversity
- Workforce ethnic diversity
- CEO-to-median-employee pay ratio*

Governance Metrics

- Board members with environmental competencies
- Board members with social competencies
- Percentage of women on the board
- Percentage of underrepresented social groups on the board
- Identification of material issues

B. List of Companies

Phillips 66	2020	Ulta Beauty, Inc.	2020	Fortive Corporation	2021
The Home Depot, Inc.	2020	Tapestry, Inc.	2020	Globe Life Inc.	2020
Apple Inc.	2020	Ralph Lauren Corporation	2021	Federal Realty Investment Trust	2020
Berkshire Hathaway Inc.	2020	PVH Corp.	2020	Generac Holdings Inc.	2021
The Kroger Co.	2020	Quest Diagnostics Incorporated	2020	Garmin Ltd.	2020
McKesson Corporation	2020	Carnival Corporation	2020	W.W. Grainger, Inc.	2021
AmerisourceBergen Corp.	2020	Monster Beverage Corporation	2020	Corning Incorporated	2020
Amazon.com, Inc.	2020	MGM Resorts International	2020	Hologic, Inc.	2021
Albemarle Corporation	2020	Conagra Brands, Inc.	2020	Huntington Bancshares Incorporated	2020
Akamai Technologies, Inc.	2020	Domino's Pizza, Inc.	2021	Hormel Foods Corporation	2020
Allegion Public Limited Co.	2021	The Clorox Company	2021	Henry Schein, Inc.	2020
Alliant Energy Corporation	2021	Caesars Entertainment, Inc.	2020	Hasbro, Inc.	2019
Ametek, Inc.	2021	Fox Corporation	2020	Howmet Aerospace Inc.	2020
American Water Works Co., Inc.	2019	Hanesbrands Inc.	2020	International Flavors & Fragrances Inc.	2020
Ansys, Inc.	2020	Discovery, Inc.	2021	Huntington Ingalls Industries, Inc.	2021
APA Corporation	2021	Duke Realty Corporation	2020	Incyte Corporation	2020
Arthur J. Gallagher & Co.	2021	Dover Corporation	2020	The Interpublic Group of Companies, Inc.	2020
Arista Networks, Inc.	2020	Hilton Worldwide Holdings Inc.	2020	Waste Management, Inc.	2020
Atmos Energy Corporation	2020	DTE Energy Company	2021	IPG Photonics Corporation	2021
AvalonBay Communities, Inc.	2020	The Hershey Company	2020	Ingersoll Rand Inc.	2020
Avery Dennison Corporation	2020	Davita Inc.	2020	Iron Mountain Incorporated	2020
Amcor PLC	2021	Kellogg Company	2020	IDEX Corporation	2020
AutoZone, Inc.	2021	Las Vegas Sands Corp.	2020	J.B. Hunt Transport Services, Inc.	2020
Ball Corporation	2020	Consolidated Edison, Inc.	2020	Juniper Networks, Inc.	2021
Broadridge Financial Solutions, Inc.	2021	Devon Energy Corporation	2021	Invesco Ltd.	2020
Alexandria Real Estate Equities, Inc.	2020	Eastman Chemical Company	2020	KeyCorp	2021
BorgWarner Inc.	2021	Enphase Energy, Inc.	2020	Keysight Technologies, Inc.	2020
Cerner Corporation	2020	Wynn Resorts, Limited	2020	Jack Henry & Associates, Inc.	2020
Bio-Rad Laboratories, Inc.	2020	Edison International	2020	Kimco Realty Corporation	2020
Church & Dwight Co., Inc.	2020	Equity Residential	2021	Leidos Holdings, Inc.	2020
Cincinnati Financial Corporation	2020	Essex Property Trust, Inc.	2020	Leggett & Platt, Incorporated	2021
Comerica Incorporated	2020	Entergy Corporation	2020	Kansas City Southern	2020
Campbell Soup Company	2021	Etsy, Inc.	2020	LKQ Corporation	2020
Copart, Inc.	2021	Evergy, Inc.	2020	LyondellBasell Industries N.V.	2021
Catalent, Inc.	2020	Expedia Group, Inc.	2020	Abbott Laboratories	2019
The Cooper Companies, Inc.	2020	Extra Space Storage Inc.	2020	Archer-Daniels-Midland Company	2019
CMS Energy Corporation	2021	Fortune Brands Home & Security, Inc.	2020	American International Group, Inc.	2019
Charles River Laboratories International, Inc.	2019	Diamondback Energy, Inc.	2021	The Allstate Corporation	2019
Franklin Resources, Inc.	2020	FirstEnergy Corp	2021	Amgen Inc.	2019
Citrix Systems, Inc.	2020	Fifth Third Bancorp	2020	Masco Corporation	2020
Bath & Body Works, Inc.	2020	FLEETCOR Technologies, Inc.	2020	Mohawk Industries, Inc.	2020
V.F. Corporation	2020	FMC Corporation	2020	Marketaxess Holdings Inc.	2021
Under Armour, Inc.	2021	Fastenal Company	2019		
		First Republic Bank	2020		

McCormick & Company, Incorporated	2021	CBRE Group, Inc.	2019	Lennar Corporation	2020
Martin Marietta Materials, Inc.	2021	Texas Instruments Incorporated	2020	McDonald's Corporation	2019
Marathon Oil Corporation	2020	Moderna, Inc.	2020	HP Inc.	2019
M&T Bank Corporation	2021	Amphenol Corporation	2020	The TJX Companies, Inc.	2020
Mettler-Toledo International Inc.	2021	CDW Corporation	2020	Mastercard Incorporated	2019
The Mosaic Company	2021	Intuitive Surgical, Inc.	2020	Crown Castle Inc.	2019
Norwegian Cruise Line Holdings Ltd.	2021	S&P Global Inc.	2020	Altria Group, Inc.	2020
NiSource Inc.	2021	Edwards Lifesciences Corporation	2020	Lockheed Martin Corporation	2019
NortonLifeLock Inc.	2021	PPG Industries, Inc.	2020	EOG Resources, Inc.	2019
Nielsen Holdings plc	2020	Baxter International Inc.	2020	Marsh & McLennan Companies, Inc.	2020
Cummins Inc.	2019	Jacobs Solutions Inc.	2020	Freeport-McMoRan Inc.	2020
Starbucks Corporation	2019	NXP Semiconductors N.V.	2020	Costco Wholesale Corporation	2020
Kimberly-Clark Corporation	2019	O'Reilly Automotive, Inc.	2020	Thermo Fisher Scientific Inc.	2019
C.H. Robinson Worldwide, Inc.	2020	eBay Inc.	2020	Mondelez International, Inc.	2019
Cognizant Technology Solutions Corporation	2020	Booking Holdings Inc.	2020	Dollar General Corporation	2020
Chipotle Mexican Grill, Inc.	2020	Illinois Tool Works Inc.	2020	Ecolab Inc.	2020
Applied Materials, Inc.	2020	KLA Corporation	2019	L3Harris Technologies, Inc.	2020
SBA Communications Corporation	2019	The Estée Lauder Companies Inc.	2020	International Paper Company	2019
Regeneron Pharmaceuticals, Inc.	2020	Ross Stores, Inc.	2019	PACCAR Inc.	2021
Live Nation Entertainment, Inc.	2020	Twitter, Inc.	2020	IQVIA Holdings Inc.	2020
Synopsys, Inc.	2020	The Sherwin-Williams Company	2019	The Progressive Corporation	2019
Lam Research Corporation	2020	Emerson Electric Co.	2019	Northrop Grumman Corporation	2019
T. Rowe Price Group, Inc.	2020	Take-Two Interactive Software, Inc.	2020	Cardinal Health, Inc.	2020
ResMed Inc.	2020	Electronic Arts Inc.	2020	Southwest Airlines Co.	2019
Cadence Design Systems, Inc.	2020	Halliburton Company	2020	Omnicom Group Inc.	2020
Moody's Corporation	2020	Prologis, Inc.	2020	Lowe's Companies, Inc.	2019
Motorola Solutions, Inc.	2020	FedEx Corporation	2020	Centene Corporation	2020
Nucor Corporation	2020	Tesla, Inc.	2019	Eli Lilly and Company	2020
Roper Technologies, Inc.	2020	Becton, Dickinson and Company	2019	Johnson Controls International plc	2021
Genuine Parts Company	2020	Stryker Corporation	2020	Simon Property Group, Inc.	2020
IDEXX Laboratories, Inc.	2020	Micron Technology, Inc.	2020	Equinix, Inc.	2020
CarMax, Inc.	2019	Lumen Technologies, Inc.	2020	CSX Corporation	2020
D.R. Horton, Inc.	2019	Union Pacific Corporation	2020	Marriott International, Inc.	2020
IHS Markit Ltd.	2020	HCA Healthcare, Inc.	2020	Eaton Corporation plc	2020
Intuit Inc.	2021	Newmont Corporation	2020	Target Corporation	2020
Trane Technologies plc	2020	Qualcomm Incorporated	2020	Automatic Data Processing, Inc.	2020
Sysco Corporation	2019	General Dynamics Corporation	2020	The Hartford Financial Services Group, Inc.	2020
Analog Devices, Inc.	2020	Boston Scientific Corporation	2020	Digital Realty Trust, Inc.	2020
Best Buy Co., Inc.	2019	ConocoPhillips	2020	Humana Inc.	2019
Host Hotels & Resorts, Inc.	2020	Tyson Foods, Inc.	2019	Philip Morris International Inc.	2019
TE Connectivity Ltd.	2020	General Mills, Inc.	2021	Nike, Inc.	2020
Dollar Tree, Inc.	2020	Biogen Inc.	2020	Gilead Sciences, Inc.	2020
Colgate-Palmolive Company	2020	Aon plc	2020	Dow Inc.	2019
		Delta Air Lines, Inc.	2019	Fiserv, Inc.	2020
		United Parcel Service, Inc.	2019		

Hewlett Packard Enterprise Company	2019	Merck & Co., Inc.	2019	NOV Inc.	2021
Baker Hughes Company	2019	Prudential Financial, Inc.	2019	NetApp, Inc.	2021
DXC Technology Company	2019	Intercontinental Exchange, Inc.	2020	3M Company	2020
Honeywell International Inc.	2020	ServiceNow, Inc.	2021	A.O. Smith Corporation	2020
DuPont de Nemours, Inc.	2020	Public Storage	2021	Accenture plc	2020
American Tower Corporation	2020	The Coca-Cola Company	2019	Activision Blizzard, Inc.	2020
United Airlines Holdings, Inc.	2019	Medtronic plc	2020	Adobe Inc.	2020
Netflix, Inc.	2020	Autodesk, Inc.	2021	Advance Auto Parts, Inc.	2020
Sempra Energy	2020	Danaher Corporation	2020	Advanced Micro Devices, Inc.	2020
PayPal Holdings, Inc.	2020	American Express Company	2019	Aflac Incorporated	2020
Linde plc	2020	Charter Communications, Inc.	2019	Agilent Technologies, Inc.	2020
Cisco Systems, Inc.	2020	CME Group Inc.	2020	Air Products and Chemicals, Inc.	2021
NVIDIA Corporation	2021	The Charles Schwab Corporation	2021	American Airlines Group Inc.	2019
Pfizer Inc.	2019	Occidental Petroleum Corporation	2020	Align Technology, Inc.	2020
Deere & Company	2020	Dexcom, Inc.	2021	Zoetis Inc.	2020
The Kraft Heinz Company	2020	Bristol-Myers Squibb Co.	2020	Whirlpool Corporation	2020
Ameren Corporation	2021	The Travelers Companies, Inc.	2019	WestRock Company	2019
Exelon Corporation	2019	The Procter & Gamble Company	2020	Western Digital Corporation	2020
Synchrony Financial	2020	Anthem, Inc.	2019	Welltower Inc.	2020
Truist Financial Corporation	2020	Microchip Technology Incorporated	2021	Wells Fargo & Company	2020
The Cigna Group	2019	Oracle Corporation	2019	The Walt Disney Company	2020
Global Payments Inc.	2021	Morgan Stanley	2019	Walgreens Boots Alliance, Inc.	2020
Duke Energy Corporation	2020	NextEra Energy, Inc.	2020	Visa Inc.	2020
Microsoft Corporation	2020	Principal Financial Group, Inc.	2020	ViacomCBS Inc.	2019
Norfolk Southern Corporation	2021	U.S. Bancorp	2020	Vertex Pharmaceuticals Inc.	2020
Fortinet, Inc.	2021	BlackRock, Inc.	2020	Verizon Communications Inc.	2019
Loews Corporation	2019	Broadcom Inc.	2020	Valero Energy Corporation	2020
Capital One Financial Corporation	2019	Dominion Energy, Inc.	2019	Brown-Forman Corporation	2021
The Goldman Sachs Group, Inc.	2019	Facebook, Inc.	2019	Ameriprise Financial, Inc.	2021
The Bank of New York Mellon Corporation	2019	Aptiv PLC	2021	AbbVie Inc.	2019
Citigroup Inc.	2019	Chubb Limited	2021	Citizens Financial Group, Inc.	2020
PepsiCo, Inc.	2019	The Boeing Company	2020	Darden Restaurants, Inc.	2021
General Electric Company	2019	T-Mobile US, Inc.	2020	Expeditors International of Washington, Inc.	2020
Johnson & Johnson	2019	MSCI Inc.	2021	Ford Motor Company	2020
Carrier Global Corporation	2021	Comcast Corporation	2020	Corteva, Inc.	2020
MetLife, Inc.	2019	The PNC Financial Services Group, Inc.	2019	News Corporation	2021
General Motors Company	2019	JPMorgan Chase & Co.	2019	Laboratory Corporation of America Holdings	2021
Illumina, Inc.	2021	American Electric Power Company Inc.	2021	Gartner, Inc.	2020
Fidelity National Information Services, Inc.	2020	Intel Corporation	2019	F5, Inc.	2020
Caterpillar Inc.	2019	Mid-America Apartment Communities, Inc.	2020	Assurant, Inc.	2021
Chevron Corporation	2019	Nasdaq, Inc.	2021	Alaska Air Group, Inc.	2020
The Southern Company	2020	NRG Energy, Inc.	2021	Kinder Morgan, Inc.	2020
Lincoln National Corporation	2019			Eversource Energy	2020
				NVR, Inc.	2021

Newell Brands Inc.	2021	West Pharmaceutical Services, Inc.	2021	Constellation Brands, Inc.	2022
Northern Trust Corporation	2021	The Western Union Company	2021	WEC Energy Group, Inc.	2020
Realty Income Corporation	2021	Abiomed, Inc.	2020	Abiomed, Inc.	2020
Old Dominion Freight Line, Inc.	2021	Boston Properties, Inc.	2020	The Williams Companies, Inc.	2020
Organon & Co.	2021	Cboe Global Markets, Inc.	2020	W. R. Berkley Corporation	2021
ONEOK, Inc.	2020	CF Industries Holdings, Inc.	2020	Weyerhaeuser Company	2020
Otis Worldwide Corporation	2021	CenterPoint Energy, Inc.	2020	Xcel Energy Inc.	2020
Paychex, Inc.	2021	Cabot Oil & Gas Corporation	2020	Dentsply Sirona Inc.	2020
Healthpeak Properties, Inc.	2021	State Street Corporation	2021	Xylem Inc.	2020
Paycom Software, Inc.	2021	Cintas Corporation	2020	United Rentals, Inc.	2020
Public Service Enterprise Group Incorporated	2021	Discover Financial Services	2020	Yum! Brands, Inc.	2020
PENN Entertainment, Inc.	2021	Lamb Weston Holdings, Inc.	2021	Zebra Technologies Corporation	2020
PulteGroup, Inc.	2021	Equifax Inc.	2020	Zion Bancorporation, National Association	2020
Packaging Corporation of America	2021	People's United Financial, Inc.	2020	Zimmer Biomet Holdings, Inc.	2020
PerkinElmer, Inc.	2021	Parker-Hannifin Corporation	2020	The Gap, Inc.	2021
Pentair plc	2021	Monolithic Power Systems, Inc.	2020	Schlumberger N.V.	2020
Pool Corporation	2021	STERIS plc	2020	Celanese Corporation	2020
PPL Corporation	2021	Seagate Technology Holdings plc	2020	Xilinx, Inc.	2020
Perrigo Company plc	2021	Stanley Black & Decker, Inc.	2020	Hess Corporation	2020
PTC Inc.	2020	Skyworks Solutions, Inc.	2020	Teledyne Technologies Incorporated	2020
Quanta Services, Inc.	2021	Molson Coors Beverage Company	2020	Bank of America Corporation	2020
Pioneer Natural Resources Company	2021	Teleflex Incorporated	2020	Walmart Inc.	2020
Pinnacle West Capital Corporation	2021	Trimble Inc.	2020	UnitedHealth Group Incorporated	2020
Salesforce, Inc.	2021	Teradyne, Inc.	2020	Marathon Petroleum Corporation	2020
Royal Caribbean Cruises Ltd.	2021	Textron Inc.	2020	AT&T Inc.	2020
Qorvo, Inc.	2022	Tyler Technologies, Inc.	2020	Alphabet Inc.	2020
Everest Re Group, Ltd.	2021	UDR, Inc.	2020	Exxon Mobil Corporation	2020
Regency Centers Corporation	2021	Unum Group	2020	DISH Network Corporation	2020
Regions Financial Corporation	2021	Vulcan Materials Company	2020	The AES Corporation	2020
International Business Machines Corporation	2019	TransDigm Group Incorporated	2020	Waters Corporation	2022
Robert Half International Inc.	2021	Snap-on Incorporated	2020	CVS Health Corporation	2020
Rollins, Inc.	2020	Universal Health Services, Inc.	2021	Raytheon Technologies Corporation	2020
Raymond James Financial, Inc.	2021	Vornado Realty Trust	2020		
Sealed Air Corporation	2021	Verisign, Inc.	2020		
The J. M. Smucker Company	2022	Ventas, Inc.	2020		
Republic Services, Inc.	2021	Tractor Supply Company	2021		
Rockwell Automation, Inc.	2021	Verisk Analytics, Inc.	2020		
SVB Financial Group	2022	Viatis Inc.	2020		
		Westinghouse Air Brake Technologies Corporation	2020		
		Bio-Techne Corporation	2022		

C. Companies by Sector

Communication Services (n=22)	Energy (n=22)	Utilities (n=27)
Fox Corporation Discovery, Inc. The Interpublic Group of Companies, Inc. Live Nation Entertainment, Inc. Twitter, Inc. Take-Two Interactive Software, Inc. Electronic Arts Inc. Lumen Technologies, Inc. Omnicom Group Inc. Netflix, Inc. Charter Communications, Inc. Facebook, Inc. T-Mobile US, Inc. Comcast Corporation Activision Blizzard, Inc. The Walt Disney Company ViacomCBS Inc. Verizon Communications Inc. News Corporation AT&T Inc. Alphabet Inc. DISH Network Corporation	Phillips 66 APA Corporation Devon Energy Corporation Diamondback Energy, Inc. Marathon Oil Corporation Halliburton Company ConocoPhillips EOG Resources, Inc. Baker Hughes Company Chevron Corporation Occidental Petroleum Corporation NOV Inc. Valero Energy Corporation Kinder Morgan, Inc. ONEOK, Inc. Pioneer Natural Resources Company Cabot Oil & Gas Corporation The Williams Companies, Inc. Schlumberger N.V. (Schlumberger Limited) Hess Corporation Marathon Petroleum Corporation Exxon Mobil Corporation	Alliant Energy Corporation American Water Works Company, Inc. Atmos Energy Corporation CMS Energy Corporation DTE Energy Company Consolidated Edison, Inc. Edison International Entergy Corporation Eversource Energy FirstEnergy Corp NiSource Inc. Sempra Energy Ameren Corporation Exelon Corporation Duke Energy Corporation The Southern Company NextEra Energy, Inc. Dominion Energy, Inc. American Electric Power Company Inc. NRG Energy, Inc. Eversource Energy Public Service Enterprise Group Incorporated Pinnacle West Capital Corporation CenterPoint Energy, Inc. WEC Energy Group, Inc. Xcel Energy Inc. The AES Corporation

Materials (n=27)	Real Estate (n=29)	Consumer Staples (n=31)
Albemarle Corporation Avery Dennison Corporation Arcor PLC Ball Corporation Eastman Chemical Company FMC Corporation LyondellBasell Industries N.V. Martin Marietta Materials, Inc. The Mosaic Company Nucor Corporation PPG Industries, Inc. The Sherwin-Williams Company Newmont Corporation Freeport-McMoRan Inc. Ecolab Inc. International Paper Company Dow Inc. DuPont de Nemours, Inc. Linde plc Air Products and Chemicals, Inc. WestRock Company Corteva, Inc. Packaging Corporation of America Sealed Air Corporation CF Industries Holdings, Inc. Vulcan Materials Company Celanese Corporation	AvalonBay Communities, Inc. Alexandria Real Estate Equities, Inc. Duke Realty Corporation Equity Residential Essex Property Trust, Inc. Extra Space Storage Inc. Federal Realty Investment Trust Iron Mountain Incorporated Kimco Realty Corporation SBA Communications Corporation Host Hotels & Resorts, Inc. CBRE Group, Inc. Prologis, Inc. Crown Castle Inc. Simon Property Group, Inc. Equinix, Inc. Digital Realty Trust, Inc. American Tower Corporation Public Storage Mid-America Apartment Communities, Inc. Welltower Inc. Realty Income Corporation Healthpeak Properties, Inc. Regency Centers Corporation Boston Properties, Inc. UDR, Inc. Vornado Realty Trust Ventas, Inc. Weyerhaeuser Company	The Kroger Co. Church & Dwight Co., Inc. Campbell Soup Company Monster Beverage Corporation Conagra Brands, Inc. The Clorox Company The Hershey Company Kellogg Company Hormel Foods Corporation Archer-Daniels-Midland Company McCormick & Company, Incorporated Kimberly-Clark Corporation Sysco Corporation Colgate-Palmolive Company The Estée Lauder Companies Inc. Tyson Foods, Inc. General Mills, Inc. Altria Group, Inc. Costco Wholesale Corporation Mondelez International, Inc. Philip Morris International Inc. The Kraft Heinz Company PepsiCo, Inc. The Coca-Cola Company The Procter & Gamble Company Walgreens Boots Alliance, Inc. Brown-Forman Corporation The J. M. Smucker Company Lamb Weston Holdings, Inc. Molson Coors Beverage Company Constellation Brands, Inc.

Consumer Discretionary (n=63)	Financials (n=66)	Health Care (n=65)
The Home Depot, Inc. Amazon.com, Inc. AutoZone, Inc. BorgWarner Inc. Bath & Body Works, Inc. V.F. Corporation Under Armour, Inc. Ulta Beauty, Inc. Tapestry, Inc. Ralph Lauren Corporation PVH Corp. Carnival Corporation MGM Resorts International Domino's Pizza, Inc. Caesars Entertainment, Inc. Hanesbrands Inc. Hilton Worldwide Holdings Inc. Las Vegas Sands Corp. Wynn Resorts, Limited Etsy, Inc. Expedia Group, Inc. Garmin Ltd. Hasbro, Inc. Leggett & Platt, Incorporated LKQ Corporation Mohawk Industries, Inc. Norwegian Cruise Line Holdings Ltd. Starbucks Corporation Chipotle Mexican Grill, Inc. Genuine Parts Company CarMax, Inc. D.R. Horton, Inc. Best Buy Co., Inc. Dollar Tree, Inc. O'Reilly Automotive, Inc. eBay Inc. Booking Holdings Inc. Ross Stores, Inc. Tesla, Inc. Lennar Corporation McDonald's Corporation The TJX Companies, Inc. Dollar General Corporation Lowe's Companies, Inc. Marriott International, Inc. Target Corporation Nike, Inc. General Motors Company Aptiv PLC Advance Auto Parts, Inc. Whirlpool Corporation Darden Restaurants, Inc. Ford Motor Company NVR, Inc. Newell Brands Inc. PENN Entertainment, Inc. PulteGroup, Inc. Pool Corporation Royal Caribbean Cruises Ltd. Tractor Supply Company Yum! Brands, Inc. The Gap, Inc. Walmart Inc.	Berkshire Hathaway Inc. Arthur J. Gallagher & Co. Cincinnati Financial Corporation Comerica Incorporated Franklin Resources, Inc. Fifth Third Bancorp First Republic Bank Globe Life Inc. Huntington Bancshares Incorporated Invesco Ltd. KeyCorp American International Group, Inc. The Allstate Corporation Marketaxess Holdings Inc. M&T Bank Corporation T. Rowe Price Group, Inc. Moody's Corporation S&P Global Inc. Aon plc Marsh & McLennan Companies, Inc. The Progressive Corporation The Hartford Financial Services Group, Inc. Fiserv, Inc. Synchrony Financial Truist Financial Corporation Loews Corporation Capital One Financial Corporation The Goldman Sachs Group, Inc. The Bank of New York Mellon Corporation Citigroup Inc. MetLife, Inc. Lincoln National Corporation Prudential Financial, Inc. Intercontinental Exchange, Inc. American Express Company CME Group Inc. The Charles Schwab Corporation The Travelers Companies, Inc. Morgan Stanley Principal Financial Group, Inc. U.S. Bancorp BlackRock, Inc. Chubb Limited MSCI Inc. The PNC Financial Services Group, Inc. JPMorgan Chase & Co. Nasdaq, Inc. Aflac Incorporated Wells Fargo & Company Ameriprise Financial, Inc. Citizens Financial Group, Inc. Assurant, Inc. Northern Trust Corporation PPL Corporation Everest Re Group, Ltd. Regions Financial Corporation Raymond James Financial, Inc. SVB Financial Group Cboe Global Markets, Inc. Discover Financial Services People's United Financial, Inc. Unum Group Abiomed, Inc. W. R. Berkley Corporation Zion Bancorporation, National Association Bank of America Corporation	McKesson Corporation AmerisourceBergen Corporation Cerner Corporation Bio-Rad Laboratories, Inc. Catalent, Inc. The Cooper Companies, Inc. Charles River Laboratories International, Inc. Quest Diagnostics Incorporated Davita Inc. Hologic, Inc. Henry Schein, Inc. Incyte Corporation Abbott Laboratories Amgen Inc. Mettler-Toledo International Inc. Regeneron Pharmaceuticals, Inc. ResMed Inc. IDEXX Laboratories, Inc. Moderna, Inc. Intuitive Surgical, Inc. Edwards Lifesciences Corporation Baxter International Inc. Becton, Dickinson and Company Stryker Corporation HCA Healthcare, Inc. Boston Scientific Corporation Biogen Inc. Thermo Fisher Scientific Inc. IQVIA Holdings Inc. Cardinal Health, Inc. Centene Corporation Eli Lilly and Company Humana Inc. Gilead Sciences, Inc. Pfizer Inc. The Cigna Group Johnson & Johnson Illumina, Inc. Merck & Co., Inc. Medtronic plc Danaher Corporation Dexcom, Inc. Bristol-Myers Squibb Company Anthem, Inc. Agilent Technologies, Inc. Align Technology, Inc. Zoetis Inc. Vertex Pharmaceuticals Incorporated AbbVie Inc. Laboratory Corporation of America Holdings Organon & Co. PerkinElmer, Inc. Perrigo Company plc West Pharmaceutical Services, Inc. Abiomed, Inc. STERIS plc Teleflex Incorporated Universal Health Services, Inc. Viatris Inc. Bio-Techne Corporation Dentsply Sirona Inc. Zimmer Biomet Holdings, Inc. UnitedHealth Group Incorporated Waters Corporation CVS Health Corporation

Industrials (n=73)		Information Technology (n=74)	
Allegion Public Limited Company	Johnson Controls International plc	Apple Inc.	Cisco Systems, Inc.
Ametek, Inc.	CSX Corporation	Akamai Technologies, Inc.	NVIDIA Corporation
Copart, Inc.	Eaton Corporation plc	Ansys, Inc.	Global Payments Inc.
Dover Corporation	Honeywell International Inc.	Arista Networks, Inc.	Microsoft Corporation
Fortune Brands Home & Security, Inc.	United Airlines Holdings, Inc.	Broadridge Financial Solutions, Inc.	Fortinet, Inc.
Fastenal Company	Deere & Company	Citrix Systems, Inc.	General Electric Company
Fortive Corporation	Norfolk Southern Corporation	Enphase Energy, Inc.	Fidelity National Information Services, Inc.
Generac Holdings Inc.	Carrier Global Corporation	FLEETCOR Technologies, Inc.	ServiceNow, Inc.
W.W. Grainger, Inc.	Caterpillar Inc.	Corning Incorporated	Autodesk, Inc.
Howmet Aerospace Inc.	The Boeing Company	International Flavors & Fragrances Inc.	Microchip Technology Incorporated
Huntington Ingalls Industries, Inc.	3M Company	IPG Photonics Corporation	Oracle Corporation
Waste Management, Inc.	A.O. Smith Corporation	Juniper Networks, Inc.	Broadcom Inc.
Ingersoll Rand Inc.	American Airlines Group Inc.	Keysight Technologies, Inc.	Intel Corporation
IDEX Corporation	Expeditors International of Washington, Inc.	Jack Henry & Associates, Inc.	NetApp, Inc.
J.B. Hunt Transport Services, Inc.	Alaska Air Group, Inc.	NortonLifeLock Inc.	Accenture plc
Leidos Holdings, Inc.	Old Dominion Freight Line, Inc.	Cognizant Technology Solutions Corporation	Adobe Inc.
Kansas City Southern	Otis Worldwide Corporation	Applied Materials, Inc.	Advanced Micro Devices, Inc.
Masco Corporation	Pentair plc	Synopsys, Inc.	Western Digital Corporation
Nielsen Holdings plc	Quanta Services, Inc.	Lam Research Corporation	Visa Inc.
Cummins Inc.	Robert Half International Inc.	Cadence Design Systems, Inc.	Gartner, Inc.
C.H. Robinson Worldwide, Inc.	Rollins, Inc.	Motorola Solutions, Inc.	F5, Inc.
Roper Technologies, Inc.	Republic Services, Inc.	Intuit Inc.	Paychex, Inc.
IHS Markit Ltd.	Rockwell Automation, Inc.	Analog Devices, Inc.	Paycom Software, Inc.
Trane Technologies plc	Cintas Corporation	TE Connectivity Ltd.	PTC Inc.
Jacobs Solutions Inc.	Equifax Inc.	Texas Instruments Incorporated	Salesforce, Inc.
Illinois Tool Works Inc.	Parker-Hannifin Corporation	Amphenol Corporation	Qorvo, Inc.
Emerson Electric Co.	Stanley Black & Decker, Inc.	CDW Corporation	International Business Machines Corporation
FedEx Corporation	Textron Inc.	NXP Semiconductors N.V.	The Western Union Company
Union Pacific Corporation	TransDigm Group Incorporated	KLA Corporation	Monolithic Power Systems, Inc.
General Dynamics Corporation	Snap-on Incorporated	Micron Technology, Inc.	Seagate Technology Holdings Public Limited Company
Delta Air Lines, Inc.	Verisk Analytics, Inc.	Qualcomm Incorporated	Skyworks Solutions, Inc.
United Parcel Service, Inc.	Westinghouse Air Brake Technologies Corporation	HP Inc.	Trimble Inc.
Lockheed Martin Corporation	Xylem Inc.	Mastercard Incorporated	Teradyne, Inc.
L3Harris Technologies, Inc.	United Rentals, Inc.	Automatic Data Processing, Inc.	Tyler Technologies, Inc.
PACCAR Inc.	Teledyne Technologies Incorporated	Hewlett Packard Enterprise Company	Verisign, Inc.
Northrop Grumman Corporation	Raytheon Technologies Corporation	DXC Technology Company	Zebra Technologies Corporation
Southwest Airlines Co.		PayPal Holdings, Inc.	Xilinx, Inc.

ENDNOTES

- 1 This calculation excludes one outlier company, Tesla. At the time of collection, only Tesla's 2019 data was available. That year, Tesla's ratio was orders of magnitude higher than any other company in the S&P 500. Additionally, Tesla's ratio was orders of magnitude higher than its own ratio in previous and subsequent years.
- 2 As listed in the fourth quarter of 2021
- 3 <https://www.anderson.ucla.edu/about/centers/impactanderson/open-for-good-transparency-index#:~:text=The%20Open%20For%20Good%E2%84%A2%20Transparency%20Index%20puts%20equal%20weight,10%20most%20transparent%20companies%20change.>
- 4 <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>
- 5 <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>
- 6 <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>
- 7 <https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance>
- 8 <https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance>
- 9 <https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance>
- 10 <https://ghgprotocol.org/>
- 11 <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>
- 12 https://ghgprotocol.org/sites/default/files/Scope2_ExecSum_Final.pdf
- 13 https://ghgprotocol.org/sites/default/files/Scope2_ExecSum_Final.pdf
- 14 https://www.americanexpress.com/content/dam/amex/en-us/newsroom/pdfs/AXP_2022-2023_ESG_Report.pdf
- 15 https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf
- 16 https://ghgprotocol.org/sites/default/files/Scope2_ExecSum_Final.pdf
- 17 <https://www.globalreporting.org/standards/media/1012/gri-305-emissions-2016.pdf>
- 18 <https://www.cdp.net/en>
- 19 https://ghgprotocol.org/sites/default/files/Scope2_ExecSum_Final.pdf
- 20 <https://ghgprotocol.org/blog/you-too-can-master-value-chain-emissions>
- 21 <https://www.fsb-tcfd.org/recommendations/>
- 22 <https://www.sec.gov/files/rules/proposed/2022/33-11042.pdf>
- 23 https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202320240SB253
- 24 https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202320240SB261
- 25 <https://www.sec.gov/files/rules/sro/nasdaq/2020/34-90574-ex5.pdf>
- 26 <https://www.bls.gov/opub/reports/womens-databook/2022/home.htm>
- 27 <https://www.sos.ca.gov/business-programs/women-boards>
- 28 <https://listingcenter.nasdaq.com/assets/Board%20Diversity%20Disclosure%20Five%20Things.pdf>
- 29 <https://www.census.gov/quickfacts/fact/table/US/PST045222>
- 30 Note that Tesla (Consumer Discretionary) has been excluded from this graph as an outlier due to an outsized compensation award for the 2019 year that represented a significant deviation from prior and subsequent years.
- 31 17 C.F.R. § 229.402, <https://www.law.cornell.edu/cfr/text/17/229.402>

