



The Struggle Against Climate Change: U.S. Bank Promises Kept and Unkept
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ABSTRACT

To avoid irreversible climate change, global greenhouse gas (GHG) emissions must decline of 45% by 2030, and reach net zero emissions by 2050. As facilitators of capital, banks are crucial as leaders for the transition away from fossil fuels to reach net zero. This role is included in pledges for the UN-convened Net-Zero Banking Alliance (NZBA) founded in April 2021. NZBA members pledge to halve their total operational and loan and investment portfolio GHG emissions by 2030, and get to net zero by 2050. Central Banks are also often asked to play a role in incentivizing banks to disclose and reduce their climate change risks. With culture wars, in the U.S., large banks and the Fed are facing criticism, and challenging times. This article examines criticism and challenges that they face, and proposals to enable banks to move towards decarbonization.

Keywords: Climate Change, Carbon Emissions, Sustainable Finance, Banks, Central Banks, Green Swan Events, Global Warming, Sustainability

1. Introduction

“The financial system can be one of two things, a driver of sustainable growth, or a driver of climate chaos.”

--Quote from Peter Gill Case, co-founder of BankFWD (McKibben, 2022)

For the struggle against rising global temperatures, financial institutions are transforming into green lenders, with bank leadership essential for the transition away from fossil fuels to renewable forms of energy to achieve net zero emissions by 2050. This urgency increases as the world gets closer to its average temperature rising above 1.5 degrees Celsius relative to pre-industrial levels, associated with irreversible climate change. As former Vice President Al Gore stated, prior to the UN Glasgow Climate Conference of the Parties to the United Nations Climate Convention (COP26) in November 2021, the world can no longer afford the previous large-scale backing of carbon-intensive projects by the finance industry. He explains that for this to change, an overhaul the U.S. banking, asset management, and accounting industries is necessary, including regulations and disclosure requirements for how institutions are dealing with climate change risk (Agnew, Mooney, and Jenkins, 2021; UN 2022a).

By 2020, following a record number of billion-dollar U.S. climate-change related disasters, Wall Street has recognized that managing climate change risk is a mainstream managerial concern for corporations. At the Davos Economic Conference in 2020, a coalition of financial institutions representing \$4.3 trillion in assets pledged to take steps to minimize carbon-heavy investments in its portfolios. Also, over 800 cities, 100 regions, and 1,500 companies (representing \$11.4 trillion in revenues), responsible for 3.5 gigatonnes in greenhouse gas (GHG) emissions have pledged to decarbonize by 2050. Other partnerships for Climate Action including Climate Action 100+, The Investor Agenda, the Paris Aligned Investment Initiative, and America Is All In, have been active as advocates for GHG emission reductions. Ceres and As You Sow engage as facilitators for climate-change shareholder resolutions by U.S. environmental activist shareholders (Rushe 2021; MacKenzie 2020).

In April 2021, the UN Glasgow Financial Alliance for Net Zero (GFANZ) was created including the UN-convened Net-Zero Banking Alliance (NZBA), with pledges made by large financial institution members to reduce their total loan and investment portfolio carbon emissions to halve these by 2030, and reach net zero emissions by 2050, and to engage in greater financing for alternative energy and other green projects (Gelles and Sengupta, 2020; EnviroLab 2020; GFANZ 2021; Thorbecke, 2021).

U.S. financial institutions face particular challenges in developing and meeting targets total portfolio carbon emission reductions. This includes criticism for continuing to underwrite fossil fuel debt and equity issues, and retribution from legislators in fossil fuel states for setting net zero carbon emission targets. The Institutional Shareholder Research Services examined S&P 500 firms in 2020, finding just over one-third of corporations to have ambitious carbon reduction emission targets, and 215 firms not setting any emission reduction targets. S&P Global criticized large U.S. banks for ignoring their fossil fuel financing in their pledges to reduce their lending GHG emissions for the customers that they financed (Eavis and Krauss 2021; Rushe, 2021; MacKenzie, 2020; S&P Global, 2021).

Many policymakers recommend that Central Banks use bank supervisory tools to get financial institutions to address loan and investment portfolio climate-related risks. Roadblocks for large U.S. banks in meeting net zero GHG emission pledges include political culture wars, push back from legislators from fossil fuel states, and conflicting concerns for energy security associated with the Ukraine War, and critics arguing that climate-risk management is outside the Federal Reserve's domain (Rushe, 2021; Regenerative Crisis Response Committee, 2021;

Skinner 2021).

This article examines pledges made by large U.S. Banks for net zero emissions and criticisms they face, as well as Central Bank challenges, as climate leaders, and momentum for climate risk disclosure, including the proposed U.S. SEC Climate Change Disclosure Rules. Section 2 provides information on GFANZ, focusing particularly on the NZBA, and criticism U.S. banks face in terms of a lack of progress in meeting their pledges for a transition away from fossil fuels. Section 3 discusses the role of Central Banks in incentivizing progress for banks in reducing their climate risk. Section 4 presents an overview of the proposed SEC proposed rules for climate risk disclosure. Section 5 summarizes retribution by legislatures in fossil fuel states for banks with net zero emission targets, along with attacks on the ESG investing industry, followed in Section 6 by a summary and conclusion.

2. Challenges and Pledges Made by Large Banks to Meet Net Zero Emissions

To meet pledges made at the UN Paris Climate Agreement and UN Glasgow COP26 to achieve net zero emissions by 2050, large banks have been asked to play a major leadership role in reducing global GHG emissions. This role is necessary given the urgency to reduce annual global GHG emission by 51 billion GHG tonnes of emissions annually (40% more than annual emissions in 1990), and the significant need to finance new technological developments necessary to remove an additional 13 billion GHG tonnes of emissions for sectors with no low carbon alternatives (Le Quere, et. al. 2021; Ritchie, Roser, and Rosado, 2020).

To provide a cohesive framework for the transition away from fossil fuel financing, Mark Carney, the UN Special Envoy for Climate Action, and Finance, assembled the Glasgow Financial Alliance for Net Zero (GFANZ) in April 2021, convening at the UN Glasgow COP26 in November 2021. GFANZ's mission is to provide capital for decarbonization for emerging and developing economies, and to promote policies and regulations to accelerate the transition to a net-zero emissions economy by 2050. GFANZ now includes over 450 global financial services firms as members (\$130 trillion, 40 percent of the world's financial assets) divided into three separate financial industry sector alliances:

- (1) the Net-Zero Banking Alliance (NZBA) with 114 bank members representing \$68 trillion in assets (38% of Global Banking Assets);
- (2) the Net-Zero Asset Managers Initiative (NZAM), with 273 signatories with \$61.3 trillion in assets under management; and
- (3) the Net-Zero Asset Owner Alliance (NZAOA) with 73 asset owners in 17 countries with \$10.6 trillion in assets.

NZBA is particularly important, since it includes major global banks that have a significant leadership role in reducing GHG emissions, and includes requirements for large banks to educate and assist their clients in reducing their carbon emissions, discussed in the following section (GFANZ 2021; Reuters, 2021; NZBA 2022).

2.1 Pledges Made by Large Banks Under the NZBA

Member banks in the Net Zero Banking Alliance (NZBA) pledge to align their total operational, investment, and loan portfolios GHG emissions to net zero emissions by 2050, with a unifying framework provided to support this low carbon transition. Many of the banks joining the NZBA are also members of the UN Principles for Responsible Banking, the Collective Commitment to Climate Action, and the Prince of Wales's Sustainable Taskforce (NZBA 2022; UN 2022b).

As of July 2022, the NZBA includes 114 bank members from 41 different countries, with \$68 trillion in total assets, representing 38 percent of global banking assets. For the U.S., there

are eight banks listed as members of NZBA including Amalgamated Bank, Bank of America, Blue Ridge Bank, Citi, Climate First Bank, JP Morgan Chase, Morgan Stanley, The Goldman Sachs Group, and Wells Fargo & Co. At COP26, U.S. Treasury Secretary Janet Yellen met with U.S. bankers seeking voluntary commitments and credible plans for achieving net zero emissions as well (King, 2021; Hall, Vanderlip, Lippard, and Peloso, 2022; NZBA 2022).

NZBA members pledge to commit to halting deforestation and phasing down all unabated fossil fuels. Each member bank is required to report its progress and transition plans to meet its emission reduction pledges for each year 1, 2, and 3. Banks commit to halving their total GHG emissions (including their loan, investment, underwriting, and insurance portfolios) by 2030 and reach net zero emissions by 2050. Member banks joining the Alliance in April 2002 must set up a reporting process and intermediate targets for 2030 by October 2022, with targets that are:

- (1) Robust and identify carbon reductions across priority economic sectors;
- (2) Ambitious and aligned with the UN Paris Agreement's target of keeping global temperatures below 1.5 degree centigrade;
- (3) Science-based following a pathway that allows for no overshoot of the 1.5-degree centigrade ambition, as defined by the best-available science-based climate scenarios.

Targets must adhere credible science-based pathways and climate scenarios, such as the IPCC P1/P2 (Intergovernmental Panel on Climate Change Pathways) and IEA NZE 2050 (International Energy Agency Net Zero Emission by 2050 Scenario) (UN 2022b).

Banks in later steps engage in aligning leadership and lines of business, setting up data collection and reporting processes, training for different reporting standards, engaging board members and shareholders, managing an evolving regulatory landscape, and proactively working with their clients to reduce their carbon emissions and support innovation. In addition to concrete target metrics to aim for, member banks must supplement their portfolio targets with sector targets, and ideally set up policies to support the transition of their clients (Harvey 2022; NZBA 2022; UN 2022b; UNEP, 2021).

As expressed in a UN report (2022b), celebrating the first-year anniversary of NZBA, membership signals a larger shift in perspective for banks to include their clients, employees, policymakers, regulators, and other stakeholders. To achieve portfolio emission reductions, banks must engage with their clients to “educate, share priorities, and encourage transition,” including a variety of types of client support for their transitions, such as providing new products and services, supporting innovation and deployment of viable technologies, providing a material climate risk assessment, as well as financing and helping clients to scale up “credible, safe, and high-quality climate solutions,” compatible with other Sustainable Development Goals.

Given the current dependency of economies on fossil fuels, the Alliance does not require immediate divestment from fossil fuels. It encourages banks instead to engage with their fossil fuel company clients to accelerate their transitions, such as diversifying into non-carbon types of energy for sustainable value creation. This involves making new partnerships and providing larger amounts of financing for low-carbon technologies to allow for solution accessibility at scale. Banks are also asked to urge governments to take a leadership role including sponsoring climate action legislation, and enacting new policies to achieve the UN net zero emission transition goal by 2050 (UN 2022b).

Many large banks in NZBA have previously been active in sustainability. For instance, Goldman Sachs made a commitment to sustainable finance as early as 2005, announcing that it

would become carbon neutral by 2020, achieving this goal in 2015, and in 2019, and making a \$750 billion commitment towards sustainable financing, advisory and investing activity over the next decade (<https://www.unepfi.org/member/the-goldman-sachs-group-inc/>) (NZBA, 2022).

2.2 Criticisms by Environmental Groups for Loopholes for Climate Pledges

Despite new pledges to reduce loan portfolio emissions, large U.S. banks have been criticized for continuing to finance fossil fuel projects off-balance sheet. As reported by S&P Global (2021) NZBA guidelines are mandatory for reducing total emissions for loans and investments on bank balance sheets, but there is no mandate for off-balance sheet underwriting of fossil fuel bond and equity issuances. ShareAction points out that only Barclays PLC and JPMorgan, among the world's largest banks, have set interim sector targets that include their underwriting activities (S&P Global, 2021). Large U.S. banks did make progress in lowering their oil and gas financing to green energy financing ratio, with the average ratio of oil and gas to green debt underwriting falling from 4.0 in 2018 to 1.0 in 2021, and to 0.90 in the first quarter of 2022. J.P. Morgan Chase's ratio fell from 10 in 2018 to 1.2 for 2021. Citigroup's ratio, however, rose from about 1.0 in 2021 to 1.40 in the first quarter of 2022; and Wells Fargo's ratio rose to 6.7, compared to 6.3 in 2021 (Ramkumar, 2022).

Environmental activists estimate a ten-times rise needed in total green bonds and loans issued for a green energy transition, and express concern about the slower pace of clean energy financing by banks in recent years. They also criticize the use of carbon intensity ratios (i.e., carbon emissions as a percentage of revenues or another performance measure) for reporting progress in reducing carbon emissions. Carbon intensity measures can be deceptive showing progress if revenues rise, despite a rise in absolute total carbon emissions (Ramkumar 2022).

A joint publication by the Rainforest Action Network, Sierra Club, Bank Track, Oil Change International, Honor Earth, and the Indigenous Environmental Network, "*Banking on Climate Chaos: Fossil Fuel Finance Report 2021*" finds that in the six years after the passage of the UN Paris Climate Accord in December 2015, fossil fuel financing from the world's 60 largest banks reached \$4.6 trillion, including \$742 billion in 2021. The study finds over this period that large U.S. banks, including JP Morgan Chase, Citigroup, Bank of America, and Wells Fargo, dominated as leaders for total fossil fuel lending and underwriting debt and equity issuance, disbursing over one trillion dollars to the fossil fuel industry that included funds to develop pipelines and drill in the Arctic (S&P Global 2021; Hay 2021; Rainforest Action Network, 2021).

The Center for American Progress (CAP) and the Sierra Club's study, "*Wall Street's Carbon Bubble: The Global Emissions of the U.S. Financial Sector*," examines carbon emissions in 2020 based on year-end balance sheets, for the eight of the U.S. largest banks, and ten of the largest asset managers, and assess a \$5.3 trillion credit exposure on the banks' balance sheets. In total, an estimated 668 million metric tons of CO₂ equivalent (tCO₂e) was financed by these banks. The utilities, energy, and materials sectors contributed the most to overall aggregated emissions, representing an estimated 37 percent of total financed emissions. U.S. Asset managers financed an estimated 1.3 billion tCO₂e with over \$27.3 trillion assets under management (AUM), greater than that financed the year of the UN Paris Accord. The report notes that combined financing equivalent of up to 1.968 billion tCO₂e for the banks and asset managers makes the U.S. Financial sector the 5th largest emitter of CO₂ in the world, ranking just below Russia if it were a country (Cushing, Solomon, and Vinelli, 2021; CAP 2021).

McKibben (2022) reports on research by the Climate Safe Lending Network, the Outdoor Policy Outfit, and Bank FWD (Climate Safe Lending, 2022), using the Rainforest Action 2021

report figures. The study estimated how much carbon would be created if the cash held by the world's largest companies was deposited with the largest U.S. Banks financing the fossil fuel industry. The researchers estimated that if Google's cash was invested with these banks, its carbon emissions would rise by 111 percent, Meta's by 112 percent, and Apple's by 64 percent. McKibben (2022) notes that despite IPCC and UN warnings in Spring 2022 that if man-made carbon emissions continue at its current rate, much of the World will be made uninhabitable by 2030, seven major new oil and gas projects were approved for financing soon afterwards.

Environmental advocates argue are concerned that companies are greenwashing by exaggerating their progress towards net zero emission goals. A 2021 New Climate Institute, Corporate Climate Responsibility Monitor publication finds that just 100 companies are emitting 70 percent of the world's greenhouse gases (Colorado-based Climate Accountability Institute Report 2017; Thorbecke 2021).

A report by *Bank On Our Future* and *Race to Zero*, points out other loopholes for GFANZ pledges, where GFANZ are allowed to maintain and build on their existing coal and other fossil fuel investments beyond 2023, before an eventual phase-out/ (Harvey 2022). This reflects GFANZ's emphasis on not divesting from fossil fuel clients right away to be able to engage with clients to transition away from carbon energy sources and towards green energy and innovative solutions.

The CDP's (formerly the Carbon Disclosure Project) *Financial Services Disclosure Report for 2020* presents survey results for financial services firms reporting to the CDP. Of these, 49 percent reported not having a climate impact analysis of their lending portfolios. For the 51 percent with a climate impact analysis, 25 percent (i.e., 84 financial institutions, with US \$27 trillion of assets) indicated that their financed carbon emissions were on average 700 times larger than their operational emissions. In the survey, financial institutions estimated a positive financial impact with an estimated \$2.9 trillion in revenues associated with green financing, investment, and insurance activity opportunities (CDP 2020).

In 2022, with greater concern for energy security and higher inflation associated with the Ukraine War, shareholders of Citi, Wells Fargo, Bank of America, and Chase followed management's advice, and voted down environmental shareholder resolutions to stop funding new fossil-fuel projects. Of 389 environmental/social proposals proxy ballots, the share of shareholder voter support fell from 37 percent in 2021 to 33 percent in 2022 (Masters, 2022).

Jamie Dimon, CEO of J.P. Morgan Chase, in his preface for the JP Morgan Chase's *2021 Environmental Social and Governance Report*, notes that JP Morgan has a commitment to sustainability and moving towards green energy, but at the same time a commitment to finance fossil fuel projects, based on the U.S.'s need for energy security as follows:

"A responsible approach to energy and climate, especially during a time of war, is to immediate help provide energy security around the globe while remaining focused on accelerating the development of affordable, reliable, and lower carbon solutions. We have a goal to reduce the carbon intensity of our financing portfolios, starting with oil & gas, electric power, and automotive manufacturing and targeting \$1 trillion by 2030—as part of an overall \$2.5 trillion sustainable development target—to advance renewable energy and other innovative technologies. And we are minimizing the environmental impact of our physical operations across thousands of branches, as well as our data centers and corporate offices."

In another letter to shareholders, Jamie Dimon, notes that the world still needs oil and natural gas today, but more funds should be directed towards "less carbon-intensive fuel sources and investing in innovations, such as carbon capture and sequestration, as we look to transition

to green technologies delivered at scale for society.” Earlier in the letter, he points out that there needs to be “immediate approval for additional oil and gas pipeline” along with supporting green energy projects, as part of a drive for greater energy security, an issue facing the West with reductions in oil and gas associated with the Ukraine War (Woodall, 2022).

Colas (2021) points out that for banks to achieve their pledges to meaningfully reduce global carbon emissions, companies need a universal way to estimate the volume and social cost of the carbon they emit with currently 40 countries and 20 cities having implemented carbon prices, with companies are charged a tax or fee for each ton of carbon emitted. However, carbon prices vary widely. Colas recommends that ideally, a global carbon price should be set. This could be done for instance by the G20. Also, an international agreement on the proper accounting practices for carbon is needed to measure carbon emission reductions uniformly across companies, which the International Financial Reporting Standards Foundation based in London is working to create.

3. The Role of Central Banks in the Transition Away from Fossil Fuels

Colas (2021) points out that although skeptics argue that Central Banks were not created for enforcing climate policy, but since climate-related disasters affect financial stability, climate-risk management falls with the mission of Central Banks to seek financial stability. Some Central Banks recognize this risk including the Bank of England’s (BOE) Prudential Regulatory Authority asking U.K. banks to measure their climate exposures, and the European Central Bank running preliminary climate stress tests, with French regulators launching a pilot exercise where banks and insurers measure their financial exposure to climate risk to 2050. For banks to get companies to act to get to net zero emissions, Colas notes, government incentives, metrics, and policies will be necessary.

Ainio (2021) points out the strong case for incorporating climate change into macroeconomic and investment decisions by Central Banks, with physical and transition risks with the move away from fossil fuels, and extreme weather events becoming more frequent that impact economic growth and inflation, and the stability of the global banking system. These considerations have led Central Banks to examine the effect of climate-change risk on their banking systems, including the BOE with climate change now in its policy remit, the U.S. Federal Reserve launching the Financial Stability Climate Committee and Supervision Climate Committee to deal with macro and micro climate related risks, and the Central Bank of Brazil issuing binding amendments to its macro-prudential regulatory framework to include exposure to environmental damages and risks. The Basel Committee in 2021 also published two analytical reports on climate-related risks that include the transmission channel and climate measurement methodologies.

Campiglio, Dafermos, Monnin, Ryan-Collins, Schotten, and Tanaks (2018) researching Central Bank actions on climate risk point out potential ways that Central Banks can engage in climate-change actions including:

- (1) encourage banks with climate risk exposures to mitigate these risks,
- (2) develop stress testing models for climate change risk, such as integrated assessment models (IAMs) to establish frameworks to assess and quantify the macro-financial impacts of climate change and the low-carbon transition;
- (3) create task forces, such as the U.S. Financial Stability Board Task Force for Climate-related Financial Disclosures to provide specific voluntary recommendations for sectors or mandated disclosures;
- (4) use regulatory tools to penalize banks for climate-risks or reward them for financing

alternative energy technology (i.e., reserve, liquidity, caps on loans to value ratios, ceilings on credit growth, and capital requirements), such as Banque Du Liban's lower reserve requirement ratio for banks with loans for renewable energy and energy efficiency projects;

- (5) use green quantitative easing (QE) by purchasing green bonds for QE operations, a more controversial idea since requiring this for emergency QE open market operations could overburden these operations, reducing their agility and effectiveness.

The report by the Center for American Progress and Sierra Club (CAP, 2021) provides a number of different recommendations as well for the use of Central Bank supervisory powers to incentivize banks to reduce their total portfolio GHG emissions including:

- (1) Ensure fiduciary responsibility follow-through on commitments by firms made to investors and the public and how fiduciaries will invest and how they will vote their shares;
- (2) Ensure that the Financial Stability Oversight Council (FSOC) incorporates climate risk in assessing whether nonbank financial institutions pose a threat to the stability of the U.S. economy and if so be labeling institutions with significant climate risk as systematically important financial institutions (SIFs);
- (3) Provide supervisory guidance on climate-related risk;
- (4) Incorporate climate risk into bank stress tests;
- (5) Require banks to develop enhanced scenario analysis to assess longer-term vulnerability to climate-related risks to include a 1.5-degree centigrade aligned scenario with little to no overshoot, and limited reliance on carbon offsets and unproven negative emissions technologies to help access climate-related risks;
- (6) Require banks to ascertain the climate risk of investments including exposure to the fossil fuel industry and coal or gas fired power plants, and to disclose to regulators and the public details of the exposure;
- (7) Impose higher capital requirement weighting for fossil fuel financing by banks;
- (8) Implement climate risk surcharges on global systemically important banks (GSIBs);
- (9) Tighten limits for exposure to climate risk and to segments of the fossil fuel industry;
- (10) Adjust bank deposit insurance premiums to reflect climate-related risks.

The CAP (2021) report suggests that these could be enacted under the Fed's monitoring and supervisory powers to promote stability in the banking system.

In 2017, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) was launched with a mission to accelerate the scaling up of green finance and develop recommendations for Central Banks to engage in combatting climate change, and to support an exchange of ideas, research, and best practices for environmental and climate risk management for the financial sector. Currently the NGFS includes 114 central banks and supervisors. The U.S. Federal Reserve joined in 2020, after being an observer in 2019. The NGFS allows sharing across Central banks to develop concrete efforts and clear supervisory expectations to help banks manage and be held accountable for their climate change risks (NGFS, 2022; Smialek, 2020).

Bank Regulators comprehend that all banks regardless of their size have significant exposures to climate-related risks. The U.S. Office of the Comptroller of the Currency (OCC),

for instance, announced in December 2021 that it will be drafting principles designed for the identification and management of climate-related financial risks for banks with greater than \$100 billion in consolidated assets to provide a high-level framework for climate-related financial risk management consistent with OCC rules and guidance (OCC 2021).

The Bank of England (BOE) in late 2021 announced that it would change the rules for its corporate bond purchases to meet green goals including excluding debt from coal mining companies, as well as tilting purchases toward strong climate performance. To have their bonds considered for the bond buying program, companies must meet certain climate criteria including a climate disclosure requirement and emission reduction plans for energy and utilities companies. The BOE inaugurated a preliminary “climate stress test” based on U.K. bank 2020 balance sheet figures for three different climate scenarios. For the worst case, where no action is taken, the stress test showed U.K. banks incurring up to 225 billion British Pounds in credit losses by 2050, and insurers’ asset values falling by 15 percent (Hodgson and Smith, 2022; Nelson, 2021). U.K. NatWest (formerly the Royal Bank of Scotland) has switched from being a major financier of the oil and gas industry to a leader in green finance, with a planned phase out of its investments related to coal and a plan to halve its carbon emissions from all its financing in 2030, to get to net zero in 2050, and investing \$133 billion in to sustainable-energy projects over the next four years (Nelson, 2021).

The prospect of a catastrophic Green Swan Climate Event for the global financial system is a concern for the Bank of International Settlements (BIS) and for the International Monetary Fund (IMF). This type of extreme risk is discussed in the BIS report “The Green Swan” Central Banking and Financial Stability in the Age of Climate Change” (Bolton, et. al. 2020). The Green Swan Initiative (GSI, 2021), and a Green Swan Conference on Coordinating Finance on Climate in 2021, recommended that the financial sector in practice can take immediate action against such a risk by reducing financing support to the most carbon intensive firms (BIS, 2021; GSI 2021; Bolton, et. al., 2020).

Whether Central Banks have the authority to act on financial institution climate-change risks within existing mandates has been widely debated. Advocates point out that climate risk is both a macroeconomic and financial stability risk, and that Central Banks were given mandates for reducing these risks during both the Financial Crisis of 2008 and the Covid-19 pandemic of 2020 to guarantee financial stability, with dramatic climate change a serious risk to the stability of the financial system. Bartholomew and Diggle (2021) provide justifications for Central Banks to act on climate change risks including the following:

- (1) the effect of climate changes and associated policy responses can have in producing widespread swings in relative prices, a rise in inflation, and economic downturns;
- (2) the risk of climate change on financial institution stability for institutions that have great exposure to assets whose values will be affected by physical and transition risks;
- (3) the importance of central bank involvement with effective tools to use when climate change necessitates that all public policy avenues need to be employed to meet and push a government’s climate objectives; and
- (4) the transition from carbon to green energy, whereby climate change includes “extreme welfare consequences at stake.”

Skinner (2022) examines reasons why the U.S. Fed may not have powers to act on certain aspects of climate change, but points out that the Fed is best positioned legally to use its micro-prudential supervision and research abilities to act on climate change risks. Supervisory tools, include monitoring a bank’s asset quality, setting supervisory expectations for banks about climate risk, discussing with bank managers about a bank’s medium and long-term planning

with changing global circumstances including climate change, identifying necessary firm data to examine bank climate change exposures including data on carbon-heavy assets, and the ability to supervise a bank's risk management and assist in climate-risk modeling for the impact of climate change on a bank's asset portfolios.

Some Wall Street critics argue that fossil fuel lending is a relatively small part of large bank portfolios, so large banks are less exposed to climate-related financial risks than the financial industry sector as a whole (Campbell, 2021). The relevance of environmental, social, and governance (ESG) investing has also been questioned, highlighted more recently by comments made in a speech at the Moral Money Summit Europe in May 2022 by Stuart Kirk, the global head of responsible investing at HSBC's asset management divisions. In his speech, Stuart Kirk scoffed at the financial risks of global warming as hyperbole, and added "Who cares if Miami is six metres underwater in 100 years?" The speech was rebuked by HSBC's Chief Executive Noel Quinn and head of wealth and personal banking Nuno Matos, with HSBC having a strong commitment to protect communities, business, and the natural environment from the damaging effects of climate change. Stuart Kirk was suspended and later resigned. However, his remarks kicked off an industry debate about the role of ESG in tackling climate change and the existence of greenwashing as this investment segment gets larger, with global sustainable fund assets growing dramatically to \$2.77 trillion in the first quarter of 2022, from \$1 trillion in 2019. Critics argue that to be able to tackle climate change, large scale government and market-based solutions, such as a carbon tax are needed to penalize companies for their carbon emissions that ESG investments cannot provide the scale for, and that divestments of fossil fuels by ESG funds simply allowed other investors to purchase these at a discount (Hodgson and Smith, 2022; HSBC 2022; Gross 2022; Walker 2022a,b; Armstrong, 2022, Agnew and Klasa, 2022; Agnew and Morris, 2022; Grant, 2022).

4. U.S. SEC Climate-Related Disclosure Proposals

Under President Biden's May 2021 Executive Order on Climate-Related Financial Risk, U.S. Treasury Secretary Janet Yellen was directed to engage with other members of the U.S. Financial Stability Oversight Council (FSOC) to comprehensively assess how the stability of the U.S. financial system is affected by climate-related financial risk. In doing so, FSOC member agencies were asked to recommend and implement an integrated plan for policies and programs to enhance the disclosure of climate-related financial risk.

The U.S. FSOC Climate Related Risk 2021 report concluded that the U.S. Financial System's Stability is threatened by catastrophic climate-related events and their impacts that result from warming temperatures, and that these impose significant costs to citizens and the economy. The report encouraged investors and financial institutions to take climate-related risks into account in their investment and lending decisions, and regulators to evaluate climate change risk for financial institutions in terms of financial stability. The report advocated for more transparent, uniform, climate-related disclosures, such as those under the Financial Stabilities Task Force on Climate-Related Disclosures (TCFD) that includes core elements for disclosure of governance, strategy, risk management metrics, and targets for climate risk (Posner, 2021; FSOC 2021; King 2021).

In March 2022, the U.S. Security and Exchange Commission (SEC, 2022) issued proposed climate change risk disclosure rule changes for public comment, with rules requiring U.S. publicly traded companies to disclose information on their climate-change risks (including a firm's GHG emissions) that will allow investors to access reliable information about a company's climate risks for informed investment decisions. This includes:

- (1) a firm's governance of climate-related risks and relevant risk management processes;

- (2) the likely material impact of any climate-related risks on a firm's business and consolidated financial statements over the short, medium, or long-term;
- (3) the likely effect of any identified climate-related risks on a firm's strategy, business model, and outlook; and
- (4) the impact of climate-related events and transition activities on the line items of a firm's consolidated financial statements, along with the assumptions used for the financial statements.

For banks that use climate-change scenario analysis and have developed transition plans, or publicly set climate-related targets or goals, the proposed rules would require certain disclosures to allow investors to understand these aspects of a firm's climate risk management.

Under the proposed rules, corporations would need to disclose information about Scope 1: Direct GHG emissions, Scope 2: indirect emissions from purchased electricity or other forms of energy, and Scope 3 emissions from upstream and downstream activities in its value chain, if a firm has a set GHG emissions target/goal for these. The proposed rules would include a phase-in period for all registrants, and an additional phase-in period for Scope 3 emissions disclosure (SEC 2022).

In an overview article on the comments the SEC received, Olczykowski and Reiner (2022) point out the SEC received over 5,700 comments through June 17, 2022, including comments from some of the world's largest asset managers and largest financial institutions, as well as state and federal elected officials, large tech companies, and standard-setting organizations (i.e., the Partnership for Carbon Accounting Financials, and the Sustainability and Climate Disclosure Standard Board). Most comments recognized the SEC's legal authority to mandate climate-related disclosures, and supported the SEC's efforts to develop these. There were a variety of opinions on what should be disclosed, and how it should be disclosed, and whether disclosure requirements should be based on meeting a materiality threshold. Opposing comments came from West Virginia's Attorney General, Patrick Morrissey, and Missouri's Attorney General, Eric Schmitt, challenging the Commission's authority to compel climate-related disclosures based on First Amendment grounds. A letter signed by 22 House Republicans suggested that uniform mandates would be deeply misguided for an issue as complex as climate change. A letter signed by over 500 investors, lawmakers, and NGOs supporting the proposed rules, pointing out that climate change poses a variety of material risks to companies of all sizes in all industries across the U.S.

Reactions differed across industries, with high tech companies (i.e., Microsoft and Salesforce) generally supporting the proposals, including Microsoft and Salesforce, and large pension funds (i.e. CALPERs). However, some business groups including the U.S. Chamber of Commerce and the Business Roundtable spent a combined \$23.9 million in 2022 to push for a revised, weakened proposal. Concerns included the large expense if disclosures are included in audited statements and whether Scope 3 emission disclosures are required. Other comments suggested that disclosures should be reported to the SEC versus being disclosed in annual reports (Temple-West, 2022; Olczykowski and Reiner (2022).

5. Political Attacks on Financial Institutions Acting on Climate and ESG Investors

Both the Banking Industry and the Sustainable Investment Fund Industry have been attacked by legislators from fossil fuel states, where fossil fuel companies often provide large campaign contributions. With a painful transition away from fossil fuels economically for these states, there is resentment for exclusion of fossil fuels from sustainable investment funds, and

retribution for banks targeting their loan and investment portfolio emissions to net zero by 2050.

Conservative politicians have identified ESG-investing as an enemy, “with a rallying cry: Down with ESG” as part of a narrative that “wokeness” has “run amok,” often called “corporate cancel culture,” in an attempt to reduce the momentum by weakening the resolve of big asset managers ESG investments, one of Wall Street’s most successful initiatives. Efforts include reaching out to financial organizations, media appearances, billboards (such as one in Times Square against Blackrock), as well as threats to punish companies that are environmentally conscious. West Virginia’s state treasurer removed state investments from BlackRock, since Larry Fink, Blackrock’s CEO is an advocate for considering climate change risk as an economic risk in investing decisions. (Meyers, 2021; Gelles and Tabuchi, 2022; Green and Kishan, 2022).

In a speech in May 2022, former Vice President Pence attacked large investment firms engaged in ESG investing, stating that they push a “radical ESG agenda.” Legislatures in fossil fuel energy states and their allies have used public money to engage in an aggressive campaign to prevent investments in ESG investment management companies from managing state funds, with arguments that climate change risk is not part of a fund’s fiduciary duty to its investors. This includes blocking investment companies from managing state pension fund and underwriting bond issues. Campaign efforts include reaching out to financial organizations, media appearances, billboards (such as one in Times Square against Blackrock), along with threats to punish companies that are environmentally conscious. West Virginia’s state treasurer removed state investments from BlackRock, since Larry Fink, Blackrock’s CEO advocates for including climate change risk as an economic risk in investing decisions. Texas initiated a new state law banning state retirement funds from doing business with asset management companies that exclude fossil fuels. Similar laws are being promoted by conservative lawmakers in 15 other states. Conservative lawmakers and their allies have also campaigned to punish financial institutions pledging to reduce their carbon emissions with targets for carbon emission for net zero by 2050. In 2021 Senator Marco Rubio of Florida proposed a bill “Mind Your Own Business Act” allowing major shareholders to sue corporations and their executives if business strategies deviate from a sole fiduciary duty to maximize returns for investors (Meyers, 2021; Gelles and Tabuchi, 2022; Green and Kishan, 2022).

Large banks with net zero emission goals have been targeted with retribution as well, since these goals imply eventual divestment from fossil fuel financing. The State Treasurer of West Virginia, Riley Moore, prepared a list of banks that would lose the state’s business, if they boycott the coal industry and other fossil fuels. Kentucky, Texas, and West Virginia passed legislation requiring firms to disclose whether they have policies limiting their doing business with oil, gas, and coal companies, such as pledges to reduce their carbon footprint. Retribution for having these pledges include banks potentially losing their licenses in those states, with 12 other states are considering such measures. State legislators have sued major credit rating agencies, including S&P Global for including environmental risks and other factors in their state credit rating considerations, such as in Utah and Idaho, as well as West Virginia, as well as Mississippi that received a negative rating given its climate risk for its municipal debt (Meyers, 2021; Gelles and Tabuchi, 2022; Green and Kishan, 2022).

Yet ESG funds have thrived, with Bloomberg Intelligence forecasting that they are likely to rise to \$50 trillion worldwide by 2025. New Federal rules in the U.S. allow pension funds to consider ESG alongside traditional fiduciary factors in making investing decisions, and some states including California and New York are pushing for more restrictive ESG screens for state funds. Faith-based groups, universities, and foundations have urged also companies to reduce their carbon emissions. Some state pension funds are divesting from fossil fuels including New York State’s pension fund, and the state of Maine requiring both its Treasury and public

employee pension plans divest from fossil fuels (Meyers, 2021; Gelles and Tabuchi, 2022; Green and Kishan, 2022).

6. Summary and Potential for Regulations to Support Bank Climate Change Goals

Financial institutions face great challenges given the pull of push of needing to do more to reach net zero emission goals, and at the same time educating and assisting clients to reduce their carbon emissions. In particular, large banks have been asked to be climate leaders, with members joining NZBA, asked to engage with their clients including fossil fuel companies to move towards reaching net zero emissions by 2050.

Large U.S. banks face particular challenges including culture wars and conflicting government goals for energy security in light of the Ukraine War, and at the same time avoiding the attention legislators in fossil fuel states that are imposing restrictions on financial institutions and companies with climate change emission targets that involve a move away from fossil fuels. In addition, they face criticism for continuing to underwrite fossil fuel company equity and debt for new projects that cause environmental damage and increase carbon emissions, at a time when there is urgency for a dramatic reduction.

Central Banks have also been at the forefront encouraging banks to disclose their climate risk and to reduce their carbon emissions. Within the mandates of the Fed, its supervisory and monitoring activities are less likely to be challenged to protect the stability of the banking system given climate change risks. Government legislative actions, such as a revenue neutral carbon tax, however, are needed to truly incentivize companies to reach net zero emissions by 2050.

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