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SEC Proposed Regulations on Climate Related Disclosures and Climate Related Risks

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Introduction

Today many large corporations voluntarily produce climate-related disclosures with detailed breakdowns of their environmental impact from corporate activities. As consumers have become more concerned with Environmental, Social, and Governance (ESG) requirements and government intervention has increased with environmental impacts, it is no surprise that companies have voluntarily moved to release these reports. Many of the voluntary reports have been longstanding. The authors of "How Green is the Apple?" (2020) author reports that between "2003 and 2018, Apple published 40 product environmental reports, and 24 appeared in 2018 alone that covered 8 product lines" (pg. 314). As another example, Ford published their first Environmental Sustainability report in 1999 and has been publishing annual reports available to the public on Ford's website. Similarly, Nike released their first Corporate Responsibility Report in 2001, with their very first Corporate Environmental Policy adopted earlier in 1998 (pg. 8). These reports show the social pressure of companies to display "green" behaviors and make an effort to become more sustainable. It is essential to see how societal views impact businesses and their influence on government intervention.

In March 2022, the SEC proposed regulations to mandate and standardize climate-related disclosures, raising concerns about the specifics of implementing the new proposed regulations. The proposed regulations aim to help investors understand companies' potential risks related to the companies' environmental activities and impact. In the case of the three aforementioned corporations in different industries with a long history of environmental disclosure reports, a surface review of the reports shows there can be some differences, such as metrics reported, methods used in collecting data, and different corporate goals, to name a few. The complexity of the standardization of environmental reports has raised concerns about the type of information to be included in the report and whether the required information will be

relevant when considering disclosures across vastly different industries. In addition, there are concerns about required environmental, financial disclosures with annual audited financial statements with a materiality threshold of 1%, which may impose a high compliance burden, especially for smaller companies. In light of these concerns, this paper will contain a brief overview of the differences between a sample of current voluntary corporate disclosures, explore the SEC proposed regulations, and concerns about scope 3 emissions and the effect on accounting practices from the proposed regulations. It will support reporting scope 3 emissions and propose the standardization of emissions factors to solve the current issues of scope 3 emissions estimations.

Background

This section briefly compares the reports between Apple, Ford, and Nike. Across different industries, there can be some similarities between corporate environmental disclosure reports. The following metrics listed for each company are not comprehensive. Apple's latest Environmental Progress Report contains information on greenhouse gas emissions, total carbon footprint, measurable renewable energy use, sustainable sourcing of materials, waste reduction, and chemical reporting. Ford's 2022 environmental report contains information on greenhouse gas (GHG) emissions, usage of carbon-free electricity, sustainable sourcing of natural resources, plastics recycling, and sales of electric vehicles. Nike's FY21 Impact report contains information on GHG emissions, percent usage of renewable electricity, waste reduction, freshwater use reduction, and hazardous chemicals reduction.

The three companies have similar data collections for Scope 1 and Scope 2 emissions, total carbon footprint, renewable electricity usage, and waste reduction metrics. The Environmental Protection Agency defines Scope 1 emissions as "direct greenhouse (GHG)

emissions that occur from sources that are controlled or owned by an organization" and Scope 2 emissions as "indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling" (para. 1). Scope 3 GHG emissions are defined as "the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain" (Description of Scope 3 Emissions). Sources of this can be from but not limited to production, transportation, employees, and waste byproducts from manufacturing, which can constitute a significant portion of a company's carbon footprint. As seen in the Regulation S-K changes section, the Scope 1 and Scope 2 emissions will be mandated with attestation requirements. In the current state, the three companies use internal controls and processes to collect the data for Scope 1 and Scope 2 emissions.

There may be issues comparing Scope 3 emissions across the reports among the three companies. As Downie & Stubbs (2012) noted in their paper, "the accuracy of scope 3 emission assessments depends upon the source of the data and, in particular where actual emission data are not available, on the EFs [emission factors] used to convert volume of activity or quantity of a product used into emissions" (pg. 413). In this same paper, the authors found there could be variations between companies' reported scope 3 emission assessments due to different sources of EF providers. Apple, Ford, and Nike all report scope 3 emissions data, but only Apple provides the emissions factors it uses, which could result in slightly different numbers and make it more complex to compare reports. In addition, a large portion of this data relies on suppliers' cooperation and reporting, as in Apple's case, which has many foreign suppliers.

In addition, the reports do not discuss the materiality standard, which is discussed in SEC's proposed regulations. As the authors of "The Need for Sector-Specific Materiality and Sustainability Reporting Standards" point out, they would expect to see unique examples of

disclosures by specific industries, such as fuel practices in the airline industry or renewable energy portfolios for the utilities industry (Eccles et al., 2022). In Ford's case, their disclosure of electric vehicles and related metrics may be expected in the auto industry but would not necessarily be expected in Apple's electronics industry. This ambiguity adds to the complex challenge of standardizing environmental disclosures across different industries.

Regulation S-X Changes Summary

The SEC has proposed a new Article for Regulation S-X that would mandate specific financial statement disclosures. The SEC requires any publicly traded companies, companies with more than $10 million in total assets and a class of equity securities, or if it lists securities on a U.S. exchange, to file. The SEC provides the following definition of who is required to disclose the proposed financial statement disclosures, "If a registrant is required to file the disclosure required by subpart 229.1500 in a form that also requires audited financial statements, under our proposal it would be required to disclose in a note to its financial statements certain disaggregated climate-related financial statement metrics that are mainly derived from existing financial statement line items" (2022, pg. 110). In other words, the financial statement disclosures are to be included only with the annual audited financial statements. The disclosures would be subject to audit, presumably by the same registrant's auditor.

The SEC categorizes the required disclosures into the following three categories: Financial Impact Metrics, Expenditure Metrics, and Financial Estimates and Assumptions. According to the Gibson Dunn (2022) article, these financial metrics would need to meet the disclosure threshold, which means "a particular metric would need to be disclosed if the absolute value of all climate-related impacts or expenditure/costs, as applicable, with respect to

a corresponding financial statement line item represents at least 1% of that line item" (Section IV, Part A). The calculation methodology must also be consistent with the rest of the financial statements.

The SEC estimates "there were approximately 6,220 registrants that filed on domestic forms […] Among the registrants that filed on domestic forms, approximately 31 percent were large accelerated filers, 11 percent were accelerated filers, and 58 percent were non-accelerated filers. In addition, we estimate that approximately 50 percent of these domestic registrants were smaller reporting companies" (2022, pg. 295). In the case of small businesses, the compliance burden may be relatively high compared to large businesses. Gibson Dunn reports, "the Commission estimates that annual direct costs to comply with the proposed rules [..] would range from $490,000 (smaller reporting companies) to $640,000 (non-smaller reporting companies) in the first year and $420,000 to $530,000 in subsequent years" (2022, section I). It should be noted that these estimated costs also account for the compliance costs associated with Regulation S-K changes.

Regulation S-K Changes Summary

For Regulation S-K, the SEC is proposing mandated climate-related disclosures along with attestation requirements for Scope 1 and Scope 2 metrics for accelerated filers and large accelerated filers. The SEC believes that "GHG emissions data is quantifiable and comparable across industries […] and it may be relevant to investment or voting decisions because GHG emissions could impact the company's access to financing as well as its ability to reduce its carbon footprint in the face of regulatory, policy, and market constraints" (2022, pg. 147). The changes to Regulation S-K would only mandate Scope 3 emissions if material or already has previously set a goal for Scope 3 emissions. As seen with the environmental disclosure reports

from Apple, Ford, and Nike, the SEC appears to be accurate in that the GHG emissions data can be compared across industries.

Scope 3 Emissions

According to Huang et. al, scope 3 emissions can constitute "about 75 per cent of an industry sector's carbon footprint" (Huang et al. 2009 as cited in Downie & Stubbs, 2012). This is still a reasonable estimate in current times, as seen in Apple's environmental impact report (2022), which reports that Scope 3 GHG emissions now account for over 99% of its 22.5 million metric tons of net carbon emissions after its successful efforts in reducing Scope 1 and Scope 2 GHG emissions (pg. 13). In Nike's FY21 Impact report, the data table shows that Scope 3 emissions account for 98.9% of Nike's total carbon emissions (pg. 151). Companies who are not actively trying to reduce Scope 1 and Scope 2 emissions will have a lower percentage of the total carbon footprint for Scope 3. As more companies begin to also successfully target and reduce Scope 1 and Scope 2 GHG emissions, like Apple and Nike, there will be greater discussion around Scope 3 GHG emissions regardless of the SECs proposed regulations.

In the current proposed rules, companies would need to disclose Scope 3 emissions if they are material or if they have already set Scope 3 emissions reduction goals, however, the SEC has also included additional accommodations and exemptions. For the proposed disclosures excluding Scope 3 emissions, there is a phase-in of one year for large accelerated filers, two years for accelerated or non-accelerated filers, and three years for smaller reporting companies. The SEC has recognized that "calculating and disclosing Scope 3 emissions could represent a challenge for certain registrants, in particular those that do not currently report such information on a voluntary basis," so they have proposed three additional accommodations for

the Scope 3 emissions disclosures (SEC, 2022, pg. 209). First, smaller reporting companies (SRCs) would be exempt from Scope 3 emissions disclosure requirement. Secondly, the compliance dates for Scope 3 emissions disclosure are plus an additional year to the phase-in years for the three different registrant status assuming the company meets the requirements for a mandatory Scope 3 emissions disclosure. Lastly, the SEC is proposing a safe harbor for Scope 3 emissions disclosures. They propose that this safe harbor would "provide that disclosure of Scope 3 emissions by or on behalf of the registrant would be deemed not to be a fraudulent statement unless it is shown that such statement was made or reaffirmed without a reasonable basis or was disclosed other than in good faith" (SEC, 2022, pg. 211). This standard would make it considerably easier for companies to be shielded from liability as investors would need to prove the companies provided disclosures in bad faith, which is a high bar to clear.

The scope 3 GHG emissions disclosure requirement for certain companies is controversial. According to Liz Hoffman, a former reporter for The Wall Street Journal, there have been rumors that SEC may drop the scope 3 emissions provision from the finalized rules, which are anticipated to be published sometime in 2023 (Semafor, 2022). Writer Jacob Hupart for the Mintz (2022) notes that "of all the comment letters received opposing the SEC's proposed climate disclosures, the most frequent change sought--by far--was the removal of the Scope 3 GHG disclosure requirement. (Sixty-nine comments advocated for that position; the next most common suggested change […] only had half as many comments)" (para. 2). If the SEC does drop the Scope 3 disclosure requirement this time around in 2023, it is still worth discussing the challenges of Scope 3 emission assessments that will eventually become a greater percentage of the companies' total carbon footprint as Scope 1 and Scope 2 emissions are gradually reduced. If it is not included in the finalized rules in 2023, it certainly will re-

appear in the public discussion at some later year. The discussions will likely continue to have questions about the accuracy and transparency of comparing Scope 3 GHG emission assessments across different companies.

Emission Factors

Companies can report their Scope 3 GHG emissions using data from the emission sources, but this may not always be available or accessible for companies. In that case, they may use emission factors (EF) which are numerical values used in estimating emissions associated with specific activities, which can come with a host of issues. Downie and Stubbs (2012) note that "the accuracy of scope 3 emission assessments depends upon the source of the data and, in particular where actual emission data are not available, on the EFs used to convert volume of activity or quantity of a product used into emissions" (pg. 413). This means there can be underestimation or overestimation on GHG emissions simply by changing the emission factors used, which can be sourced from any third-party providers. This can be mitigated by getting the actual emission data but as mentioned earlier, "it is a challenge for organizations to get access to data to calculate scope 3 emissions, particularly emission data from their supply chains" (pg. 413). Due to the difficulty of accessing Scope 3 emissions data even for large companies with great resources at its disposal, it means the emission factors will play a significant role in scope 3 emissions disclosures among companies. Since the SEC has proposed a limited safe harbor rule for Scope 3 emissions disclosures, it seems unlikely the emissions factors will become standardized across companies when there are many reputable options companies can choose from in good faith.

The lack of standardization and the difficulty of comparing results across companies is a focus point in Downie and Stubb's paper "Corporate Carbon Strategies and Greenhouse Gas

Emission Assessments: The Implications of Scope 3 Emission Factor Selection." In this paper, they assess the quality of the scope 3 emission reporting and its comparability across different companies. While the paper looks at Australian companies, it is highly relevant for United States and the SEC's goals to implement standardized emission disclosures across companies and can provide suggestions to improve the standardization of the disclosures. In one example of their analysis, they compared the reported Scope 3 emissions from flights and found that "participants reported a variety of sources of EF data to calculate greenhouse gas emissions from flights […] the problem lies not just in which information source to use for the EFS, but also whether or not to use a radiative forcing index (RFI) multiplier [… which] takes into account the impacts of altitude, contrails, water vapor and other gases" (pg. 417). Evidently, each industry likely has oddities like the radiative forcing index (RFI) multiplier for the flight industry that can impact scope 3 reporting even if same emission factors are used. With the SEC's proposed safe harbor law, the decision to not use the RFI would probably still be considered to have been done in good faith. Additional government guidance would be needed in order to create consistent standardization between the disclosures among the companies. In the same Downie and Stubb study, the majority of the participants supported using the Australian government's emission factors and most did voluntarily used them (pg. 420). Likewise, a US governmental agency such as the US Environmental Protection Agency should issue the official emission factors to be used across all mandated Scope 3 disclosures for improved standardization. This would also resolve the questions of transparency with the use of emission factors. For instance, Apple and Nike disclose their Scope 3 emissions and its percentage of the total carbon footprint but it is not immediately clear which provider they used for emission factors to calculate the amount of Scope 3 GHG emissions. An official emission factor provider for mandated disclosures would eliminate the need for transparency rules.

Disclosure Costs

In the proposed regulations, the SEC has provided general estimated costs for compliance with the climate-related disclosures. They estimate the cost for the initial year to be about $640,000 for non-SRC registrants and $490,000 for SRC registrants (pg. 373). According to Forbes writer Robert G. Eccles (2022), who is also an advisor to the carbon software accounting firm Persefoni, the SEC's estimates are reasonable. Persefoni and NGO Ceres had previously surveyed 39 companies and 35 investors before the proposed rules were announced in order to collect voluntary cost data for climate-related disclosures (para. 2). From the voluntary data collection, they calculated an annual average of $533,000 for costs associated with GHG disclosures, climate scenario analysis, risk management, etc., which they predict will decrease year over year due to growing adoption of climate disclosures, refined institutional knowledge, and more automated software solutions. Eccles did admit that "there was probably an inherent bias in the survey responses (companies not as focused on climate disclosure are less likely to have responded to the survey and so it's different to know how representative these costs are for the total population" (para. 5). In any case, the true cost if implemented would probably not deviate unreasonably too much from the estimates provided by the SEC or Persefoni.

One issue with the SEC estimated disclosure costs is that they do not appear to breakdown the disclosure costs into smaller categories such as Scope 1, Scope 2, and Scope 3 emissions. It is not immediately clear if Scope 3 GHG emission assessments are prohibitively expensive compared to Scope 1 and Scope 2. As previously mentioned, Downie and Stubb claim that the majority of Scope 3 emission estimates are obtained through calculations with emission factors. This would then require hiring or consulting with domain experts as opposed to collecting direct source data for Scope 1 and Scope 2 disclosures. This would be expensive, but the SEC did propose to exempt SRCs from the mandatory disclosure requirement. In the Regulations S-X

Changes Summary section of this paper, it was also mentioned that the SEC estimated there are 6,220 registrants with approximately 50% representing SRCs, so there would be at most 3,110 registrants with a mandatory Scope 3 disclosure requirement.

Current Practices

The Center for Audit Quality (2022) analyzed 10-Ks from the S&P 500 companies to explore the current state of climate disclosures in financial reporting. Their analysis found that 453 of the 500 companies mentioned climate-related information in their 10-Ks, but the content and extent of the information varied. They "observed that some companies disclose actual emissions and reduction amounts, and others only disclose their goals for future emissions reduction. While some companies disclose climate-related costs, those disclosures vary from capital expenses, research and development (R&D), or regulatory and compliance costs" (Overview section). The majority of climate disclosures in financial reporting were in Item 1A. Risk Factors (437 companies) as opposed to Item 8 Financial Statements (only 18 companies) (10-K Where Climate-related Information is Mentioned section). The SEC has said, "physical risks may include harm to businesses and their assets arising from acute climate-related disasters such as wildfires, hurricanes, [..] and heatwaves" when discussing the rationale for the mandatory disclosures of climate-related risks (pg. 55). In their 2021 10-K forms in Item 1A, Apple and Ford also report climate impact as risk factors as natural disasters instead of extreme weather in Nike's case. In the current state of climate disclosures in financial reporting for the S&P 500 companies, there would be a deficiency in the 10-K form by the SEC proposed regulations as certain disaggregated climate-related financial statement metrics need to be reported. It is reasonable to assume that beyond the S&P 500 companies, to include the approximately 6,200 registrants with fewer resources, the deficiencies are greater.

According to the Governance & Accountability Institute (2022), 96% of S&P 500 companies and 81% of Russell 1000 companies have provided sustainability reports, which are non-financial reporting (para. 1). These reports typically report the amount of GHG emissions and occasionally include projected investments. Ford, for example, gives estimated investments into their electric vehicles and the electrification of manufacturing centers with the reasoning that these will reduce GHG emissions overall. Apple details the costs of carbon offsets and credits they purchased or plans to purchase to reduce their total carbon footprint. They also invested in renovating corporate facilities to use renewable energy to reduce GHG emissions. Apart from these detailed investments, the reports from these three companies, while not necessary to do so, do not seem to list the actual costs associated with risks from Scope 1 and Scope 2 emissions as we would expect to see in a 10-K form that complies with the SEC proposed regulations. This observation is supported by Eccles et al. (2012), who describes Framework's work on studying 100 companies' links between their sustainability reports and the reported 10-K form. Framework found that 60% of companies had minimal alignment between their sustainability report and their 10-K forms (pg. 67). Only eight companies were found to be aligned "to a large degree." Even companies who are already voluntarily publishing reports, it will require additional resources for compliance with the SEC proposed regulations despite their early start advantage.

Regulations

The proposed changes for Regulation S-K would require disclosures of climate-related risks if they are deemed material to the company. The SEC proposes the materiality determination to be made similarly to when "preparing the MD&A section in a registration statement or annual report" (pg. 65). They define materiality as the "substantial likelihood that

a reasonable investor would consider it important when determining whether to buy or sell securities or how to vote" (pg. 64). Different industries would have differing materiality determinations for risks. In their example, they cite wildfires in California as possibly material for wineries which would not be material for another industry. This ambiguity leads to an issue of standardization when there is no clear guidance on environmental materiality in specific industries. According to Eccles et al. (2012), some of whom are publishing from the Harvard Business School, "without standards, the investment community cannot make meaningful "apples-to-apples" comparisons of performance among companies and over time" (pg. 65). They give examples of disclosures they would expect to see in different industries such as fuel practices in the airline industry or renewable energy portfolios for the utilities industry. In order to reduce the risk of non-compliance and provide clarification, the SEC should provide sector-specific standards for materiality. As it is in the proposed regulations, the SEC does not require companies to use a specific GHG framework.

The proposed changes for Regulation S-X would "require a registrant to disclose in a note to its financial statements certain disaggregated climate-related financial statement metrics" (pg. 160). This would include the 10-K form, which is an annual report a company produces on its financial performance. The disclosures will be presented in a section with the caption "Climate-Related Disclosure," which will fall into three categories: financial impact metrics, expenditure metrics, and financial estimates and assumptions. According to the SEC, the "proposed financial statement metrics disclosures would involve estimation uncertainties that are driven by the application of judgments and assumptions, similar to other financial statement disclosures (e.g., estimated loss contingencies, fair value measurement of certain assets, etc." (pg. 110). These judgments and assumptions would need to be explained so that it is clear how the estimations were derived. The company also needs to report disaggregated

climate impacts on a line-by-line basis. They provided an example on pg. 123 in the proposed regulations, as seen in the figure below.

F/S line-item	F/S balance (from consolidated financial statements)	Impact of Events A and B	Impact of Event C	Impact of Transition Activity D	Absolute value of impacts	Percentage impact
Cost of revenue	$10,000,000	-$300,000	+$70,000	+$90,000	$460,000	4.6%

In their example, event A could represent a severe weather risk that negatively impacts the cost of supply by $100,000. Event C could represent improved technology to better manage the risks of severe heat representing a credit of $70,000. Provided that all these events are relevant for the cost of revenue, the aggregated value from Events A, B, C, and D exceeds the 1% threshold and must be reported accordingly.

Speculation

From an accounting and CPA firms' perspective, there are questions regarding the GHG attestation requirement. As part of the SECs proposed regulations, the attestation is required for Scope 1 and Scope 2 GHG emissions. According to PwC (2022), an accounting firm, many of their clients, that include "CFOs, controllers, and chief accounting officers that we speak with say they plan to use their financial statement auditor going forward, simply because the GHG information will now be part of the company's SEC filing and they want the level of trust they have come to expect from their independent financial statement auditor" (para. 4). PwC believes the attestation requirement means there is a higher level of rigor required than what engineering firms provide. They describe the professional procedures an accounting firm would do for the attestation requirement:

> "For example, in addition to inquiries, sample testing and analytics, this will typically include procedures to obtain comfort that the sources of data are complete, the

> assumptions and estimation methodologies are reasonable, the process in place is consistent and repeatable, the process and criteria used to prepare the metrics are publicly available, and that when errors are identified those are not likely to lead the metric to be materially misstated“ (para 6).

While accounting firms can provide the higher level of rigor required, it seems likely that they will need to recruit outside experts for technical expertise to make reasonable judgments about the completeness of data sources, the accuracy of the assumptions and estimation methodologies, and the potential of errors. For example, in Apple's 2021 environmental impact report, they reported using Apex Companies and Fraunhofer Institute for assurance of their climate reports. Apex Companies is a consultancy that provides engineering expertise, while Fraunhofer Institute is a self-professed world-leading applied research organization. Suppose PwC were to provide the assurance statement for Apple. In that case, they would likely need a pool of experts that can provide a similar caliber of technical expertise as Apex Companies or Fraunhofer Institute. However, it is unclear if this would be needed for all companies because PwC provided the assurance report for Nike's 2021 sustainability report. It is possible that due to Nike's athletic wear industry, a higher level of technical expertise is not needed compared to Apple's sustainability report despite the fact that both companies reported similar metrics. It may turn out that companies like Apex are better suited for the attestation requirement due to the technical expertise needed.

European Union

As companies have begun to release environmental impact reports and focus on ESG initiatives, there has been a global push for regulations on environmental data reporting. There has been criticism that the SEC proposed regulations are too restrictive and can potentially hurt

companies. However, the SEC regulations were proposed two years after the European Union (EU) adopted the Corporate Sustainability Reporting Directive (CSRD) and the reporting requirements of CSRD are much more comprehensive. The EU, known for its environmental policies, had already instituted regulations for corporate sustainability reporting through the Non-Financial Reporting Directive (NFRD) and the CSRD is an extension of it. In April 2020, the EU commission announced its adoption of the CSRD under the European Green Deal (2023, Wajon). The Directive builds upon the already existing NFRD, by increasing the number of companies that must comply and reporting requirements (Wajon, 2023,). Companies operating in both regions, will now have to comply with both the CSRD reporting requirements as well as the SECs regulations, if they are implemented. It can be argued that the SEC is behind the curve and that its reporting requirements are not detailed enough.

In January 2023, the CSRD became established and will oversee sustainability reporting for approximately 50,000 companies (European Commission). Under the CSRD, all companies with securities in EU markets, large companies, parent companies of "large groups" that satisfy the criteria of large companies, and small and medium-sized enterprises (SMEs) with transferable securities on an EU regulated market, will have to comply with its regulatory requirements (2022, Bullock). After the year 2028, non-EU companies that have a turnover above €150 million in the EU will also be required to comply. This means U.S. based companies could be required to comply under both reporting requirements. Similarly, to the U.S. regulations, they will have a phase-in process. Large companies subject to the NFRD will have to comply in 2024, large companies not currently covered by the NFRD must comply in 2025, while SMEs have until 2026 to comply.

Under the NFRD regulations, companies were required to report on "environmental protection, social responsibility and treatment of employees, respect for human rights, anti-

corruption and bribery, and diversity on company boards" (Kreusch, 2022, Which information will have to be disclosed). The NFRD requirements outline environmental protection and have been around since 2014. The CSRD regulations add "reporting requirements for double materiality (impact on the environment and society), sustainability risk (including climate change) affecting the company, companies impact on society, process to select material topics for stakeholders, more forward looking information, including targets and progress thereon, disclose information relating to intangibles (social, human, and intellectual capital), and reporting in line with Sustainable Finance Disclosure Regulation and the EU Taxonomy Regulation" (Kreusch, 2022, Which information will have to be disclosed). They will also be required to report their greenhouse gas emissions, including scope 3 emissions. The CSRD includes more environmental data requirements showing a trend of increasing regulations for standardization of data reporting. Meanwhile, the U.S. has proposed less detailed regulations in 2022, showing a slower rate and more leniency through stipulations like the safe harbor addition.

Similar to the U.S. regulations, the CSRD requires an audit assurance for the reported sustainability requirement. It will be included in the entity's management report and will not be a stand-alone report. This would also make it easier for U.S. entities to comply by including it in the management report as part of the 10-K. It is also required to be in a standardized digital format. There is an exemption to the CSRD reporting requirements if the parent's subsidiary disclosures are determined to be "equivalent" to the EUs. However, it is not clear whether the SECs proposed regulations would pass the equivalence test. The SECs proposed regulations have similar aspects such as the required registrants, phase-in process, audit assurance, and goal of standardization, but the required disclosures differ due to the EUs extensive detail on environmental goals as well as other ESG goals and it predates the SECs. Therefore, it can be argued that the U.S. is simply following the global trend of environmental data reporting

standardization and is not restrictive, because most international companies will already be required to release similar information.

Conclusion

There are rumors that the SEC may drop the scope 3 emissions disclosure provision due to its controversy. However, **the SEC should keep the provision and expand it beyond its original intention**. The proposed regulations aim is to help investors and stakeholders make informed decisions about the companies. There is no doubt that scope 3 emissions can be material for some companies, which would ultimately affect the investors' and stakeholders' decisions if there were mandated scope 3 emission disclosures. This, in effect, would also influence the company's actions with increased accountability and transparency. In the current state of disclosures, these investors are negatively impacted by the lack of standardized climate-related disclosures. If the SEC were to drop the scope 3 emissions provision, these investors would remain negatively impacted. While it is true that there would still be mandated scope 1 and scope 2 emission disclosures for the stakeholders' benefit, it has been shown that these emissions sometimes constitute a small portion of the company's total emissions. In Nike's case, scope 3 emissions comprised 98% of its total carbon footprint. For Apple, scope 3 emissions accounted for at least 99% of its total emissions. Huang et al. estimated scope 3 emissions to account for 75% of companies' total emissions across industries (2012). It stands to reason that if there are scope 1 and scope 2 emissions that are truly material and would influence stakeholders' decisions, then material scope 3 emissions would assuredly have a more significant impact on decision-making given how large the scope of total emissions scope 3 emissions accounts for. In addition, there is a real possibility that with only mandated scope 1 and scope 2 disclosures, the companies may choose to spend resources on reducing only scope

1 and scope 2 emissions, which is not an issue itself. However, the mandated disclosures for only scope 1 and scope 2 would then provide an incentive for company decisions to focus resources away from scope 3 emissions, especially for smaller companies that need to do a cost-benefit analysis regarding compliance costs. This could give an inaccurate picture of the company's climate-related risks. An example of such a decision would be a company's decision to shift a part of a manufacturing process to a third-party supplier, as this would make the business activity an indirect source of emissions rather than direct emissions. It would translate to a reduction in scope 1 and scope 2 emissions, but in reality, this emission is shifted away to scope 3. On paper, it would seem the business has an active, long-term risk management plan with the goal of decreasing scope 1 and scope 2 emissions, but the climate risks remain the same for scope 3 emissions except the third-party supplier is now the exposed risk for the company. This could give a false impression of the companies' climate-related risks given how large scope 3 emissions are compared to scope 1 and scope 2. For smaller companies, the compliance costs for scope 1 and scope 2 emissions may make this shifting of business activities more likely.

The arguments against scope 3 disclosures are then due to the difficulty of accurately measuring scope 3 emissions and other issues outlined in the previous scope 3 emissions section. These are reasonable arguments and criticisms against the provision, but they are not reasons to keep investors deprived of tools to make well-informed decisions. Rather than scrapping the scope 3 emission disclosure provision altogether, the SEC should continue to work to mitigate the issues and concerns so that it can fulfill its duty to investors and stakeholders. The next section has some suggestions.

In addition to keeping the scope 3 disclosure provision, the SEC should provide or designate a federal agency as the official provider of emission factors for scope 3 calculations

to improve comparability across the companies' climate reporting. In their study, Downie and Stubbs (2012) had found that most companies trusted and supported using the Australian government's emission factors (pg. 420). It seems likely that most US companies would also support using a governmental provider of emission factors. This would also help improve accuracy by ensuring companies are using the most up-to-date and transparent emission factors for their calculations. This was a deficiency noted by Downie and Stubbs where use of different versions of the same emission factors was found across companies that shared the same provider. Another benefit of a designated provider of emission disclosures would be reduced compliance costs. The costs of iterative research and science for the creation and updating of emission factors would remain with the federal government and not left to the private sector, which likely would charge access for companies. With standardized emission factors, institutional knowledge can also grow more effectively as companies begin to train employees on the use of emission factors and these employees can bring the same skills during the recruiting and hiring process. Likewise, costs for software solutions developed for the scope 3 estimations would decrease with a clear source of truth and less subject matter experts needed. In addition, the standardization would also increase transparency in climate-related disclosures. For example, in the disclosure reports by Nike, Apple, and Ford, it is not immediately clear which emission factor providers were used for the scope 3 estimations. Investors would find it more difficult to compare the climate-related metrics and performance across companies if it is not transparent how the estimations were made.

There are still issues with accuracy when the SEC or a federal agency provides the emission factors. For example, in other countries like Australia, emission factors for the same item can still vary by regions or geographical location. This would decrease comparability for US companies that operate across multi-regions or internationally. The accuracy of the

calculations then depends on how precise or the number of resources the SEC invests in the official guidance for emission factors to account for the geographical variance. This is only one factor in the variance of emission factors. Types of energy sources can also influence the variance. The complexity of accounting for all nuances could take years depending on how precise the SEC wants to be. In addition, the proposed regulations did not give a strict framework presumably to give companies flexibility in estimating their scope 3 emissions. The SEC had also provided a limited safe harbor rule that shields companies from liability as long as they give their estimates in good faith. The use of emission factors then restricts the leeway companies have for estimating scope 3 emissions. Every emission calculation would need a corresponding emission factor if no direct emissions data is available. Companies may have increased liability risk at the cost of improved comparability across reports for the investors and stakeholders' benefit.

Glossary

Term	Definition
Accelerated Filers	Issuer has a public float [represents the portion of shares of a corporation that are in the hands of public investors] of $75 million or more, but less than $700 million, as of the last business day of the issuer's most recently completed second fiscal quarter
Emissions Factors	Representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e.g., kilograms of particulate emitted per megagram of coal burned)
ESG	Environmental, Social, and Governance – stakeholder-centric approach, applying non-financial factors as part of business analysis process to identify material risks and growth opportunities
GHG Emissions	Greenhouse Gases – gases in the earth's atmosphere that trap heat
Large Accelerated Filers	Issuer has a public float [represents the portion of shares of a corporation that are in the hands of public investors] of $700 million or more, as of the last business day of the issuer's most recently completed second fiscal quarter
Non-accelerated Filers	Issuer has public float [represents the portion of shares of a corporation that are in the hands of public investors] less than $60 million
Scope 1 Emissions	Direct GHG emissions that occur from sources that are controlled or owned by an organization
Scope 2 Emissions	Indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling

Scope 3 Emissions	Result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain
SRCs	Small Reporting Company - A company that has a public float of less than $250 million or less than $100 million in annual revenues (no public float or less than $700 million)

Definitions taken from the EPA and SEC

Appendix

Appendix A: Relationship Between SRCs and Filing Status

Relationships between Smaller Reporting Companies and Non-Accelerated, Accelerated, and Large Accelerated Filers under the Amendments		
Status	**Public Float**	**Annual Revenues**
Smaller Reporting Company and Non-Accelerated Filer	Less than $75 million	N/A
	$75 million to less than $700 million	Less than $100 million
Smaller Reporting Company and Accelerated Filer	$75 million to less than $250 million	$100 million or more
Accelerated Filer (not a Smaller Reporting Company)	$250 million to less than $700 million	$100 million or more
Large Accelerated Filer (not a Smaller Reporting Company)	$700 million or more	N/A

Taken from the SEC

Appendix B: SME Determining Factors

Company category	Staff headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Taken from the European Commission

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