



# Financial Markets and Regulators Are Still in the Dark on Climate Change

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The novel coronavirus crisis has destabilized financial markets and has placed increasingly severe stress on financial institutions. Short-term funding markets seized up as creditors ran from the shadow banking system, and banks and other lenders are beginning to feel stress as businesses and households face difficulties meeting their financial obligations. The Federal Reserve System, buttressed by the extraordinary deployment of Treasury funds, has taken unprecedented steps to backstop large segments of the financial system, lest financial instability further exacerbate the pandemic's immense economic fallout.

Even as the financial system wrestles with the current pandemic, another crisis is approaching faster than many care to admit: Climate change is upon us, and the financial system is exposed.<sup>1</sup> Unlike past crises, climate change represents a unique blend of an external shock—likely successive shocks—and an endogenous crisis to which the financial system is contributing. Moreover, like the coronavirus pandemic, the crises that climate change is expected to cause are foreseeable, even as the specific effects of climate change are only starting to be felt.

With a large degree of unpredictable tail risk, climate change represents a challenge to virtually every aspect of the economy and requires preparation in order to avoid the worst outcome. The recurring physical damage and energy market transformations resulting from it are likely to affect banks, insurers, and investors and may well create cascading risks across the financial system. Communities of color are likely to be especially hard hit, as they were in 2008 with the recession and currently from COVID-19.<sup>2</sup>

By financing carbon emissions, the financial system is essentially digging its own grave, given the potential concentration of emissions—and hence risk—in bank, insurance, and investor portfolios. Yet even the most basic building blocks of transparency needed to assess the interactions between climate change and the financial system are lacking. Despite decades of investor-driven efforts aimed at enhancing climate-related transparency, both regulators and market participants are still flying almost entirely blind.<sup>3</sup>

Take, for example, the financial sector's financing of carbon emissions. A window into even just one slice of that financing, cobbled together by privately aggregated deal documents, shows that since 2016 alone, 37 global banks have invested more than \$2.7 trillion into the fossil fuel sector, and bank financing of fossil fuels has been increasing.<sup>4</sup> Financing of greenhouse gas emissions extends far beyond these direct investments.

It is beyond time that financial regulators establish the building blocks for effective climate action. Only by being able to effectively measure and mitigate climate risk in the financial system can policymakers address the coming negative impacts on the financial system and harms to jobs, household wealth, and public trust. Regulators must act now to mandate that financial institutions, insurers, and asset managers measure, disclose, and secure third-party certification of disclosures, a form of auditing known as assurance, on climate-related risks and harms. As a starting point, the emissions that the financial system is financing should be publicly disclosed in standardized, comparable, and accountable form—in public company filings that are certified by third-party auditors and accountable to investors for fraud.

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### It is clearer than ever that the financial system will be hit by climate change

Like a pandemic, climate risk is an expected unexpected event. Climate risk can be known to impose costs, but measuring and predicting them requires probabilistic assumptions, with significant tail risks. Climate risk is currently estimated to pose costs in the tens of trillions of dollars worldwide,<sup>5</sup> although even this may underestimate the scope. While the current pandemic was foreseeable, the unexpected systemic risk arising from the coronavirus economic collapse is a useful baseline for comparison. Here, costs already top \$9 trillion dollars globally<sup>6</sup> and may exceed several tens of trillions of dollars—surpassing any earlier estimates of the economic fallout caused by a pandemic.<sup>7</sup> Like a pandemic, climate change could cause a substantial external shock that acts on financial assets in a correlated manner—that is, driving losses simultaneously across a range of financial markets that usually do not behave the same way.<sup>8</sup> And worse than a pandemic, climate change will likely cause successively greater external shocks and may result in irreversible damage to the planet and both natural and human productive capacity.

Climate risks can be broken into two broad categories: physical risks and transition risks.

Physical risks exist when financial system assets and income are undermined by physical damage to property, economic productivity, and household wealth caused by an increase in frequency and severity of catastrophic weather events and long-term environmental changes.<sup>9</sup> Mortgage loans, commercial real estate assets, agricultural lending, derivatives portfolios, and other assets are all at risk of declining in value, in some cases significantly.

Economically vulnerable communities—often communities of color—are particularly threatened with repeated physical devastation. In hard-hit communities, climate change is expected to undermine economic output, reduce already limited household income and wealth, and diminish access to capital as a result.<sup>10</sup>

The pandemic has laid bare the lack of financial security across households and small businesses—a challenge that could be even greater in a climate event in which physical property is destroyed along with the interruption in commerce. Banks, in turn, could see increasing default rates and new lending business negatively affected as well. Meanwhile, investment and pension funds could experience catastrophic asset valuation losses affecting the financial security of millions of current and future retirees.<sup>11</sup> Insurers, too, could face severe losses and have trouble underwriting in certain areas.<sup>12</sup>

Nor will problems be contained in the places most physically affected, as losses at one institution could ricochet across the financial system and back into the real economy. This, in turn, could negatively affect federal and state budgets, and where government insurance or guarantees kick in, this could require massive bailouts.<sup>13</sup> Moreover, if a large, complex, and interconnected financial institution such as a Wall Street bank or global insurance company experienced severe distress as a result of the losses caused by a physical climate shock, it could destabilize others in the financial system—a phenomenon that was a defining feature of the 2008 financial crisis.<sup>14</sup> Correlated stress among smaller firms could have the same result. Climate change might also drive new forms of risk transfer or credit freeze-up. For example, if property and casualty insurers were unable to reasonably price insurance risk in certain regions, lending could dry up as banks may be unwilling to take on additional risk, which in turn limits lending and other economic activity.<sup>15</sup>

A second category of climate risks is transition risks. The world will transition away from fossil fuels as environmental policies change, low-carbon technologies become less expensive, and consumers seek low-carbon choices. This transition is already occurring, as the fossil fuel industry has been in financial trouble for years,<sup>16</sup> but it will only accelerate as technological developments make that shift even more financially attractive and policymakers take much-needed steps to green the economy. Indeed, a new generation of active millennial and long-term investors are driving an even harder push away from carbon-intensive assets, both for financial risk management and for environmental purposes. In May, investors secured 48 percent support for a shareholder proposal calling for one of the leading U.S. banks to fully disclose its financing of fossil fuel and align lending with the Paris accord climate commitments. Although this did not secure passage of the proposal, the high level of support reflects significant momentum on the issue.<sup>17</sup>

Financial institutions, insurers, and asset managers that erroneously assume that the global economy will continue to depend on fossil fuels could face swift and severe losses on equities, bonds, and other instruments that are stranded or otherwise sensitive to the price of carbon. One estimate puts the present value of these transition-risk-related losses at \$20 trillion—roughly the size of the entire U.S. economy's annual output.<sup>18</sup>

Referring to the well-known economist who highlighted the boom and bust cycle of modern finance, former Governor of the Bank of England Mark Carney has aptly termed this scenario a “climate Minsky moment,” since rapid asset-price declines would be triggered by the effective bursting of the carbon bubble.<sup>19</sup> With their activities and relationships focused on the fossil fuel past, these financial firms may be hard pressed to recover going forward.<sup>20</sup>

While climate change’s precise economic impacts are difficult to predict, the losses stemming from physical and transition risks could materialize quickly, and the potential magnitude of those losses is staggering. The financial losses and ensuing economic turmoil triggered by a climate shock could far surpass that of the 2007-2008 financial crisis and have a far more lasting impact than the financial sector damage being inflicted by the current pandemic.<sup>21</sup> Moreover, delaying action will make the risks to the financial system worse: More carbon will be financed in the atmosphere; change will be harder as carbon investments are more financially and politically entrenched; and the necessary transition will have to be costlier and more abrupt.

Additionally, the risks to individual institutions and the financial system as a whole may be even greater than what economists appreciate today. Increasingly strong and detailed scientific analyses of climate impacts on regions across the globe are coming to the fore but are only beginning to inform economic analysis. Uncertainty about where, when, and with how much severity specific climate impacts will occur, together with the ability of financial institutions and other businesses to shift environmental costs onto society, means that financial analysis will likely continue to assign an inappropriately low cost—or no cost at all—to climate risks.<sup>22</sup> This dilemma, well appreciated in environmental economics, has traditionally been painted as a classic story of environmental externalities: costs of production and consumption that affect society at large but are not priced into the cost of goods and services between private actors in the marketplace.

But watching that story play out and hoping for the best is no longer acceptable, since it is clear that progress on incorporating climate risks into financial analysis is slow and may never fully materialize. As a result of recent financial crises where economists and regulators got it spectacularly wrong—and with appreciation for the special risks to human life and the planet at play in the climate crisis—a growing body of investors, researchers, and, increasingly, regulators recognize that serious social costs of climate change are more imminent than previously thought and will unavoidably affect the economy that undergirds the financial sector and hence the financial sector itself.<sup>23</sup>

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## The U.S. financial system is blindly digging itself into a hole

Despite these emerging impacts of climate change, the large banks continue to actively fuel the risk of climate change itself. Based on the best available estimates, 37 banks extended nearly \$2.7 trillion in direct fossil fuel financing since 2016.<sup>24</sup> Large insurers and asset managers continue to increase financing to carbon-intensive industries as

well.<sup>25</sup> Banks and insurers also regularly transfer their risk to others in the financial system via derivatives, securitization, and other complex financial instruments, meaning that financial sector financing and financial support for carbon emissions is undoubtedly far greater, especially since in a crisis, that risk transfer may not stick.

Banks, insurance companies, and asset managers are entirely unprepared to safely handle climate-related losses. U.S. financial regulators do not conduct stress tests or incorporate climate risks into their supervision, capital, or other prudential frameworks.<sup>26</sup> Nor, despite years of efforts, do investors have sufficient material, comparable, and accountable visibility into the individual risks that firms face or the macroprudential risks across the system. The latter is particularly important; risks may not remain contained at any one institution, fund, or market. Investors today are increasingly broadly diversified owners, meaning they cannot diversify away from correlated risks across the system and the economy.<sup>27</sup> Swaps and securitizations markets are notoriously opaque, and data standardization and transparency have taken years to implement even without considering climate financial risks.<sup>28</sup>

The parallel to the 2008 financial crisis is deeply troubling, even while the potential impact of climate risk is a greater order of magnitude. In the years and months leading up to the 2008 crisis, regulators, investors, and management had no grasp of the scope and implications of toxic, trick-and-trap mortgage assets nor of the proprietary positions that banks were taking relating to them until it was too late.<sup>29</sup>

While it may be difficult to measure the risks relating to many types of external shocks, such as a pandemic or cybersecurity attack, the carbon emissions financed by the financial sector are far more measurable and can demonstrate the level of risk a financial firm's activities are placing on the broader financial system. For example, Dutch banks and regulators are leading a long-overdue global initiative—the Partnership for Carbon Accounting Financials (PCAF)—to measure these risks. The PCAF now counts as members more than 60 banks, insurance companies, and investors representing \$4.5 trillion in assets.<sup>30</sup>

For years, investors and a range of corporate stakeholders have pressed the Securities and Exchange Commission (SEC) to mandate greater disclosure, yet the measurement and disclosure of climate risks and impacts remain wholly insufficient. Progress seemed possible in 2010 with the SEC guidance regarding climate, but the weakness of the mandate and insufficiency of SEC follow-up, including its lack of enforcement, has rendered it a largely symbolic document.<sup>31</sup> In fact, the SEC Investor Advisory Committee recently recommended that the commission “begin in earnest an effort to update the reporting requirements of Issuers to include material, decision-useful, ESG factors”—a sharp rebuke of the SEC's lack of progress on this high-priority issue for investors and the public.<sup>32</sup>

In the absence of SEC leadership, a range of international bodies and private standard-setters have stepped into the void to offer management guidance and advocate

for climate and broader environmental, social, and governance (ESG) disclosures. These include the Global Reporting Initiative, the Carbon Disclosure Project, the Sustainable Accounting Standards Board, and the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD), among others. Investors have pressed companies to follow these guidelines, but complete adoption, comparability, and assurance remain lacking.<sup>33</sup> These problems may improve as these standard-setters work to align their approaches and given the work that the PCAF and others are doing to develop sufficiently robust methodologies for measurement and reporting of emissions financed by the financial sector.<sup>34</sup>

While these standards should be seen as building blocks that work together and represent investor and stakeholder demands for greater action, private efforts still face the intractable problem that they lack the authority to enforce collective action. As with accounting standards, the SEC has a critical role to play in securing procedural protections and baseline levels of transparency.<sup>35</sup> The Trump administration's SEC has, unsurprisingly, been unfavorable toward the shareholder efforts to advance a climate shareholder agenda.<sup>36</sup>

More broadly, current SEC leadership is hell-bent on going in the wrong direction on disclosure and accountability generally. The commission is loosening disclosure standards for public companies, opening up more ways for companies to avoid going public at all, and attacking accountability tools, such as shareholder proposals and the independence of proxy advisers.<sup>37</sup> This is occurring largely at the behest of the corporate and financial industry lobby, despite industry leaders' protestations to now be committed to stakeholder capitalism.

In part owing to its sustained commitment to meeting Paris accord climate goals, Europe has done modestly better in taking action. A Europewide nonfinancial disclosure mandate on all large public companies has been in place since 2014, requiring publication of company policies on environmental protection as well as other social accountability goals.<sup>38</sup> The European Commission is taking that to the next step, seeking comment on ways to enhance the scope and comparability of disclosure, and is now seeking comment on its Sustainable Finance Action Plan, which includes a range of financial regulatory, public finance, and other proposals designed to move finance in a more sustainable direction.<sup>39</sup> While it will be essential to monitor whether Europe sustains sufficient focus on the financial sector's role in financing carbon emissions, clearly the United States is behind its European competitors in developing an economywide approach to climate risk.

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## Regulators must require measurement, disclosure, and mitigation of climate-related risks

Regulators can and should take many powerful actions under existing authority. But if past is prologue, Congress would be wise to seize the present moment to force unwilling

regulators to act now—before it is too late.<sup>40</sup> Investors, stakeholders, and the organizations that represent them are beginning to signal what actions regulators should take. Last month, for example, Ceres, a nonprofit organization that works with investors and companies to create sustainability in the economy, published a comprehensive white paper on climate-focused financial regulation covering a multitude of potential policies, including the mandatory disclosure of emissions financed by the financial sector.<sup>41</sup>

Regulators, investors, and the public need clear, comparable, and reliable data to better understand companies' climate risk exposure and their direct and indirect—or upstream and downstream in the value chain—contributions to climate change. Such information is critical to effective business, financial, and regulatory decisions.<sup>42</sup> As such, the SEC should mandate that public corporations, funds, and other entities under its jurisdiction annually disclose, in their regular filings with the commission, extensive information on their exposure to climate risk, including their level of direct and indirect greenhouse gas emissions. In particular, the SEC must mandate that banks, insurers, and asset managers annually disclose the emissions associated with the assets they have financed or managed that year, commonly referred to as Scope 3 emissions—those up or down the value chain of the disclosing company.

Although the materiality debate of late often obscures—and delays—more than it enlightens, the importance of this information to investors is clear.<sup>43</sup> A wide range of quantitative and qualitative data, such as those set forth by the TCFD, are necessary to help investors evaluate climate-related risks that any individual bank, insurer, or fund may face. But financed emissions disclosure by financial firms is particularly essential to enable investors—and regulators—to evaluate the extent of these firms' contributions to climate change risk across the system. This can help investors understand the transition risks that individual firms may face and understand whether firms' actions are aligned with their Paris accord climate commitments. It may also represent an objective proxy for climate risk overall—particularly because financed emissions are a clear quantitative metric that should be less subject to gaming than scenario analyses and stress tests, which depend upon multiple complicated assumptions. Relying on complicated modeling—especially internal modeling—to evaluate bank risks has a poor track record compared with simple metrics such as the leverage ratio.<sup>44</sup>

To make financed emissions disclosure transparent and enforceable across the financial sector, the SEC, or an appropriate set of experts consulting with the SEC, must also craft disclosure metrics and quantitative methodologies for emission disclosure. In establishing these methodologies, the SEC should look to standards that follow transparent, consistent accounting rules that have strong procedural independence protections. The head of the secretariat for the Network for Greening the Financial System (NGFS)—the global network of central banks committed to addressing climate's risks to the financial system—has particularly praised the PCAF for its efforts to standardize the measurement of greenhouse gas emissions of loans and investments.<sup>45</sup> The SEC also would need to consult independent climate science experts in crafting disclosure metrics and quantitative methodologies.

Other financial regulatory agencies can help, too. The Federal Reserve Board can and should deploy its own public disclosure authorities to improve market discipline around bank-financed greenhouse gas emissions.<sup>46</sup> These disclosures also differ in focus and may be less subject to the unhelpful confusion that has emerged around the materiality standard at the SEC.

The Federal Reserve should also measure and disclose the greenhouse gas emissions that it is financing through its emergency lending portfolio in response to the coronavirus economic crisis. This is particularly important given its controversial decision at the end of April to expand emergency lending in ways that will directly aid the fossil fuel industry<sup>47</sup>—a move that distorts energy and credit markets and undermines the resiliency of any recovery.<sup>48</sup> The NGFS has called on central banks to incorporate a climate risk perspective into its own balance sheet decision-making so as not to contribute to problems it has a responsibility to solve.<sup>49</sup>

Similarly, the Commodity Futures Trading Commission (CFTC) also has a role to play by ensuring that derivatives markets incorporate climate risk and provide transparency to market participants. The CFTC’s Market Risk Advisory Committee’s Climate-Related Market Risk Subcommittee, which is likely to cover matters across the financial regulatory agencies, is expected to produce a report in July that will address the financial risk of climate change—an initiative that has received bipartisan support.<sup>50</sup>

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## Conclusion

The financial stress brought on by the COVID-19 pandemic provides a chilling glimpse into what awaits the U.S. financial system and broader economy under a climate shock. Given the opacity of the system with respect to climate, federal regulators must take swift and aggressive steps to measure and mitigate climate-related risks and impacts. The disclosure of emissions financed by the financial sector is a critical first step. Without that information, investors, regulators, and ultimately, consumers and businesses will be unable to drive the market and regulatory changes needed to mitigate the economic harms inflicted by the impact of climate change on the financial system and the broader economy. The younger generation is depending on today’s leaders to take these actions now.

The climate crisis is here, and the financial system is exposed. There is no excuse for keeping financial markets and regulators in the dark.

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## Endnotes

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