The State of Corporate Sustainability Disclosure

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I. EXECUTIVE SUMMARY

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

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. Across all metrics, the average disclosure rate is fairly low at 55%. 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%. **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. This report concentrates on a subset of 16 carefully chosen metrics across the ESG spectrum.

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%. This observation underscores a significant gap in the comprehensive reporting of ESG-related information.

Figure 1: Disclosure Rate by Category

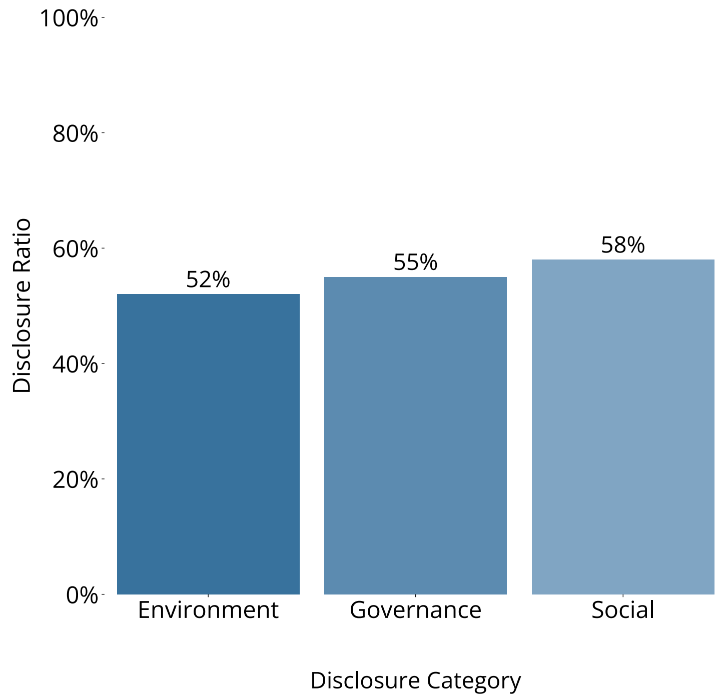


Figure 1 displays the average disclosure rate by category for the Environmental, Social and Governance metrics. Firms receive a disclosure score for each metric: "1" for full disclosure, "0.5" for partial disclosure or "0" for no disclosure. The average disclosure rate is then calculated by averaging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

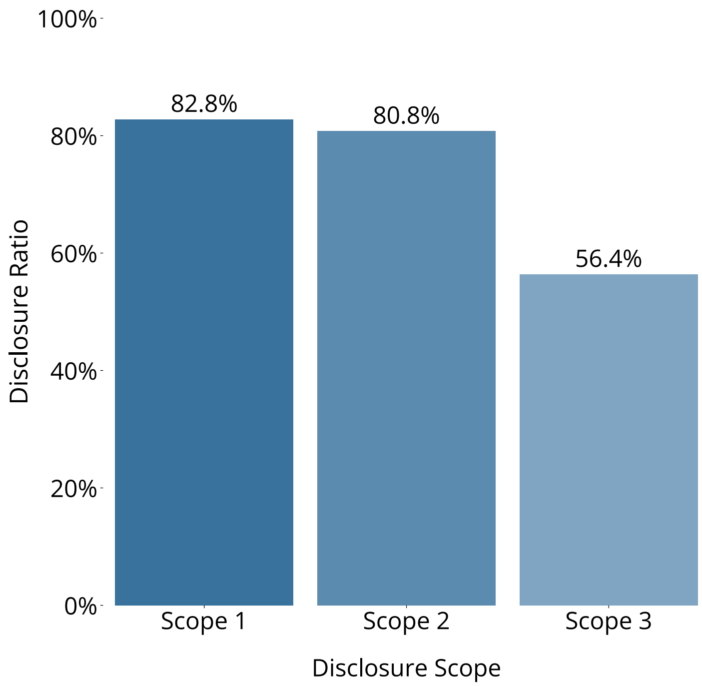
The term "greenhouse gas" (GHG) refers to gases that trap heat in the Earth's atmosphere.[4] The most commonly discussed GHG is carbon dioxide, making up nearly 80% of U.S. GHG emissions. However, other GHGs include methane, nitrous oxide and fluorinated gases.[5] While these all contribute to trapping 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 (CO_2e). This is calculated by taking the amount of the non-CO_2 gas and calculating how much CO_2 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 (CO_2e).[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 CO_2e 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

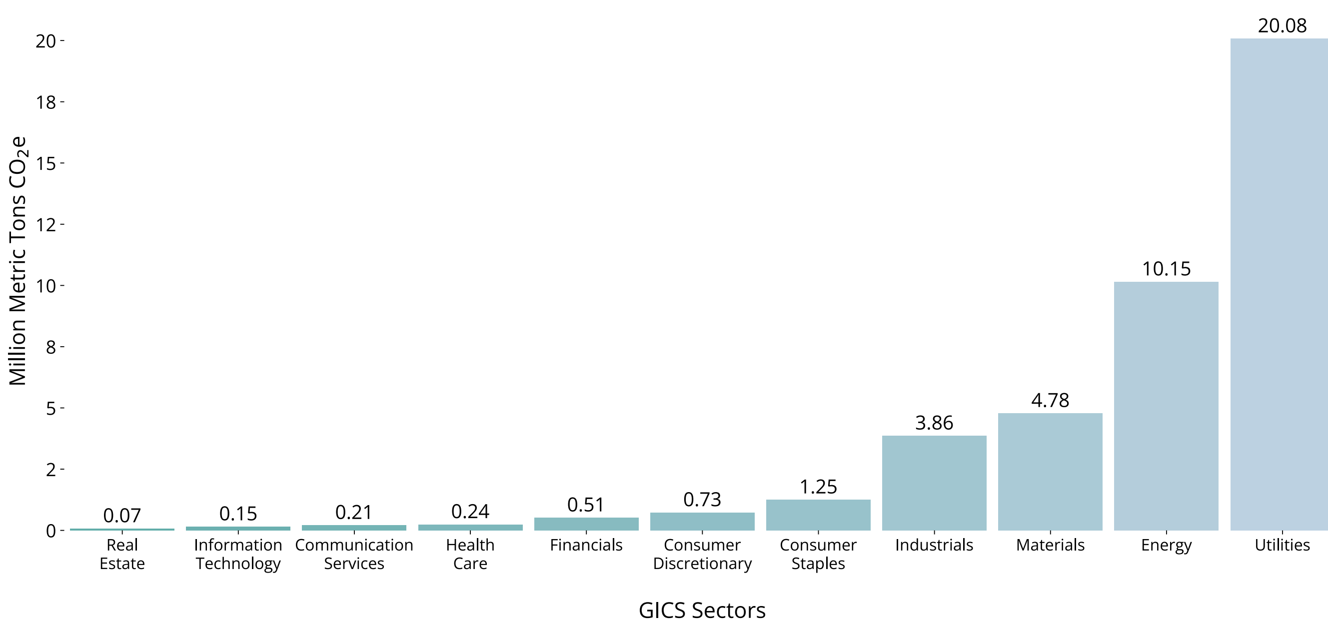


Figure 3 illustrates the average GHG Scope 1 emissions for each of the 11 sectors of the S&P 500. Not every firm discloses Scope 1 information, so the calculation of these averages involves only the subset of firms within each sector that report their Scope 1 information. For example, within the Industrials sector, the average reported Scope 1 emissions are 3.86 million metric tons of CO_2e.

On average, each of the 27 companies within the Utilities sector emits around 20 million metric tons of CO_2 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

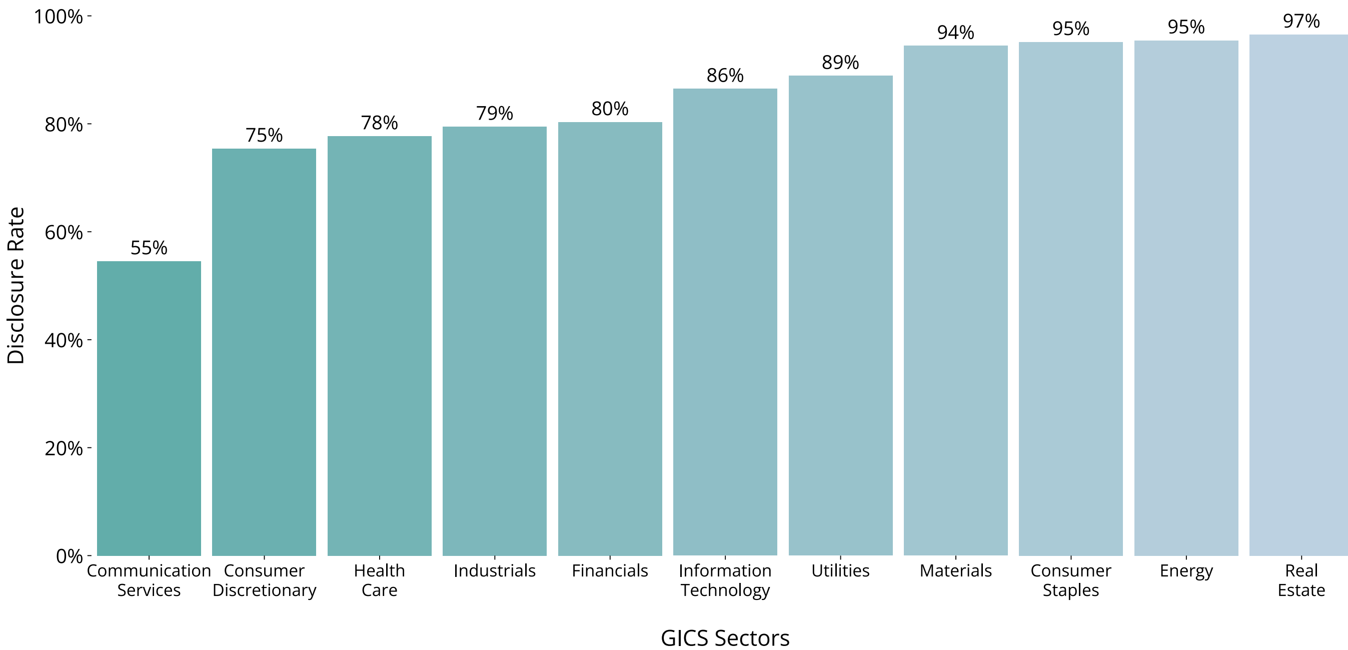


Figure 4 illustrates the average disclosure rate of Scope 1 emissions by sector. For example, the Industrials sector has an average disclosure rate of 79%, calculated by averaging the individual disclosure scores (0, .5 or 1) of all companies within that sector.

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 CO_2e, but its location-based Scope 2 emissions were 86,734 MT CO_2e, more than 20 times larger.[14]

Figure 5: American Express Scope 2 Emissions 2022

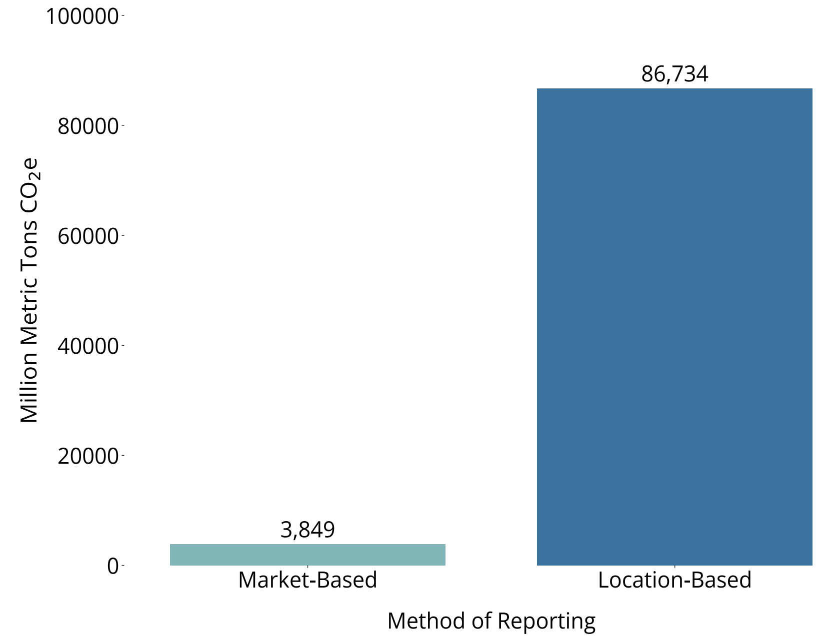


Figure 5 illustrates the importance of understanding the type of Scope 2 emissions being reported. Given the potentially vast differences in magnitude, knowing which type is at hand is key for making rational comparisons of firms.

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.

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)

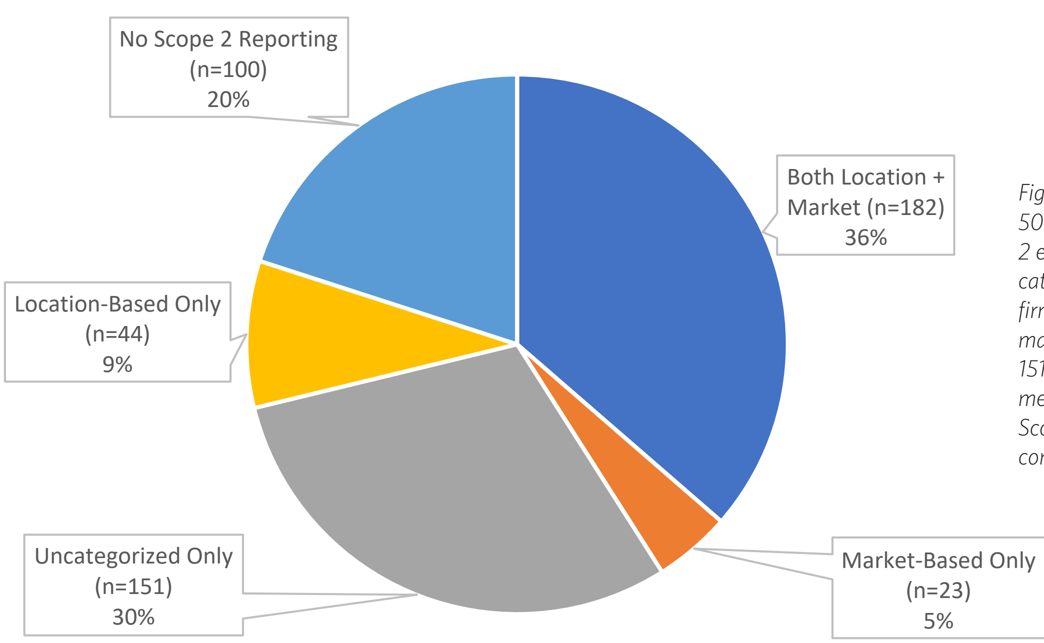


Figure 6 illustrates how the S&P 500 chose to report their Scope 2 emissions. We see the largest category of firms (181 S&P 500 firms) reporting both location- and market-based figures. However, 151 firms do not identify the method used to calculate their Scope 2 emissions, hindering broad comparisons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

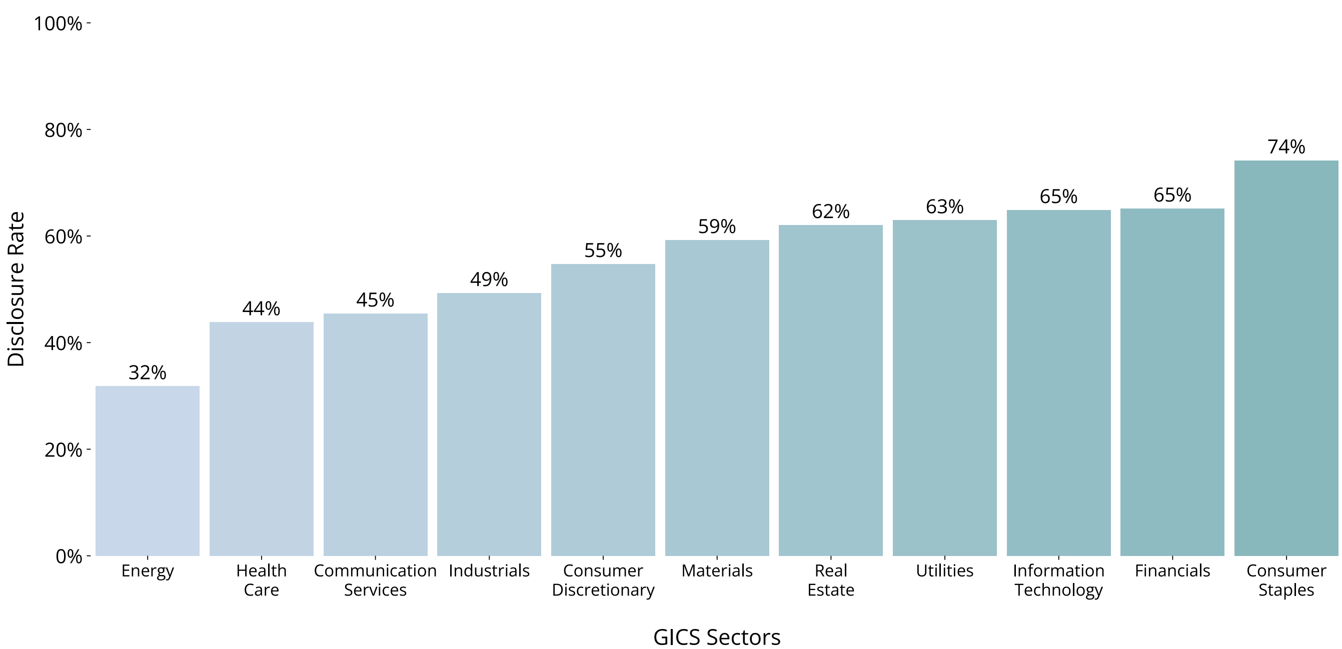


Figure 7 highlights the average sectoral disclosure rate of Scope 3 emissions. For example, the Real Estate sector has an average disclosure rate of 62%, calculated by averaging the individual disclosure scores (0, .5 or 1) of all companies within the sector.

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_2e
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

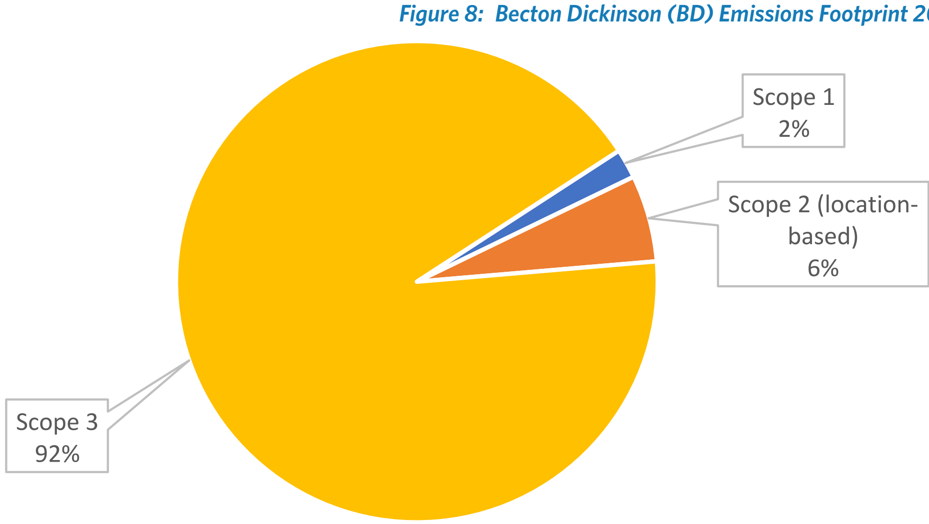


Figure 8 illustrates the distribution of Becton Dickinson's (BD) emissions among Scopes 1, 2 and 3. BD's Scope 1 emissions represent only 2% of its overall footprint.

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

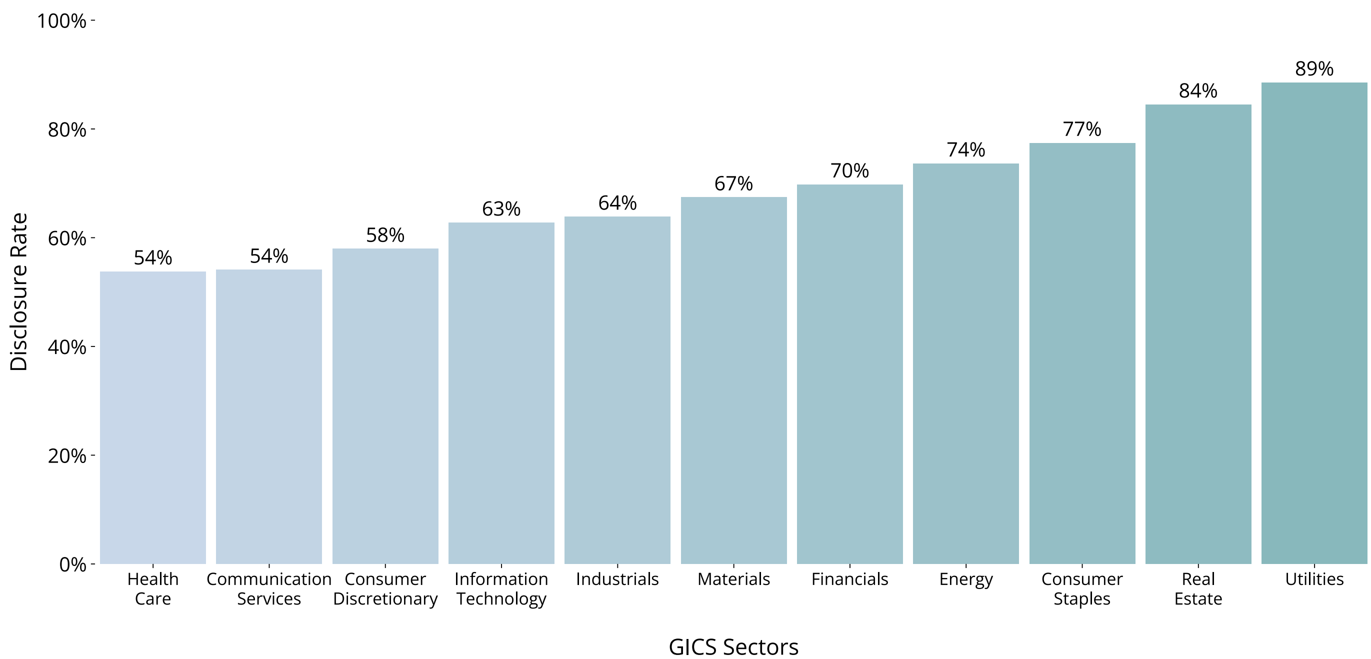


Figure 9 illustrates the overall disclosure rate of the TCFD by sector. Because the TCFD consists of 11 disclosures, the TCFD disclosure score for each firm is the result of averaging the disclosure score (0, .5 or 1) of the firm for each disclosure. Calculating the sector average was the result of averaging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

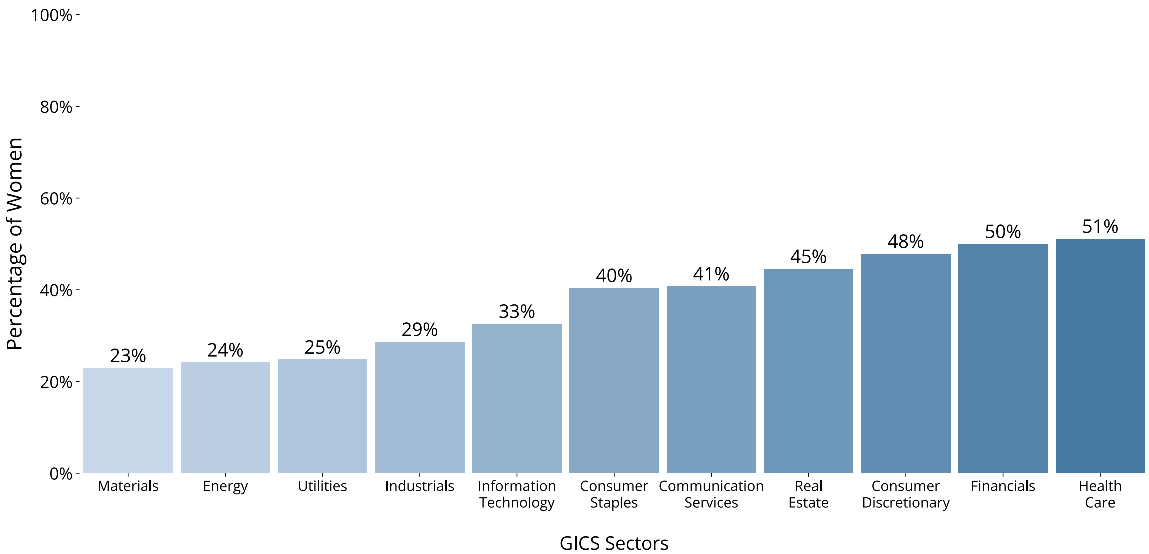


Figure 10 provides the average percentage of women employees by sector. For example, in the Materials sector, the companies that report gender disclose that their workforce is on average 23% women.

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

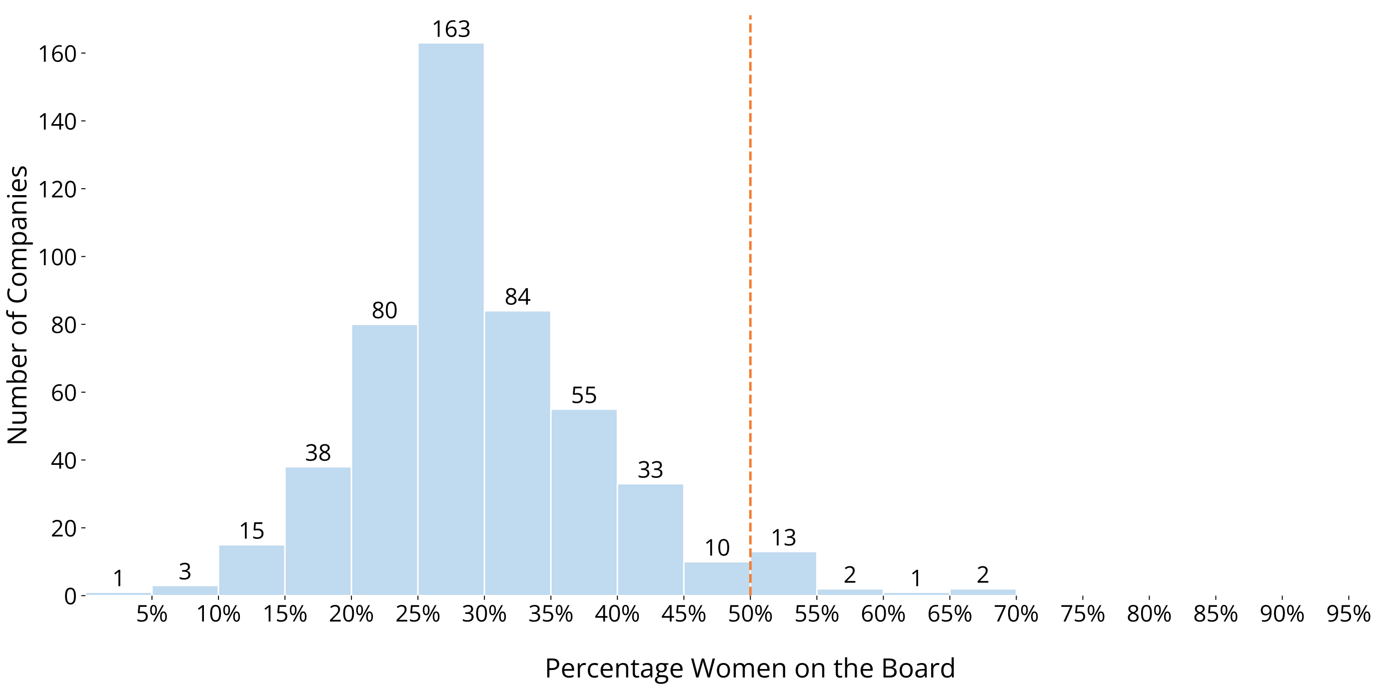


Figure 11 represents the distribution of the percentage of women on the board of companies in the S&P 500. For example, 163 firms in the S&P 500 have a board whose membership is between 25% and 30% women, while 19 companies have boards whose membership is fewer than 15% women.

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

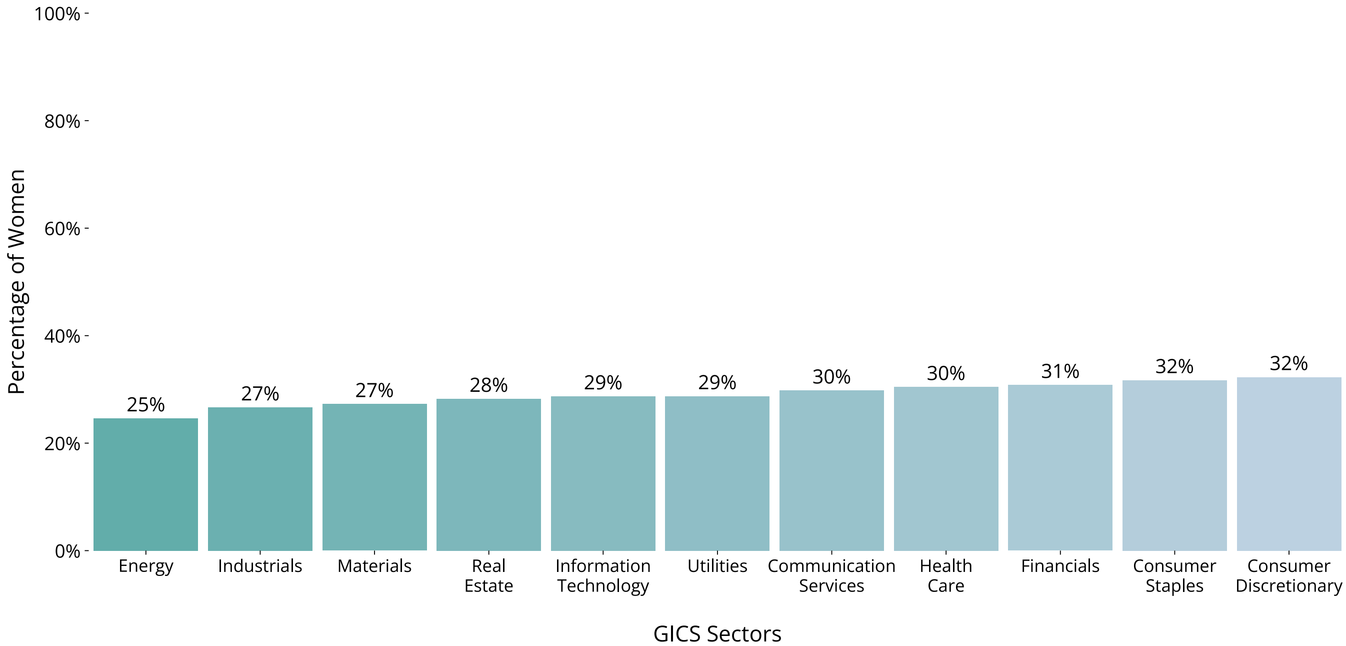


Figure 12 shows the average representation of women on the board by sector. For example, companies in the Financials sector have boards that average 31% women.

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

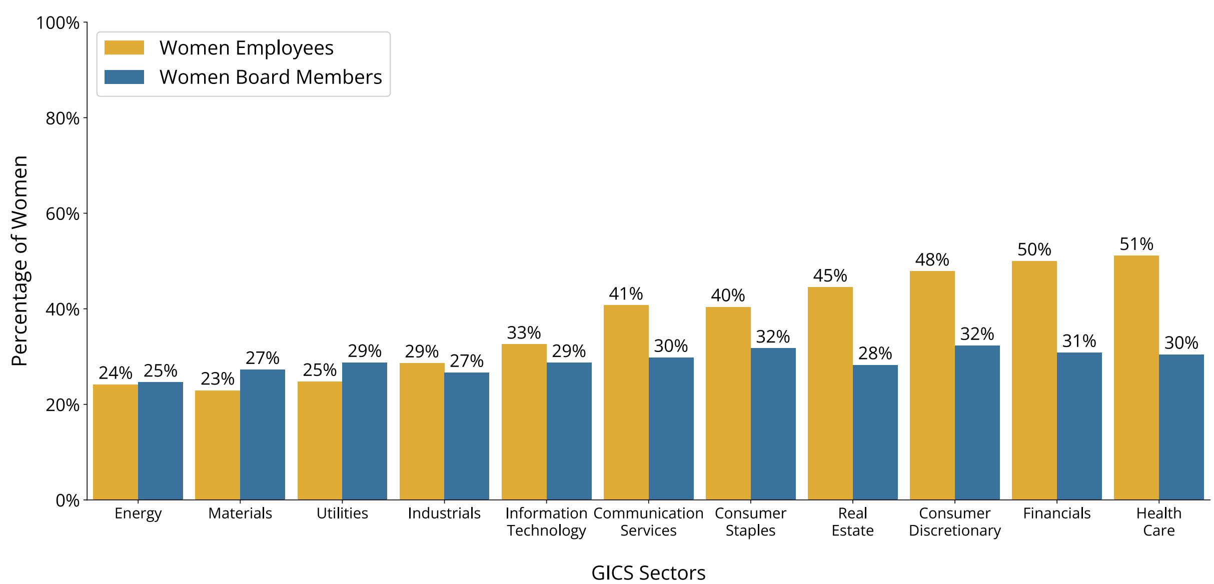


Figure 13 illustrates the difference between the percentage of women in the workforce and the percentage of women on the board, by sector. In the Energy sector, the percentage of women in the workforce is close to that of women on the board. In contrast, in the Health Care sector, women comprise a much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

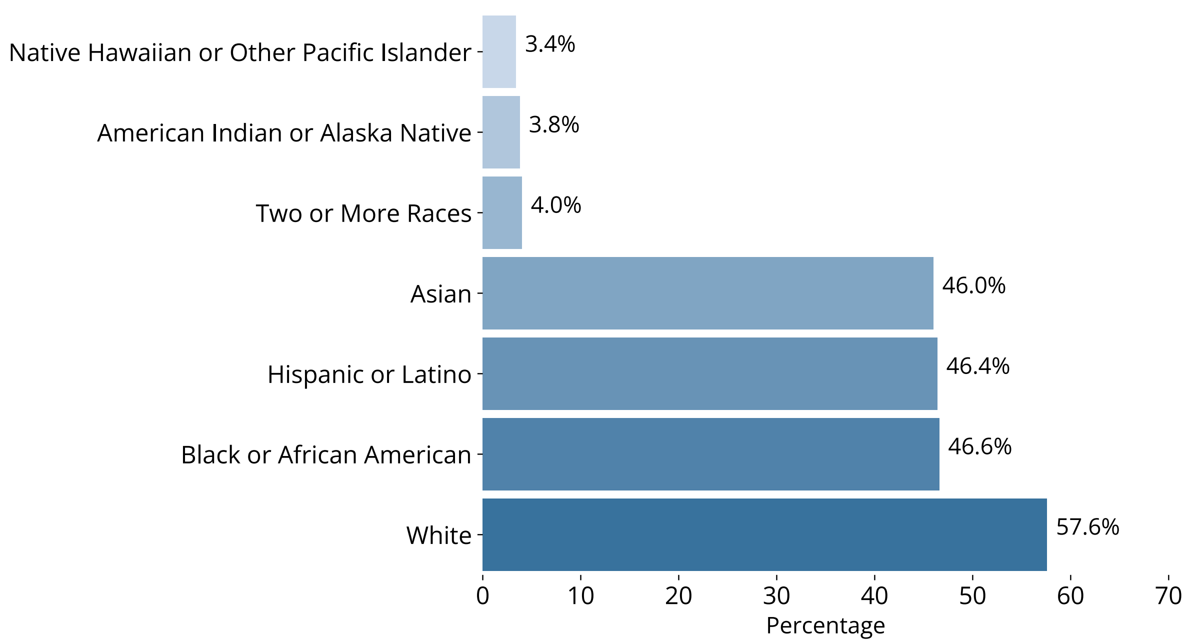


Figure 14 illustrates the percentage of companies that report information on each federal ethnicity diversity category. Of the S&P 500, 57.6% of companies disclose information on the percentage of their employees who are White.

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

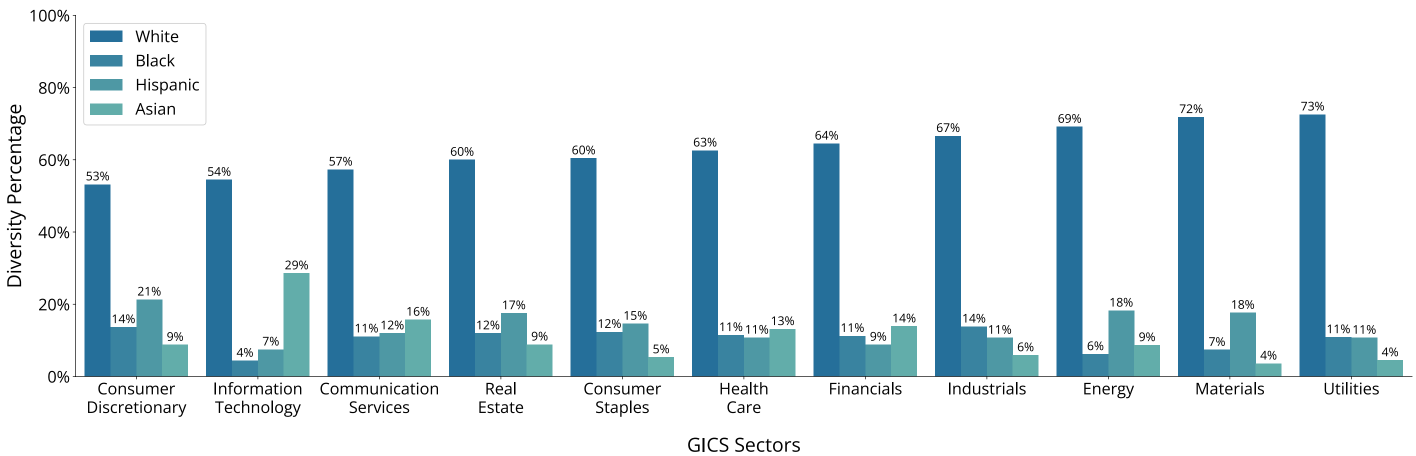


Figure 15 illustrates the average diversity of the S&P 500 workforce by sector. The Utilities sector has the lowest average diversity, disclosing that those companies have a workforce that is on average 73% White, 11% Black, 11% Hispanic and 4% Asian.

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

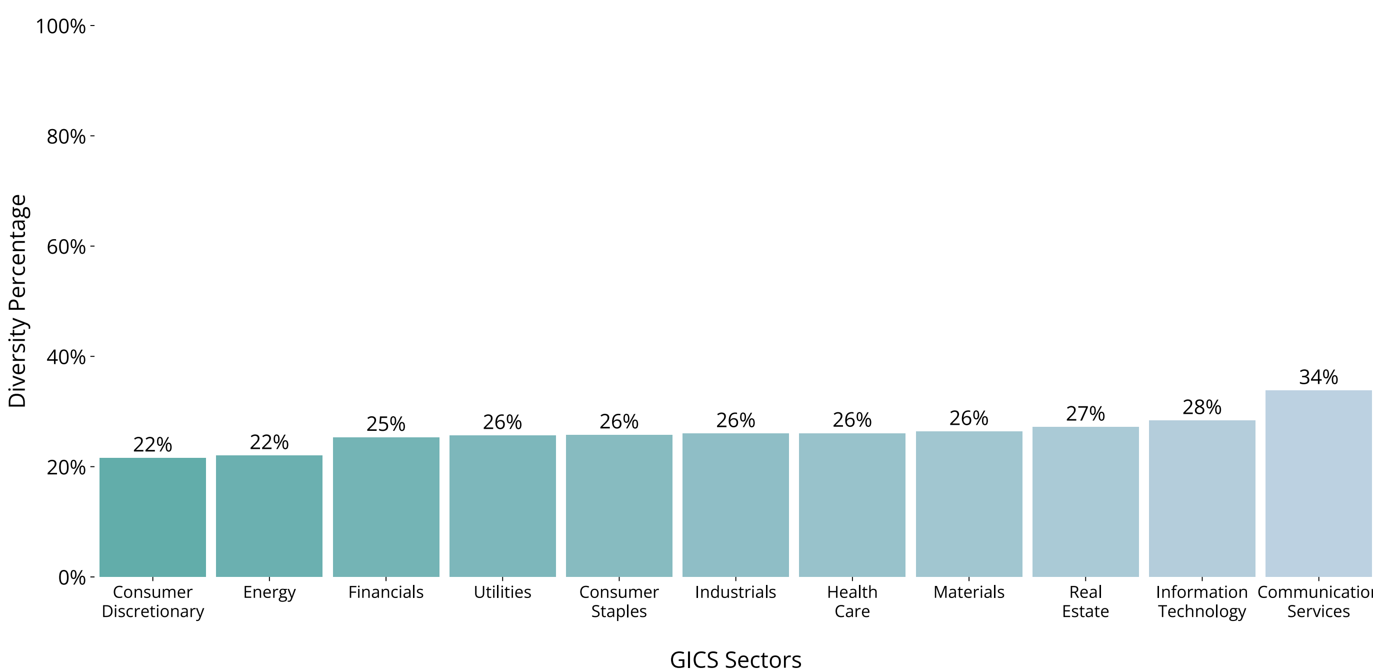


Figure 16 provides the average percentage of diverse board members by sector in the S&P 500. We see that Utilities, Consumer Staples, Industrials, Health Care and Materials all average boards that are 26% diverse.

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

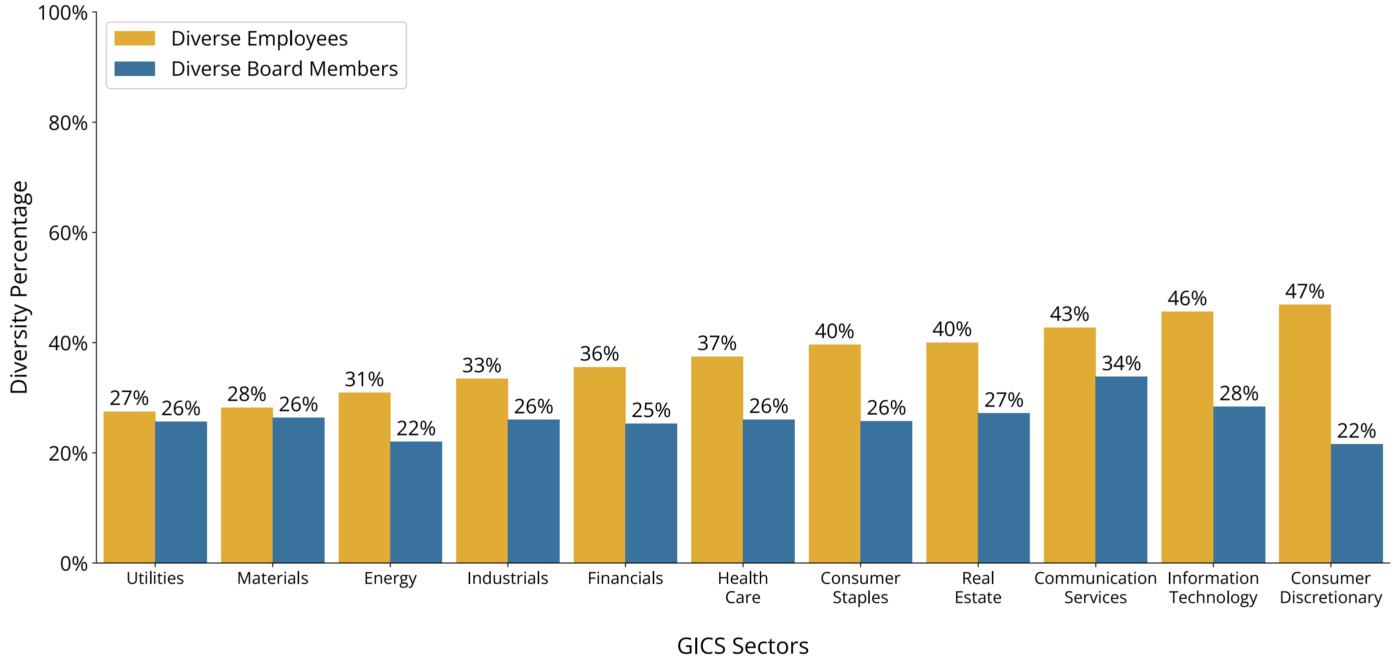


Figure 17 shows the average percentage of diverse employees and board members by sector. For example, we see that Consumer Discretionary sector companies have workforces that are on average 47% diverse, while their boards are only on average 22% diverse.

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 Sector[30]

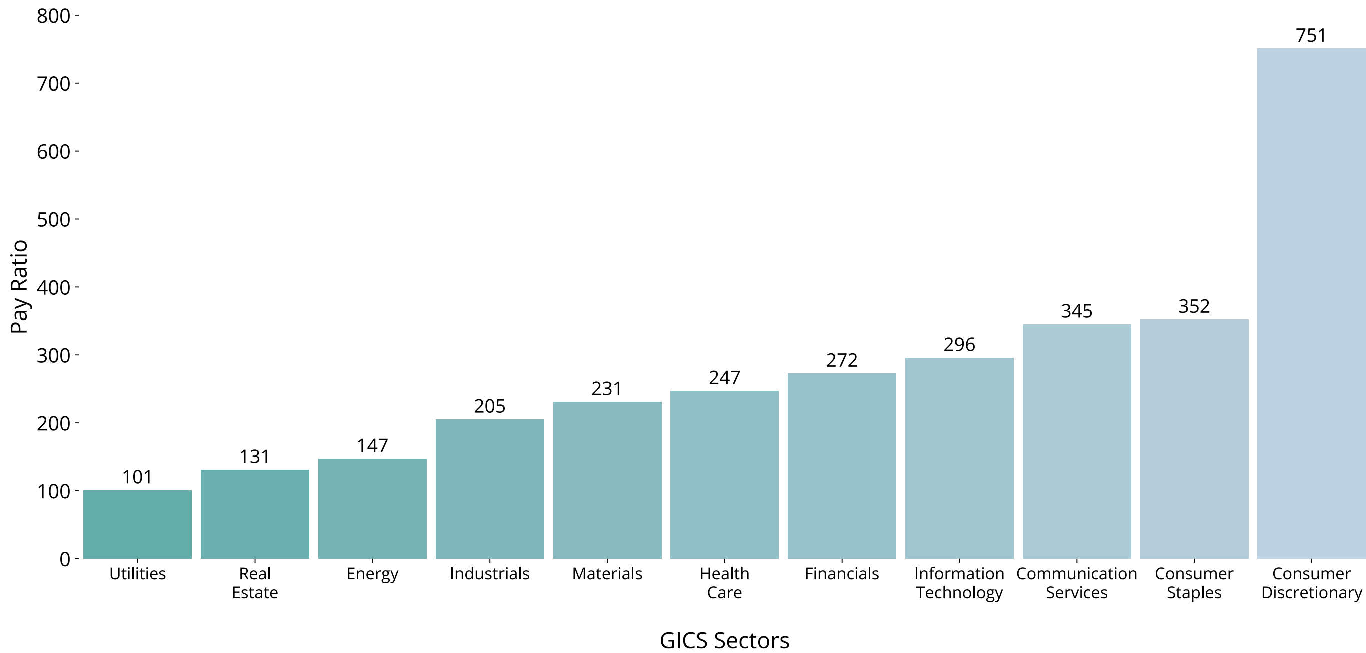


Figure 18 illustrates the average CEO-to-median-employee compensation by sector. For example, within the Utilities sector, on average, companies compensate their CEOs at 101 times what they pay their median employees.

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: 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.

ACKNOWLEDGEMENTS

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

McCormick & Company, Incorporated	2021
Martin Marietta Materials, Inc.	2021
Marathon Oil Corporation	2020
M&T Bank Corporation	2021
Mettler-Toledo International Inc.	2021
The Mosaic Company	2021
Norwegian Cruise Line Holdings Ltd.	2021
NiSource Inc.	2021
NortonLifeLock Inc.	2021
Nielsen Holdings plc	2020
Cummins Inc.	2019
Starbucks Corporation	2019
Kimberly-Clark Corporation	2019
C.H. Robinson Worldwide, Inc.	2020
Cognizant Technology Solutions Corporation	2020
Chipotle Mexican Grill, Inc.	2020
Applied Materials, Inc.	2020
SBA Communications Corporation	2019
Regeneron Pharmaceuticals, Inc.	2020
Live Nation Entertainment, Inc.	2020
Synopsys, Inc.	2020
Lam Research Corporation	2020
T. Rowe Price Group, Inc.	2020
ResMed Inc.	2020
Cadence Design Systems, Inc.	2020
Moody's Corporation	2020
Motorola Solutions, Inc.	2020
Nucor Corporation	2020
Roper Technologies, Inc.	2020
Genuine Parts Company	2020
IDEXX Laboratories, Inc.	2020
CarMax, Inc.	2019
D.R. Horton, Inc.	2019
IHS Markit Ltd.	2020
Intuit Inc.	2021
Trane Technologies plc	2020
Sysco Corporation	2019
Analog Devices, Inc.	2020
Best Buy Co., Inc.	2019
Host Hotels & Resorts, Inc.	2020
TE Connectivity Ltd.	2020
Dollar Tree, Inc.	2020
Colgate-Palmolive Company	2020

CBRE Group, Inc.	2019
Texas Instruments Incorporated	2020
Moderna, Inc.	2020
Amphenol Corporation	2020
CDW Corporation	2020
Intuitive Surgical, Inc.	2020
S&P Global Inc.	2020
Edwards Lifesciences Corporation	2020
PPG Industries, Inc.	2020
Baxter International Inc.	2020
Jacobs Solutions Inc.	2020
NXP Semiconductors N.V.	2020
O'Reilly Automotive, Inc.	2020
eBay Inc.	2020
Booking Holdings Inc.	2020
Illinois Tool Works Inc.	2020
KLA Corporation	2019
The Estée Lauder Companies Inc.	2020
Ross Stores, Inc.	2019
Twitter, Inc.	2020
The Sherwin-Williams Company	2019
Emerson Electric Co.	2019
Take-Two Interactive Software, Inc.	2020
Electronic Arts Inc.	2020
Halliburton Company	2020
Prologis, Inc.	2020
FedEx Corporation	2020
Tesla, Inc.	2019
Becton, Dickinson and Company	2019
Stryker Corporation	2020
Micron Technology, Inc.	2020
Lumen Technologies, Inc.	2020
Union Pacific Corporation	2020
HCA Healthcare, Inc.	2020
Newmont Corporation	2020
Qualcomm Incorporated	2020
General Dynamics Corporation	2020
Boston Scientific Corporation	2020
ConocoPhillips	2020
Tyson Foods, Inc.	2019
General Mills, Inc.	2021
Biogen Inc.	2020
Aon plc	2020
Delta Air Lines, Inc.	2019
United Parcel Service, Inc.	2019

Lennar Corporation	2020
McDonald's Corporation	2019
HP Inc.	2019
The TJX Companies, Inc.	2020
Mastercard Incorporated	2019
Crown Castle Inc.	2019
Altria Group, Inc.	2020
Lockheed Martin Corporation	2019
EOG Resources, Inc.	2019
Marsh & McLennan Companies, Inc.	2020
Freeport-McMoRan Inc.	2020
Costco Wholesale Corporation	2020
Thermo Fisher Scientific Inc.	2019
Mondelez International, Inc.	2019
Dollar General Corporation	2020
Ecolab Inc.	2020
L3Harris Technologies, Inc.	2020
International Paper Company	2019
PACCAR Inc.	2021
IQVIA Holdings Inc.	2020
The Progressive Corporation	2019
Northrop Grumman Corporation	2019
Cardinal Health, Inc.	2020
Southwest Airlines Co.	2019
Omnicom Group Inc.	2020
Lowe's Companies, Inc.	2019
Centene Corporation	2020
Eli Lilly and Company	2020
Johnson Controls International plc	2021
Simon Property Group, Inc.	2020
Equinix, Inc.	2020
CSX Corporation	2020
Marriott International, Inc.	2020
Eaton Corporation plc	2020
Target Corporation	2020
Automatic Data Processing, Inc.	2020
The Hartford Financial Services Group, Inc.	2020
Digital Realty Trust, Inc.	2020
Humana Inc.	2019
Philip Morris International Inc.	2019
Nike, Inc.	2020
Gilead Sciences, Inc.	2020
Dow Inc.	2019
Fiserv, Inc.	2020

Hewlett Packard Enterprise Company	2019
Baker Hughes Company	2019
DXC Technology Company	2019
Honeywell International Inc.	2020
DuPont de Nemours, Inc.	2020
American Tower Corporation	2020
United Airlines Holdings, Inc.	2019
Netflix, Inc.	2020
Sempra Energy	2020
PayPal Holdings, Inc.	2020
Linde plc	2020
Cisco Systems, Inc.	2020
NVIDIA Corporation	2021
Pfizer Inc.	2019
Deere & Company	2020
The Kraft Heinz Company	2020
Ameren Corporation	2021
Exelon Corporation	2019
Synchrony Financial	2020
Truist Financial Corporation	2020
The Cigna Group	2019
Global Payments Inc.	2021
Duke Energy Corporation	2020
Microsoft Corporation	2020
Norfolk Southern Corporation	2021
Fortinet, Inc.	2021
Loews Corporation	2019
Capital One Financial Corporation	2019
The Goldman Sachs Group, Inc.	2019
The Bank of New York Mellon Corporation	2019
Citigroup Inc.	2019
PepsiCo, Inc.	2019
General Electric Company	2019
Johnson & Johnson	2019
Carrier Global Corporation	2021
MetLife, Inc.	2019
General Motors Company	2019
Illumina, Inc.	2021
Fidelity National Information Services, Inc.	2020
Caterpillar Inc.	2019
Chevron Corporation	2019
The Southern Company	2020
Lincoln National Corporation	2019

Merck & Co., Inc.	2019
Prudential Financial, Inc.	2019
Intercontinental Exchange, Inc.	2020
ServiceNow, Inc.	2021
Public Storage	2021
The Coca-Cola Company	2019
Medtronic plc	2020
Autodesk, Inc.	2021
Danaher Corporation	2020
American Express Company	2019
Charter Communications, Inc.	2019
CME Group Inc.	2020
The Charles Schwab Corporation	2021
Occidental Petroleum Corporation	2020
Dexcom, Inc.	2021
Bristol-Myers Squibb Co.	2020
The Travelers Companies, Inc.	2019
The Procter & Gamble Company	2020
Anthem, Inc.	2019
Microchip Technology Incorporated	2021
Oracle Corporation	2019
Morgan Stanley	2019
NextEra Energy, Inc.	2020
Principal Financial Group, Inc.	2020
U.S. Bancorp	2020
BlackRock, Inc.	2020
Broadcom Inc.	2020
Dominion Energy, Inc.	2019
Facebook, Inc.	2019
Aptiv PLC	2021
Chubb Limited	2021
The Boeing Company	2020
T-Mobile US, Inc.	2020
MSCI Inc.	2021
Comcast Corporation	2020
The PNC Financial Services Group, Inc.	2019
JPMorgan Chase & Co.	2019
American Electric Power Company Inc.	2021
Intel Corporation	2019
Mid-America Apartment Communities, Inc.	2020
Nasaq, Inc.	2021
NRG Energy, Inc.	2021

NOV Inc.	2021
NetApp, Inc.	2021
3M Company	2020
A.O. Smith Corporation	2020
Accenture plc	2020
Activision Blizzard, Inc.	2020
Adobe Inc.	2020
Advance Auto Parts, Inc.	2020
Advanced Micro Devices, Inc.	2020
Aflac Incorporated	2020
Agilent Technologies, Inc.	2020
Air Products and Chemicals, Inc.	2021
American Airlines Group Inc.	2019
Align Technology, Inc.	2020
Zoetis Inc.	2020
Whirlpool Corporation	2020
WestRock Company	2019
Western Digital Corporation	2020
Welltower Inc.	2020
Wells Fargo & Company	2020
The Walt Disney Company	2020
Walgreens Boots Alliance, Inc.	2020
Visa Inc.	2020
ViacomCBS Inc.	2019
Vertex Pharmaceuticals Inc.	2020
Verizon Communications Inc.	2019
Valero Energy Corporation	2020
Brown-Forman Corporation	2021
Ameriprise Financial, Inc.	2021
AbbVie Inc.	2019
Citizens Financial Group, Inc.	2020
Darden Restaurants, Inc.	2021
Expeditors International of Washington, Inc.	2020
Ford Motor Company	2020
Corteva, Inc.	2020
News Corporation	2021
Laboratory Corporation of America Holdings	2021
Gartner, Inc.	2020
F5, Inc.	2020
Assurant, Inc.	2021
Alaska Air Group, Inc.	2020
Kinder Morgan, Inc.	2020
Eversource Energy	2020
NVR, Inc.	2021

Newell Brands Inc.	2021
Northern Trust Corporation	2021
Realty Income Corporation	2021
Old Dominion Freight Line, Inc.	2021
Organon & Co.	2021
ONEOK, Inc.	2020
Otis Worldwide Corporation	2021
Paychex, Inc.	2021
Healthpeak Properties, Inc.	2021
Paycom Software, Inc.	2021
Public Service Enterprise Group Incorporated	2021
PENN Entertainment, Inc.	2021
PulteGroup, Inc.	2021
Packaging Corporation of America	2021
PerkinElmer, Inc.	2021
Pentair plc	2021
Pool Corporation	2021
PPL Corporation	2021
Perrigo Company plc	2021
PTC Inc.	2020
Quanta Services, Inc.	2021
Pioneer Natural Resources Company	2021
Pinnacle West Capital Corporation	2021
Salesforce, Inc.	2021
Royal Caribbean Cruises Ltd.	2021
Qorvo, Inc.	2022
Everest Re Group, Ltd.	2021
Regency Centers Corporation	2021
Regions Financial Corporation	2021
International Business Machines Corporation	2019
Robert Half International Inc.	2021
Rollins, Inc.	2020
Raymond James Financial, Inc.	2021
Sealed Air Corporation	2021
The J. M. Smucker Company	2022
Republic Services, Inc.	2021
Rockwell Automation, Inc.	2021
SVB Financial Group	2022

West Pharmaceutical Services, Inc.	2021
The Western Union Company	2021
Abiomed, Inc.	2020
Boston Properties, Inc.	2020
Cboe Global Markets, Inc.	2020
CF Industries Holdings, Inc.	2020
CenterPoint Energy, Inc.	2020
Cabot Oil & Gas Corporation	2020
State Street Corporation	2021
Cintas Corporation	2020
Discover Financial Services	2020
Lamb Weston Holdings, Inc.	2021
Equifax Inc.	2020
People's United Financial, Inc.	2020
Parker-Hannifin Corporation	2020
Monolithic Power Systems, Inc.	2020
STERIS plc	2020
Seagate Technology Holdings plc	2020
Stanley Black & Decker, Inc.	2020
Skyworks Solutions, Inc.	2020
Molson Coors Beverage Company	2020
Teleflex Incorporated	2020
Trimble Inc.	2020
Teradyne, Inc.	2020
Textron Inc.	2020
Tyler Technologies, Inc.	2020
UDR, Inc.	2020
Unum Group	2020
Vulcan Materials Company	2020
TransDigm Group Incorporated	2020
Snap-on Incorporated	2020
Universal Health Services, Inc.	2021
Vornado Realty Trust	2020
Verisign, Inc.	2020
Ventas, Inc.	2020
Tractor Supply Company	2021
Verisk Analytics, Inc.	2020
Viatris Inc.	2020
Westinghouse Air Brake Technologies Corporation	2020
Bio-Techne Corporation	2022

Constellation Brands, Inc.	2022
WEC Energy Group, Inc.	2020
Abiomed, Inc.	2020
The Williams Companies, Inc.	2020
W. R. Berkley Corporation	2021
Weyerhaeuser Company	2020
Xcel Energy Inc.	2020
Dentsply Sirona Inc.	2020
Xylem Inc.	2020
United Rentals, Inc.	2020
Yum! Brands, Inc.	2020
Zebra Technologies Corporation	2020
Zion Bancorporation, National Association	2020
Zimmer Biomet Holdings, Inc.	2020
The Gap, Inc.	2021
Schlumberger N.V.	2020
Celanese Corporation	2020
Xilinx, Inc.	2020
Hess Corporation	2020
Teledyne Technologies Incorporated	2020
Bank of America Corporation	2020
Walmart Inc.	2020
UnitedHealth Group Incorporated	2020
Marathon Petroleum Corporation	2020
AT&T Inc.	2020
Alphabet Inc.	2020
Exxon Mobil Corporation	2020
DISH Network Corporation	2020
The AES Corporation	2020
Waters Corporation	2022
CVS Health Corporation	2020
Raytheon Technologies Corporation	2020

C. Companies by Sector

Communication Services (n=22)	Energy (n=22)	Utilities (n=27)
Fox Corporation	Phillips 66	Alliant Energy Corporation
Discovery, Inc.	APA Corporation	American Water Works Company, Inc.
The Interpublic Group of Companies, Inc.	Devon Energy Corporation	Atmos Energy Corporation
Live Nation Entertainment, Inc.	Diamondback Energy, Inc.	CMS Energy Corporation
Twitter, Inc.	Marathon Oil Corporation	DTE Energy Company
Take-Two Interactive Software, Inc.	Halliburton Company	Consolidated Edison, Inc.
Electronic Arts Inc.	ConocoPhillips	Edison International
Lumen Technologies, Inc.	EOG Resources, Inc.	Entergy Corporation
Omnicom Group Inc.	Baker Hughes Company	Evergy, Inc.
Netflix, Inc.	Chevron Corporation	FirstEnergy Corp
Charter Communications, Inc.	Occidental Petroleum Corporation	NiSource Inc.
Facebook, Inc.	NOV Inc.	Sempra Energy
T-Mobile US, Inc.	Valero Energy Corporation	Ameren Corporation
Comcast Corporation	Kinder Morgan, Inc.	Exelon Corporation
Activision Blizzard, Inc.	ONEOK, Inc.	Duke Energy Corporation
The Walt Disney Company	Pioneer Natural Resources Company	The Southern Company
ViacomCBS Inc.	Cabot Oil & Gas Corporation	NextEra Energy, Inc.
Verizon Communications Inc.	The Williams Companies, Inc.	Dominion Energy, Inc.
News Corporation	Schlumberger N.V. (Schlumberger Limited)	American Electric Power Company Inc.
AT&T Inc.	Hess Corporation	NRG Energy, Inc.
Alphabet Inc.	Marathon Petroleum Corporation	Eversource Energy
DISH Network Corporation	Exxon Mobil Corporation	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	AvalonBay Communities, Inc.	The Kroger Co.
Avery Dennison Corporation	Alexandria Real Estate Equities, Inc.	Church & Dwight Co., Inc.
Amcor PLC	Duke Realty Corporation	Campbell Soup Company
Ball Corporation	Equity Residential	Monster Beverage Corporation
Eastman Chemical Company	Essex Property Trust, Inc.	Conagra Brands, Inc.
FMC Corporation	Extra Space Storage Inc.	The Clorox Company
LyondellBasell Industries N.V.	Federal Realty Investment Trust	The Hershey Company
Martin Marietta Materials, Inc.	Iron Mountain Incorporated	Kellogg Company
The Mosaic Company	Kimco Realty Corporation	Hormel Foods Corporation
Nucor Corporation	SBA Communications Corporation	Archer-Daniels-Midland Company
PPG Industries, Inc.	Host Hotels & Resorts, Inc.	McCormick & Company, Incorporated
The Sherwin-Williams Company	CBRE Group, Inc.	Kimberly-Clark Corporation
Newmont Corporation	Prologis, Inc.	Sysco Corporation
Freeport-McMoRan Inc.	Crown Castle Inc.	Colgate-Palmolive Company
Ecolab Inc.	Simon Property Group, Inc.	The Estée Lauder Companies Inc.
International Paper Company	Equinix, Inc.	Tyson Foods, Inc.
Dow Inc.	Digital Realty Trust, Inc.	General Mills, Inc.
DuPont de Nemours, Inc.	American Tower Corporation	Altria Group, Inc.
Linde plc	Public Storage	Costco Wholesale Corporation
Air Products and Chemicals, Inc.	Mid-America Apartment Communities, Inc.	Mondelez International, Inc.
WestRock Company	Welltower Inc.	Philip Morris International Inc.
Corteva, Inc.	Realty Income Corporation	The Kraft Heinz Company
Packaging Corporation of America	Healthpeak Properties, Inc.	PepsiCo, Inc.
Sealed Air Corporation	Regency Centers Corporation	The Coca-Cola Company
CF Industries Holdings, Inc.	Boston Properties, Inc.	The Procter & Gamble Company
Vulcan Materials Company	UDR, Inc.	Walgreens Boots Alliance, Inc.
Celanese Corporation	Vornado Realty Trust	Brown-Forman Corporation
	Ventas, Inc.	The J. M. Smucker Company
	Weyerhaeuser 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.	Berkshire Hathaway Inc.	McKesson Corporation
Amazon.com, Inc.	Arthur J. Gallagher & Co.	AmerisourceBergen Corporation
AutoZone, Inc.	Cincinnati Financial Corporation	Cerner Corporation
BorgWarner Inc.	Comerica Incorporated	Bio-Rad Laboratories, Inc.
Bath & Body Works, Inc.	Franklin Resources, Inc.	Catalent, Inc.
V.F. Corporation	Fifth Third Bancorp	The Cooper Companies, Inc.
Under Armour, Inc.	First Republic Bank	Charles River Laboratories International, Inc.
Ulta Beauty, Inc.	Globe Life Inc.	Quest Diagnostics Incorporated
Tapestry, Inc.	Huntington Bancshares Incorporated	Davita Inc.
Ralph Lauren Corporation	Invesco Ltd.	Hologic, Inc.
PVH Corp.	KeyCorp	Henry Schein, Inc.
Carnival Corporation	American International Group, Inc.	Incyte Corporation
MGM Resorts International	The Allstate Corporation	Abbott Laboratories
Domino's Pizza, Inc.	Marketaxess Holdings Inc.	Amgen Inc.
Caesars Entertainment, Inc.	M&T Bank Corporation	Mettler-Toledo International Inc.
Hanesbrands Inc.	T. Rowe Price Group, Inc.	Regeneron Pharmaceuticals, Inc.
Hilton Worldwide Holdings Inc.	Moody's Corporation	ResMed Inc.
Las Vegas Sands Corp.	S&P Global Inc.	IDEXX Laboratories, Inc.
Wynn Resorts, Limited	Aon plc	Moderna, Inc.
Etsy, Inc.	Marsh & McLennan Companies, Inc.	Intuitive Surgical, Inc.
Expedia Group, Inc.	The Progressive Corporation	Edwards Lifesciences Corporation
Garmin Ltd.	The Hartford Financial Services Group, Inc.	Baxter International Inc.
Hasbro, Inc.	Fiserv, Inc.	Becton, Dickinson and Company
Leggett & Platt, Incorporated	Synchrony Financial	Stryker Corporation
LKQ Corporation	Truist Financial Corporation	HCA Healthcare, Inc.
Mohawk Industries, Inc.	Loews Corporation	Boston Scientific Corporation
Norwegian Cruise Line Holdings Ltd.	Capital One Financial Corporation	Biogen Inc.
Starbucks Corporation	The Goldman Sachs Group, Inc.	Thermo Fisher Scientific Inc.
Chipotle Mexican Grill, Inc.	The Bank of New York Mellon Corporation	IQVIA Holdings Inc.
Genuine Parts Company	Citigroup Inc.	Cardinal Health, Inc.
CarMax, Inc.	MetLife, Inc.	Centene Corporation
D.R. Horton, Inc.	Lincoln National Corporation	Eli Lilly and Company
Best Buy Co., Inc.	Prudential Financial, Inc.	Humana Inc.
Dollar Tree, Inc.	Intercontinental Exchange, Inc.	Gilead Sciences, Inc.
O'Reilly Automotive, Inc.	American Express Company	Pfizer Inc.
eBay Inc.	CME Group Inc.	The Cigna Group
Booking Holdings Inc.	The Charles Schwab Corporation	Johnson & Johnson
Ross Stores, Inc.	The Travelers Companies, Inc.	Illumina, Inc.
Tesla, Inc.	Morgan Stanley	Merck & Co., Inc.
Lennar Corporation	Principal Financial Group, Inc.	Medtronic plc
McDonald's Corporation	U.S. Bancorp	Danaher Corporation
The TJX Companies, Inc.	BlackRock, Inc.	Dexcom, Inc.
Dollar General Corporation	Chubb Limited	Bristol-Myers Squibb Company
Lowe's Companies, Inc.	MSCI Inc.	Anthem, Inc.
Marriott International, Inc.	The PNC Financial Services Group, Inc.	Agilent Technologies, Inc.
Target Corporation	JPMorgan Chase & Co.	Align Technology, Inc.
Nike, Inc.	Nasaq, Inc.	Zoetis Inc.
General Motors Company	Aflac Incorporated	Vertex Pharmaceuticals Incorporated
Aptiv PLC	Wells Fargo & Company	AbbVie Inc.
Advance Auto Parts, Inc.	Ameriprise Financial, Inc.	Laboratory Corporation of America Holdings
Whirlpool Corporation	Citizens Financial Group, Inc.	Organon & Co.
Darden Restaurants, Inc.	Assurant, Inc.	PerkinElmer, Inc.
Ford Motor Company	Northern Trust Corporation	Perrigo Company plc
NVR, Inc.	PPL Corporation	West Pharmaceutical Services, Inc.
Newell Brands Inc.	Everest Re Group, Ltd.	Abiomed, Inc.
PENN Entertainment, Inc.	Regions Financial Corporation	STERIS plc
PulteGroup, Inc.	Raymond James Financial, Inc.	Teleflex Incorporated
Pool Corporation	SVB Financial Group	Universal Health Services, Inc.
Royal Caribbean Cruises Ltd.	Cboe Global Markets, Inc.	Viatris Inc.
Tractor Supply Company	Discover Financial Services	Bio-Techne Corporation
Yum! Brands, Inc.	People's United Financial, Inc.	Dentsply Sirona Inc.
The Gap, Inc.	Unum Group	Zimmer Biomet Holdings, Inc.
Walmart Inc.	Abiomed, Inc.	UnitedHealth Group Incorporated
	W. R. Berkley Corporation	Waters Corporation
	Zion Bancorporation, National Association	CVS Health Corporation
	Bank of America 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.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240SB253

24 https://leginfo.legislature.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

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