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On the value, efficacy, and durability of "enhanced and standardized climate-related disclosures for investors and the banking system

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Abstract

The US Security and Exchange Commission (SEC) is working on bringing material risk from climate change into its risk reporting protocols. They are collaboration existing international efforts to do the same with the goal of promoting global economic efficiency in a changing climate. Without this international coordination, US companies will not compete well for investable funds against foreign companies who will be reporting their material financial risk and macroeconomic financial stability within clear and mutually consistent protocols. The Federal Reserve Board (FED) is meanwhile engaged in a complementary and parallel effort. They are expanding their acknowledgement of significant and material climate risk in collaboration with the central banks of the European Union and the G-20 countries. All of these countries have been working meticulously together to repurpose regulatory instruments like stress tests, risk-based capitalization standards, and integrated reporting protocols within existing and well-established mandates. These approaches can build a durable climate reporting infrastructure because both the FED and the SEC have been excused by design from direct interference from either of the politicized branches of government. The courts can rule on perceived overreaches in design, but they cannot interfere with the implementation of expansions to accepted rules once that hurdle has been crossed; and it would not "cost an arm and a leg".

Key words: climate change; material risk; climate risk; Security and Exchange Commission; Federal Reserve Board; economic efficiency in financial markets

1. Introduction

Ngaire Woods, the Dean of the Blavatnik School of Government at the University of Oxford, recently made a convincing case for government agencies around the world to "develop crisis-management mechanisms to withstand the coming shocks" to their constituents' general welfare.[1] These shocks will not necessarily be foreseen, but it is virtually certain that something serious will materialize sometime over the next few decades. She observed, with justifiable concern, that budgetarily challenged governments were pulling back from implementing programs that embody the lessons learned from COVID.

She focused her attention on her examples of as yet unimagined new pandemics, but she also mentioned climate change risks in passing. The lessons from her COVID examples from the United Kingdom apply directly in this context. She did not, however, mention mechanisms that could be built into existing programs by adding protocols to existing procedures that would ameliorate the impacts of those shocks to some degree before they happen – a durable preventative strategy that would not necessary "cost an arm and a leg".

It has long been accepted that the organized, rigorous, and consistent reporting of material risk to the operation of private (and public) enterprises to the demand sides of financial markets is a good thing. Good quality information makes markets more efficient than they would be otherwise. It would seem to follow, in an environment where new sources of material climate risk are emerging and then growing in frequency (likelihood) and intensity (consequence), that expanding the scope of established reporting protocols would also be a good idea.

Take risks born of climate change, for example. It is now unequivocally accepted that the planet is warming.[2] [3] [4] As of May of 2023, it is now also unequivocal that human activities are largely to blame.[5] Moreover, the significance of these finding are displayed by climate risks covered nearly every night on television. They are part of a pattern tells us that these climate changes are stochastically throwing increasingly dangerous and expensive climatic events at pockets of humanity located nearly everywhere in the world.[6] [7]

Climate risks are surely a good candidate for rigorous and widespread reporting to many investors who want to be fully informed about a threat that they are increasingly accepting as real. According to national survey conducted Yale Climate Communication (YCC) published in 2021, they are part of the 72% of the US population who believe that warming is happening.[8] In addition, 57% believe that human activity is largely to blame, 64% accept that it is changing the weather, and 72% think that the emissions of carbon dioxide should be regulated. In fact, the disaggregated that a majority of Americans living in nearly *every* county of the United States are confident that warming is real – see Figure 1 from the YCC.

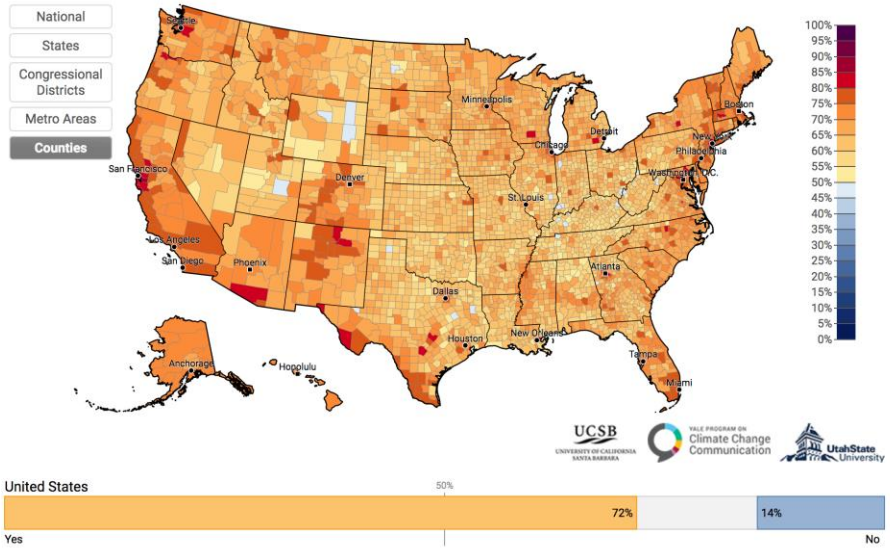

Figure 1. Percentage of Americans who believe that the planet is warming. A majority agree that the planet is warming in nearly every county of every state – from greater than 80% is counties near the two oceans plus those near the border with Mexico to a small majority in areas like most of Texas and Oklahoma.

It should be noted that efforts are underway around the world to include climate risks to the "must be reported" list for the business sector. But how can progress in that regard be possible in such a fractious geopolitical environment? Well established minorities or singly focused autocrats seem to be in control of everything important with respect to climate action; and they are entirely capable of undoing social infrastructure that has protected personal, social, and national security for 50 years. Moreover, if it were possible to include climate risks into financial reporting protocols, would it do anything to help the fight to ameliorate the pace of climate change (by mitigation) and the harm that it causes (by adaptation)?

In this short paper, I first use the clear (if not concise) language from the new rules that are coming into force within the US Security and Exchange (SEC) to anchor my answer - "stay under the radar" by exploiting well established and accepted reporting and central bank practices to tackle a new problem. Would that work? Yes, because improving the financial stability of investment markets and banking systems is in every climate savvy investor's individual best interest. I also argue here that the insights drawn from the evolving US case study are transferable around the world in large measure because the US is really trying to catch up with parallel efforts that have sprung up across the European Union and G-20 nations over the last decade. [9] The SEC program is also supported by complementary and similarly designed actions by the Federal Reserve Board.

Section 2 reports briefly on efforts that are underway in the United States before Section 3 speaks to potential benefits of those efforts. The fourth section adds an explanation point to those benefits by describing an example of an extreme "not-implausible" tipping point that we may have already crossed. Section 6 closes the paper with a caveat and some synthetic concluding remarks.

2. Recent efforts in the US.

On March 21, 2022, the U.S. Security and Exchange Commission (SEC) proposed a review version of its new "Rules to Enhance and Standardize Climate-Related Disclosures for Investors".[10] The proposed new Rules are fertile and publicly available ground from which to evaluate the merits of expanding disclosure coverage to include climate risks not only for the United States, but also for other countries who are also coming to grips with those contingencies. To be sure, the new Rules re enormously complicated, but that complication was unavoidable. Their 500 pages of text are a copious reflection the full range of issues that must be accommodated if they are to work efficiently within a dynamic and evolving international system of enhanced risk communication to those who worry about financial stability.

The SEC clearly believes that its new Rules fit well into the "three-part mission" of the Commission that were among the first words in its founding legislation – the Security Exchange Act of 1934: "(i) protect investors, (ii) maintain fair, orderly, and efficient markets, and (iii) facilitate capital formation".[11]

3. Adding material climate risk to reporting mandates should be a good idea.

It has been known since the days of Adam Smith that financial markets work best and minimize sources of capital market instability at a macro scale when they are supported with the best information about material risk of all kinds.[12] Investors can use that information to manage their assets and hedge across their portfolios in response to a new 21st century source of uncertainty. Adding climate risk to the mandated risk categories should be a game changer in many ways. Perhaps most importantly, companies who rely on those markets to underwrite their physical and infrastructure investment plans are thereby led to compete with each other for investors' commitments on the basis of additional new information about how they are managing their risk from climate impacts and their contributions to the problem.

Moreover, clear and consistent reporting protocols sustain this value of information in ways that are not possible under current voluntary reporting by many companies through a wide range of different reporting platforms. Side by side considerations of firms' exposures can be useless if they include incomparable evaluations of risk based on different criteria and different weighting structures. This is a problem within the current ad hoc US situation, and it is a problem that the new Rules are designed significantly to address.

4. The prospect of contagion from a climate risk.

It follows that accurately informed markets are among the best (but not perfect) protections from contagion that can cause macro scale economic harm a la the US mortgage crisis of 2008. The collapse of the real estate markets in the US and international brought about the great recession of 2009 and affected economic stability around the world. It was, after all, opaque bundles of real estate derivatives whose value collapsed from artificial and unsustainable highs were the root cause of that episode.[13] Forewarned by that experience, the US Federal Reserve Board (FED) wrote in Box 4 of its Nov 9, 2020 "Financial Stability Report" that:

> "Features of climate change can also increase financial system vulnerabilities…. Opacity of exposures and heterogeneous beliefs of market participants about exposures to climate risks can lead to mispricing of assets and the risk of downward price shocks. Similarly, uncertainty about the timing and intensity of severe weather events and disasters, as well as the poorly under-stood relationships between these events and economic outcomes, could lead to abrupt repricing of assets. Climate risks thus create new vulnerabilities associated with non-financial and financial leverage. In regions affected by severe events, households and businesses could become over-levered if the value of their assets or income prospects become impaired." [14]

Later in the same box, they wrote of the other extreme:

> "With perfect information, the price of real-estate-linked assets and the valuations of claims linked to such assets—held by banks, insurers, investment funds, and nonfinancial firms—would reflect these climate-related risks".

Finally, the FED made it clear that they had a specific climate-based example of a not-implausible contagion in mind – globally distributed risks from sudden large increases in global sea level rise (SLR) driven by anthropogenic emissions of greenhouse gases (GHGs) like carbon dioxide over something like 20 years – not enough time to adapt, certainly.[15]

It is not difficult to demonstrate why concern about this possible source of enormous concern for any nation with developed coastlines (see Figure 2 to view US vulnerability, for example). But how might the coastal risks born of SLR be so uncertain that financial markets would be so misinformed as to risk collapse not just in one place, but perhaps around the world? After all, the pace at which seas will rise in the future is very closely correlated with warming because thermal expansion is the major driver. It follows that contingent future SLR distributions are reasonable projectable so long as their contingent dependence on emissions futures and the behaviors of major land-based ice sheets are clearly stated.

Figure 2. US vulnerability to rising seas. Urban are most vulnerable, but the entire coastline from the Mexican border to Massachusetts shows significant risk.[16]

Figure 3 shows the scientific basis of this assertion by displaying distributions of future global sea level rise driven by anthropogenic emissions carbon dioxide under two driving socio-economic scenarios – a high mitigation policy regime (the blue 5%-95% uncertainty cones) and a high fossil fuel alternative (the red cones).[17] It also points ominously to the significance of an unknowable contingency of potentially enormous consequence by displaying dark and light likelihood cones for each emission pathway. For both the blue and red cones, in particular, the difference between the light and dark regions shows the difference in projected ranges of possible SLR futures without (dark) and with (light) the potential extra threat from the West Antarctic Ice Sheet (WAIS). Recent data has begun to suggest a growing possibility that the Thwaites glacier might collapse suddenly and swiftly into Admundsen Sea. The glacier lies squarely within the vulnerable WAIS whose "routine" contributions to SLR are captured in the darkly colored cones.

The current state of knowledge includes this troublesome new data for only a few locations West and East Antarctica. They show the presence of warming water in new and unexpected locations. They have measured jaw-dropping rapid changes in ice-ocean boundary since the 1990s in the few locations where time series are extend decades back into the last century. Thwaites is one such place where new observations have supported two troublesome findings. First, the pace at which the glacier is moving toward the sea has doubled over the past decade or so. Moreover, this acceleration may have been caused by the disintegration of mile high ice columns that have held much of the glacier in place for centuries. If that second trend continues, these obstacles to glacial migration toward the Edmundson Sea will turn into piles of ice cubes that would be incapable of maintaining the historical status quo. This is why the Thwaites glacier could fall into the sea and displace enough water to produce a foot or so of extra SLR in a matter of a few decades rather than centuries.

But when? How fast? How many other locations are experience the same fundamental transition? We don't even know whether or not we have already committed the planet so that the question really is "When?" and not "If?". But we also don't know if the glacier could actually come to a stop. The Thwaites glacier sits on a very rugged granite land surface, and there may be ridges and other structures that will bring the whole migration process to a halt.

And then, there is the "So what?" question. We know that, depending upon local topography, coastal communities around the world are already being threatened by predictably rising oceans even without this potential source of accelerated SLR. Glacier vulnerability to collapse is, though, a wild card – an irreversible tipping point whose crossing could produce tens of centimeters of additional SLR in a matter of a decade or two. The current state of knowledge includes new, worrisome data from a few locations West and East Antarctica. They show the presence of warming water in new and unexpected locations. They have measured jaw-dropping rapid changes in ice-ocean boundary since the 1990s in the few locations where time series are extend decades back into the last century. Thwaites is one such place where new observations have discovered that mile high ice columns that have long held the glacier in place have been disintegrating at an increasing rate for about a decade. If that trend continues, these obstacles to glacial migration toward the Edmundson Sea will turn into piles of ice cubes that would be incapable of maintaining the century's long status quo. The water held by the glacier could then pour into the world's oceans producing a foot or so of extra SLR *around the world* in a matter of a decade or two rather than centuries.

That would cause contagion across the real estate markets around the world where coastal property lies low to the sea level – the very possibility that the FED Stability Report put forward in 2021

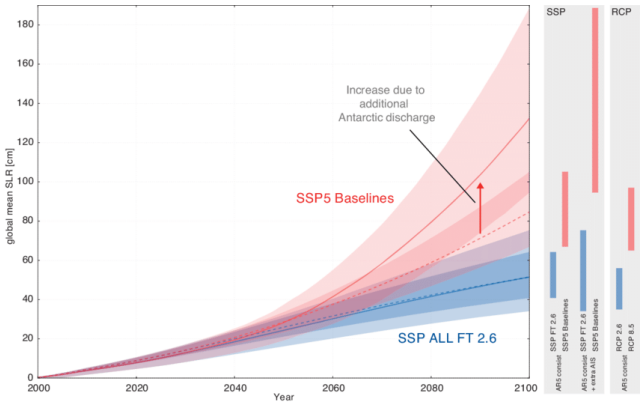

Figure 3. Projections of global sea level rise from anthropogenic climatic change. The blue distributions show the range of SLR projections through 2100 along a low emission scenario supported by significant mitigation (the SSP 2.6 pathway where net emissions peek in the 2020s and turn negative in the second half of the century).[18] The dark blue cone includes only traditionally calibrated contributions to global SLR from the WAIS; the expanded light blue cone adds contributions from collapsing ice sheets. The two red cones do the same for the high fossil fuel SSP5 baseline (rapid and unconstrained growth in economic output and energy use). [19]

The significance of new Rules can be amplified by complementary efforts to protect financial stability against climate risk by nations' central banking systems. In the US, for example, the FED and the Federal Deposit Insurance Corporation (FDIC) are working to incorporate climate risk into the standard operating and evaluation procedures.[20] Just as in the case of the SEC efforts, implementing the proposed initiatives by both the FED and the FDIC is an ongoing process. To their credit, though, their work represents concrete responses to investors' demand for "environmental, social, and governance" information. They are designed to promote financial stability, and their potential to abate greenhouse gas emissions and/or ameliorate climate damages could be a co-benefit of enormous value.

5. Enhanced climate risk reporting to financial markets *can* help abate climate change risks.

As shown in Figure 4, reporting direct and upstream emissions under Scope 1 and Scope 2 of the new Rules creates a mechanism by which investors can track the abatement actions of corporations in which they might otherwise be interested because the cost of those emissions is a business expense that will only increase over time. Notice that the figure makes it clear that the proposed Rules do not apply solely to reporting about carbon. Other heat-trapping gases like nitrous oxides, methane, chlorofluorocarbons and the like are also included because they, too, determine the pace of damaging warming. Environmentally engaged investors and management firms will use this information in making portfolio decisions, so companies should become aware of the opportunity to compete with one another over their mitigation plans and actions – at least one reason why the proposed Rule is good climate policy specifically and good environmental policy more generally.

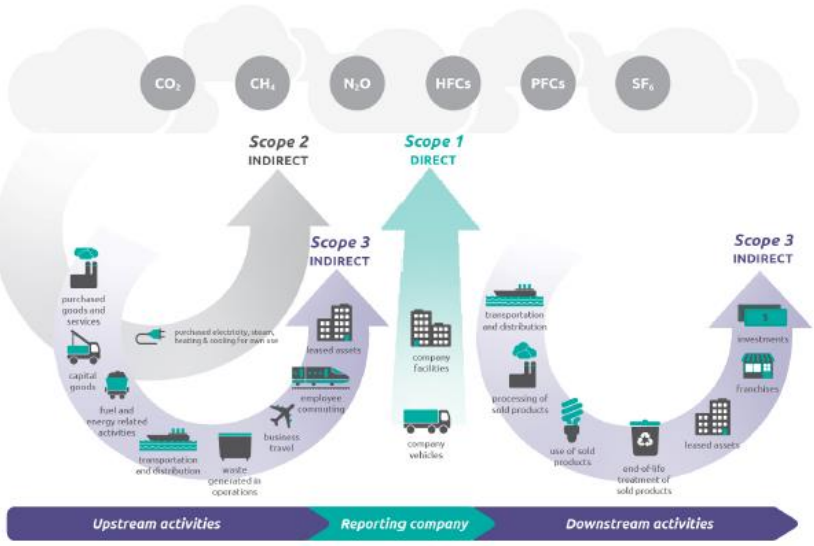

Figure 4. A schematic of the proposed new reporting structure.[21] The proposed new rules divide the span of risk reporting into three parts. The first (named Scope 1) focuses attention on companies' reporting of their direct emissions of greenhouse gases. The second (Scope 2) looks back up the companies' supply chains to report indirect emissions. The final (Scope 3) asks companies to look downstream to report demand side activities in across various potential organizing schemes for the future energy sector.

Perhaps more obviously, the entire coverage of Figure 3 highlights a widespread vulnerability to specific climate risks up and down the entirety of any business plan. This points for the need for companies to adapt to those risks (at home, at various points along their supply chains (helping others), and at various points on the demand side of their markets (beware of income effects). This simple observation uncovers another opportunity for inter-firm competition on resilience to climate risk, and enhanced reporting per all three scopes can only make that competition more efficient. As well, similar reporting is expected with respect to a second source of climate-related material risk – the relative strengths and efficacies of various types of imposed climate policies, themselves.

6. Controversies, Caveats and Concerns.

To that last point, Scope 3 requirements on emissions upstream (suppliers and distributors) and downstream (distributors, clients, and customers) along any company's value chain of would reveal sources of transitional risk as the economy moves from reliance on fossil fuels to increasingly widespread penetrations of renewable energy. They are controversial because the sources of transitional risk are indirect and because they are generally beyond the scope of any company's control. Still, enhanced reporting to investors in this adds texture to their better informed perspectives of the longer term business environments within which they review companies' prospective long term investment proposals. It is not like companies can control everything else that might affect their bottom lines.

Implementation of the new SEC Rules allows the US join existing international efforts and thereby global economic efficiency. Without this international coordination, US companies will not compete well for investable funds with foreign companies who will be reporting their material financial risk and macroeconomic financial stability within clear and mutually consistent protocols. The good news is that SEC and the FED are expanding their acknowledgement of significant and material climate risk in collaboration with the central banks of the European Union and the G-20 countries. All of these countries have been working meticulously together to repurpose regulatory instruments like stress tests, risk-based capitalization standards, and integrated reporting protocols within existing and well-established mandates. This approach is particularly important for the US if it wants to build a durable climate reporting infrastructure because both the FED and the SEC have been excused by their founding charters from direct interference from either of the politicized branches of government (the executive and the legislative branches). The courts can rule on perceived overreaches in the new designs, but they cannot interfere with the implementation of accepted rules once that hurdle has been crossed.

Forward looking components of proposed new Rules will require that companies have access to internally consistent and comparable climate change scenarios. That fact needs to be addressed, but not just for risk reporting. Asemphasized in October of 2021, this need has already been flagged by the Financial Stability Oversight Council (FSOC) with regard to including climate-based risk into the scenarios that frame the stress tests that FED conducts annually on large financial institutions.[22]

In sum, the proposed new Rules are good climate policy as well as good economic policy, but it is important to avoid overstating their virtues while still describing their advantages. On the one hand, it would perhaps have been better if the FED had written:

> "With ***vastly improved*** information ***about climate risk***, the price of real-estate-linked assets and the valuations of claims linked to such assets—held by banks, insurers, investment funds, and nonfinancial firms—would ***more accurately*** reflect these climate-related risks". (my emphasis)

On the other hand, in comparison to Executive Orders or even legislation, rules that govern the reporting practices of institutions like the US SEC are somewhat insulated from political shenanigans. As noted above, the FED, the SEC and even the FDIC are independent by design from direct executive and legislative intervention (though they must report their actions to both branches and absorb criticism from all comers). Meanwhile, the judicial due process protects the actions of both the SEC and the FED against charges of overreach as long as they operate within *already approved and enshrined processes and procedures*.

Therein lies the rub, but at least programs that tinker with existing practices will not "cost an arm and a leg".

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