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Climate Change, Corporate Valuation, and the Proposed SEC Disclosures Regulations

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Abstract

The point of disclosure requirements is to help investors value companies more accurately. At the margin, the benefit of more accurate valuation should equal the cost of preparing the disclosure. In the case of the new SEC proposals, the cost of meeting them will be significant, but the information provided will do little to help investors more accurately assess the impact of climate change on corporate value.

Introduction

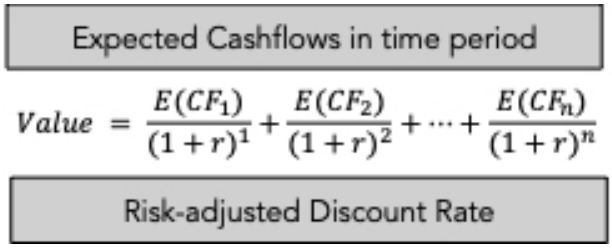
On March 21, 2022, the Securities and Exchange Commission (SEC) released its statement on proposed mandatory climate risk disclosure. In the statement, Chairman Gensler said, "Today, investors representing literally tens of trillions of dollars support climate-related disclosures because they recognize that climate risks can pose significant financial risks to companies, and investors need reliable information about climate risks to make informed investment decisions." Gensler went on to add, "In making decisions about disclosure requirements under the federal securities laws—including decisions about today's climate-related disclosures—I am guided by the concept of materiality. As the Supreme Court has explained, information is material if 'there is a substantial likelihood that a reasonable shareholder would consider it important' in making an investment or voting decision."[1] In terms of financial economics, the information that an investor would consider important is that information which would alter the investor's assessment of the value of a company. This note addresses the question of the extent to which the additional disclosures proposed by the SEC would be helpful to investors in more accurately valuing companies.

Corporate Valuation

There is no mystery as to what determines the value of a business. In its simplest form, the value of a business comes from the expected cash flows it can generate over

[1] Gensler, Gary, March 21, 2022, *Statement on Proposed Mandatory Climate Risk Disclosures*, https://www.sec.gov/news/statement/gensler-climate-disclosure-20220321.

time, discounted back at a "risk adjusted" discount rate. This is the standard discounted cash flow (DCF) valuation model. Note that there is nothing in this structure that pushes



a company towards short term profitability, because it allows that company to trade off lower profits (and cash flows) in the near term for higher profits and cash flows in the future. If climate change is going to have an impact on value, it will have to show up in either expected future cash flows or the discount rate.

In practice, virtually all investment banks and valuation practitioners use DCF models with an explicit forecasting horizon of five to ten years. That is free cash flow is forecast on a line-by-line basis for five to ten years. After the final forecast year, a continuing value is approximated by using a simplified growth model or by applying a valuation multiple. The rationale for the terminal value approximation is that beyond a horizon of ten years, it is simply too difficult to generate non-speculative line-by-line forecasts of free cash flow. This turns out to be important because in the context of climate change even ten years is a short time

Climate Change and Valuation

In order to assess how potential climate change might affect corporate valuation, and thereby require added disclosure, it is necessary to be more specific about what is meant by climate change. From a valuation perspective, it is not enough to speak

generally about “emissions,” “increasing temperatures,” or “rising sea levels” without specifying not only how much and when the impact is likely to occur.

Climate change is result of increased radiative forcing caused by the action of greenhouse gases (GHG), primarily CO2. These gases allow light from the sun to pass through largely unperturbed but absorb and re-radiate the infrared radiation from the surface of the earth. Because in equilibrium incoming and outgoing radiation must balance, the temperature of the earth rises to increase the outgoing radiation. The process continues until incoming and outgoing radiation are back in balance at a higher temperature. It can take up to a century or more for the planet to reach a new equilibrium for a given injection of GHGs.

There is a distinction between the CO2 and CO2e as a measure of emissions and atmospheric concentration. CO2e adds to CO2 the amount of other GHGs - methane, nitrous oxides, and fluorinated gases - weighted by their warming potential. Although the other GHGs are much less prevalent in the atmosphere than CO2, they are more potent warming agents so CO2e is about 50% greater than CO2. Following the most common convention, CO2 alone is used here to measure emissions and atmospheric concentrations. Because the other gases rise largely in step with CO2, this convention has little impact on the results reported here.

At the start of the industrial revolution the CO2 concentration in the atmosphere was approximately 280 parts per million. (Each part per million equates to about 7.8 gigatons of atmospheric CO2.) By 2021, the concentration was 420 ppm (0.04%). That

amounts to a net increase of atmospheric CO2 of about 1,000 gigatons. Currently, humanity is adding more CO2 at a net rate of about 20 gigatons per year.[2]

Well established scientific models imply that the 1,000 gigatons of CO2 (plus the other related GHGs) will result in an ultimate warming of about 1.5 degrees centigrade. Of that total only about half, or 0.8C, has occurred to date. The planet will reach the three-quarters point by about 2100. The remaining 0.3 to 0.5C will take centuries.[3]

The foregoing calculation ignores the fact that civilization continues to pump GHGs into the atmosphere. To take account of future emissions, the Intergovernmental Panel on Climate Change (IPCC) has developed a series of Representative Concentration Pathways (RCPs) that use various assumptions regarding future emissions to project future warming. At present the two realistic scenarios are RCP 7.0 and RCP 4.5. RCP 7.0 is a "modest emission abatement effort" scenario. This is often referred to as a" business as usual" scenario. Given the emissions path of RCP 7.0, the predicted increase in temperature is 3.0C by 2100. RCP 4.5 is an "active intervention" scenario based on current government pledges. Under RCP 4.5 emissions would peak this decade and global temperatures would rise 2.5C by 2100

It is important to recognize that climate-change activism is not about avoiding expected global warming of about 2 to 3 degrees C. Instead, it is about pushing Earth from about RCP 7.0 to RCP 4.5 i.e., reducing warming by about 0.5 degrees C from 3.0C

[2] The "net" is net of the amount scrubbed from the atmosphere by natural processes. Currently, human activity is releasing about 40 gigatons of CO2 per year, but the planet is scrubbing out about half of that.

[3] The data referenced in this article comes from: Welch, Ivo and Bradford Cornell, 2022, *Moving the Needle: A Pragmatist's Approach to Climate Change*, https://climate-change.world/home/.

to 2.5C. Consequently, activist intervention amounts to a reduction of approximately 0.5C. Currently, the OECD countries account for less than half (about a third soon) of total emissions. Therefore, reducing future emissions in OECD countries consistent with a switch from RCP 7.0 to RCP 4.5 would reduce global warming by about 0.2 degrees C. If the United States acted alone the impact would be about 40% of that, or less than 0.1degrees C.

The bottom line is that although climate change is an issue of immense importance to human civilization, it is also very slow moving, global in nature, and largely predictable as evidenced by the relatively small difference between the impact of RCP 4.5 and RCP 7.0. To the extent that future events alter the rate of emissions those events are almost certain to occur outside the OECD countries in Asia (including the Indian subcontinent), Africa, and Latin America where development will be faster and population growth greater. By 2050 the OECD countries are expected to account for only 28% of total emissions. From a valuation perspective, therefore, the climate information that investors need is more related to what will happen in non-OECD countries.

The SEC Disclosure Proposal

The proposed new rules would require registrants to include certain climate-related disclosures in their registration statements and periodic reports, including information about climate-related risks that are reasonably likely to have a material impact on their business, results of operations, or financial condition, and certain climate-related financial statement metrics in a note to their audited financial statements. The required information about climate-related risks also would include disclosure of a

registrant's greenhouse gas emissions, which have become a commonly used metric to assess a registrant's exposure to such risks.

The proposed rule changes would require a registrant to disclose information about (1) the registrant's governance of climate-related risks and relevant risk management processes; (2) how any climate-related risks identified by the registrant have had or are likely to have a material impact on its business and consolidated financial statements, which may manifest over the short-, medium-, or long-term; (3) how any identified climate-related risks have affected or are likely to affect the registrant's strategy, business model, and outlook; and (4) the impact of climate-related events (severe weather events and other natural conditions) and transition activities on the line items of a registrant's consolidated financial statements, as well as on the financial estimates and assumptions used in the financial statements.

The proposed rules also would require a registrant to disclose information about its direct greenhouse gas (GHG)emissions (Scope 1) and indirect emissions from purchased electricity or other forms of energy (Scope 2). In addition, a registrant would be required to disclose GHG emissions from upstream and downstream activities in its value chain (Scope 3) if material or if the registrant has set a GHG emissions target or goal that includes Scope 3 emissions. According to the SEC, these proposals for GHG emissions disclosures would provide investors with decision-useful information to assess a registrant's exposure to, and management of, climate-related risks, and in particular transition risks. The proposed rules would provide a safe harbor for liability from Scope 3 emissions disclosure and an exemption from the Scope 3 emissions disclosure requirement for smaller reporting companies.

Under the proposed rule changes, accelerated filers and large accelerated filers would be required to include an attestation report from an independent attestation service provider covering Scopes 1 and 2 emissions disclosures, with a phase-in over time, to promote the reliability of GHG emissions disclosures for investors. The proposed rules would include a phase-in period for all registrants, with the compliance date dependent on the registrant's filer status, and an additional phase-in period for Scope 3 emissions disclosure.

Emission Related Disclosure and Valuation

For the proposed rules to provide value relevant information two things are required. First, the disclosed climate change information must affect expected corporate cash flows or the risk of those cash flows. Second, the mandated disclosures must provide the relevant climate change information.

As to the first point, it is reasonable conclude that very long run climate information, by which is meant 2050 and beyond, will have an impact on corporate valuation. To the extent that a company is exposed to rising temperatures or the collateral effects of global warming, its cash flows could be affected. However, we are talking about the very long run with virtually all the impact occurring more than 20 years in the future, far beyond the horizon of any reasonable DCF model. In addition, the risk that the world might follow RCP 7.0 instead of RCP 4.5 should already be reflected in the values of publicly traded corporations. Only new news related to which emission path is more likely should affect valuations. But the relevant news has nothing to do with the company's own emissions. The risk to cash flows depends on *global* emissions. Global emissions, in turn, will be impacted by developments such as energy provision decisions

made by non-OECD countries and major technical innovations in the energy space. If the SEC could mandate disclosures by the governments of China and India related to their energy plans that might well provide useful valuation related information to investors. But with the two exceptions discussed below, the emissions data of individual American corporations provide essentially no value relevant information.

The same arguments that apply to expected cash flows also apply to the risk of those cash flows. As a hypothetical example, consider a plant built on low lying land in Miami that is at risk from climate related storm surges and sea level rise.[4] The primary climate change risk the plant owner faces is that China, India, Africa, and Latin America will increase future emissions. That risk is the same whether or not the plant emits any CO2. Furthermore, that risk must already be disclosed. As SEC Commissioner Pierce observes, existing SEC rules require companies to disclose material risks regardless of the source or the cause of the risk.[5] These existing requirements, like most of the SEC disclosure mandates, are principles-based and thus elicit tailored information from companies. Furthermore, companies that emit virtually no emissions such as solar panel installers face the same risks related to global emissions.

In short, companies may face very long-run valuation risks related to global emissions and climate change, but those risks are unrelated to company emissions. There is one valuation effect of the proposed disclosure rules about which there can be little dispute. The reporting requirements will transfer wealth from investors, and other

[4] Even in that case, realization of those risks would be decades in the future.

[5] Pierce, Hester M., 2022, *We are not the Securities and Environment Commission – At least not yet*, https://www.sec.gov/news/statement/peirce-climate-disclosure-2022032.

corporate stakeholders such as customers and employees, to consultants, lawyers and accountants who will be required to help companies comply with the complicated new rules. For large firms, this is unlikely to have a significant percentage impact on their valuations, but for small firms it could be meaningful. Aware of this, the proposed rules do offer a safe harbor for small companies with respect to Scope 3 emissions, but even complying with Scope 1 and 2 regulations will be costly and produce an incentive for smaller firms to remain private.

Two Exceptions: Marketing and Regulation

There are two exceptions to the conclusion that variation in the value of American companies is unrelated to their emissions - marketing and regulation. With respect to marketing, understanding the process of climate change and how it relates to corporate valuation requires a significant investment in time and energy. It is far easier to assume that a company's exposure to climate is somehow related to its emissions. If consumers want to do business with "sustainable" companies, and if they use a company's emissions as a proxy for sustainability, then information about emissions will affect value. However, consumer preferences are ephemeral and difficult to predict. For instance, airlines have come in for remarkably little public criticism compared to fossil fuel producers even though per dollar of GDP generated flying is one of the greatest contributors to CO2 emissions.

There is also a marketing element with respect to investors. The growth of sustainable investment funds, most of which charge higher fees that traditional funds, are an indication of investor preferences. However, much of the enthusiasm for sustainable investments appears to be based on the perception that they will provide higher long-run

average returns. Finance theory implies that just the reverse is true - investor preferences for certain securities leads to lower average returns in the long run.[6]

Whatever the reason for it, both companies and investment manager must believe that marketing their climate plans and objectives is effective because they do a lot of it. The focus on Scope 1, 2, and 3 emissions is likely to add more fuel to the marketing fire.

There is a conceptual problem as well with the proposed disclosure rules. Economists have long stressed that that both consumers and investors should not care about company emissions per se, but how those emissions differ from the optimal amount. For instance, flying may produce a lot of emissions, but if it creates enough social value by allowing the rapid movement of people and goods, it is justified. The economic problem is that the social cost of emissions is not properly reflected in prices. That is why a vast majority of the country's leading economists issued a statement in 2019 proposing a carbon tax to reflect the externalities associated with emissions.[7] The fact that the statement fell on deaf ears and that a carbon tax continues to be a political anathema does not justify a complicated disclosure rule that has the public relations effect of penalizing firms with larger Scope 1, 2, or 3 emissions irrespective of the benefits provided by the activity that produced emissions.

Another imminent risk to companies is potential government policies enacted in response to combat climate change. Unlike climate change itself, which is slow moving and largely predictable, government policy can change abruptly and unpredictably. For

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[6] Cornell, Bradford, 2022, ESG, *Investing and Corporate Finance: Some Basic Questions*, Journal of Investment Management, forthcoming.

[7] Economists' Statement (2019) *Economists' Statement on Carbon Dividends*, 2019, https://www.wsj.com/articles/economists-statement-on-carbon-dividends-11547682910.

instance, a carbon tax could have a meaningful impact on major producers and consumers of fossil fuels. In California, revised building codes are being proposed that all but prohibit the use of natural gas for heating and cooking in new homes. That obviously will affect the value of gas utilities. Despite the importance of government regulation, it is odd for an agency of the government to require added disclosures related to emissions because a government body may decide to tax or prohibit those emissions.