President Trump's Paris Pullout: What it means for financial institutions

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Throughout his campaign for the U.S. presidency, Donald Trump expressed skepticism about climate change and promised to repeal Obama-era climate policies. On June 1, 2017, President Trump made good on one of his biggest climate-policy promises by announcing that the United States would withdraw from the Paris Agreement.

This announcement was a major disappointment for the millions of Americans who support climate change mitigation efforts and the creation of a greener future. The decision has been widely criticized by both political and corporate leaders around the globe, including those on Wall Street. Taking to President Trump's favorite social media platform, Goldman Sachs' chief executive Lloyd Blankfein tweeted for the first time ever, writing *"[t]oday's decisions is a setback for the environment and for the US's leadership position in the world. #ParisAgreement."* Similar sentiments were shared by Citigroup's Michael Corbat, JP Morgan's Jamie Dimon, Morgan Stanley's James Forman, and Bank of America's Brian Moynihan.

These reactions should come as no surprise: Climate change and its vast environmental, social, and economic implications have been well studied and documented by scientists, engineers and economists around the globe. In their most recent report, the Intergovernmental Panel on Climate Change (IPCC) linked anthropogenic climate change to an increase in extreme weather events including flooding, cyclones, and wildfires, all of which impose significant human and financial tolls. Paired with the warming of the atmosphere and oceans, the melting of snow and ice, and the subsequent rising sea levels, climate change stands to have widespread impacts on food production, health care and many other vital sectors of the economy.[1] As stated by the Pentagon, climate change will also exacerbate current global stressors: "The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions… [climate change] will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions..."[2]

Given their integral role in all sectors of the economy, financial institutions are inherently susceptible to the risks of climate change, but are also well positioned to play a prominent role in the transition to lower carbon economies.[3] Understanding these risks and opportunities, global financial leaders have become increasingly adamant that financial institutions must explicitly consider climate change in their long-term business strategies, risk management processes and reporting frameworks. Additionally, there has been considerable push for increased transparency and consistency surrounding environmental reporting which would allow financial institutions to adequately measure and respond to their exposure to climate change risk.

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[1] Intergovernmental Panel on Climate Change (2014), "Climate Change 2014: Synthesis Report", Contribution of working groups I, II and III to the Fifth Assessment Report of the IPCC," IPCC, Geneva, Switzerland.
[2] Department of Defense, United States of America (2014), "Quadrennial Defense Review".
[3] LaPlante, A., Coleman, T., (2016) "Climate Change: Why Financial Institutions Should Take Note", The Global Risk Institute.

With all that being said, President Trump's decision stands to dramatically alter the trajectory of U.S. climate policy and will quite possibly impact broader global mitigation efforts. So, what does this decision mean for financial institutions? And in particular, how will it affect the risks they face and the returns they seek?

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First, I will preface this discussion with a few relevant facts: There is a significant body of scientific work whose results show that it is extremely unlikely that the observed warming of the earth's surface, oceans, and atmosphere is solely a result of natural processes and that this warming is most likely due to the post-industrial rise in atmospheric greenhouse gases (ghg) driven by human activity. It follows that scientists have concluded, with a high degree of confidence, that climate change is, in fact, anthropogenic in nature.[4] Up until 2006 when it was surpassed by China, the U.S. had been, by a large margin, the world's top ghg emitter. (Figure 1) Even now, the U.S. boasts the highest emissions per capita in comparison to the other top ten global emitters. It follows that the U.S. has played and continues to play a central role in contributing to anthropogenic climate change, making their participation in global emissions reduction and climate change mitigation efforts even more crucial.[5,6]

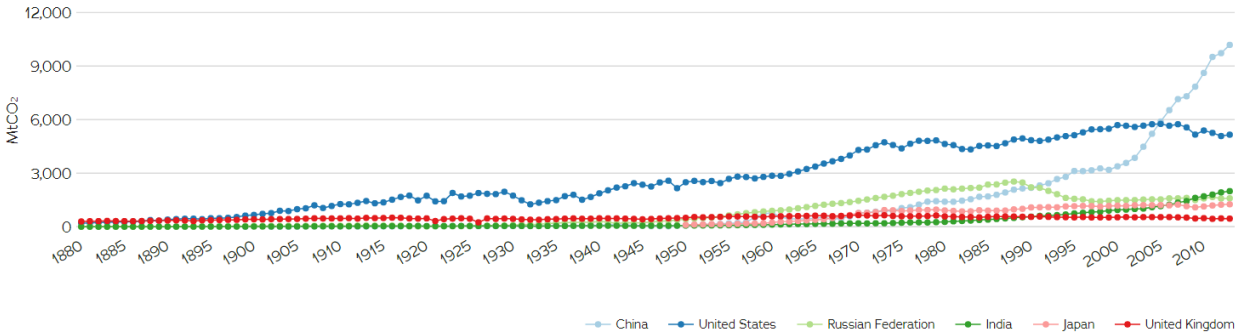

Figure 1: 1880-2013 Global Top Emitters (CO_2 Emissions Excluding Land-Use Change and Forestry)[7]

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Let us begin by considering what is, perhaps, the most obvious climate change related risk, the physical risk. Insurers, in particular, are well aware of the increased extreme weather-related losses associated with climate change. The number of worldwide weather-related loss events has more than tripled since the 1980s, resulting in an increase in inflation-adjusted insured losses of approximately $40 billion USD. [8] Of course, financial institutions' real-estate investments are also vulnerable to losses caused by weather-related physical damages and the subsequent operational disruptions they may cause. In addition, as climate change increases the frequency and/or severity of damage to real estate assets, commercial and residential mortgage default rates may rise and collateral values may fall, particularly in geographical areas prone to fires, flooding and other extreme weather events.

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[4] Intergovernmental Panel on Climate Change (2007), "IPCC Fourth Assessment Report: Section 9.7 Combining Evidence of Anthropogenic Climate Change", IPCC, Geneva, Switzerland.
[5] Le Quéré, C., et al. (2016), "Global Carbon Budget 2016", *Earth Syst. Sci. Data*, vol. 8, pp.1–45.
[6] The World Bank, (2017), "CO2 emissions (metric tons per capita)", Online Resource: http://data.worldbank.org/indicator/EN.ATM.CO2E.PC?view=map&year_high_desc=true
[7] CAIT Climate Data Explorer, World Resource Institute.
[8] Munich Re (2017), "Topics Geo: Natural Catastrophes 2016 Analyses, Assessments, Positions".

Beyond the direct physical risks of climate change there are secondary physical risks which include but are not limited to the disruption of global supply chains, resource scarcity, and potential macro-economic or political shocks. These risks can reduce economic growth and weaken financial markets. A recent study by Deitz et al. reported that climate change could result in a devaluation of financial assets of $2.5tn USD.[9] Similarly, a University of Cambridge report found that short-term shifts in climate sentiment may reduce the value of global investment portfolios by as much as 45 percent. Moreover, this report suggested that up to half of this risk is unhedgeable unless action on climate change is taken at a system level.[10]

In short, without emissions reductions and climate change mitigation, direct and indirect weather-related losses will continue to rise as climate change progresses. The lack of socio-economic climate policies and adequate infrastructure planning will only exacerbate these losses. As noted in the National Climate Assessment report, "[e]ssential infrastructure systems such as water, energy supply, and transportation will increasingly be compromised by interrelated climate change impacts. The nation's economy, security, and culture all depend on the resilience of urban infrastructure systems."[11]

President Trump's stance on climate change stands to impede emissions reduction and mitigation efforts, particularly in the case of carbon-intensive industries like coal and oil. Furthermore, given its lead role in infrastructure maintenance and development, the U.S. government's disengagement from climate change policymaking may lead to infrastructure planning that fails to adequately account for the changing climate.

Not all is lost just yet, however. In response to President Trump's announcement, state governors, city mayors, corporate executives, and university presidents around the country signed an open letter reaffirming their commitment to the terms of the Paris Agreement. The We Are Still In coalition accounts for one-third of U.S. gross domestic product and includes economic engines like the states of California and New York.[12] Numerous Fortune 500 companies, including Google, Facebook, IBM, and Unilever, have promised to uphold the Paris Agreement, with many of them committing to even more stringent targets.

In addition to these shows of support, climate leaders have begun stepping up to ensure mitigation efforts continue in the United States. Michael Bloomberg offered $15 million USD to UN climate change mitigation efforts, and in a recent address at the U.S. Conference of Mayors' Annual Meeting, he announced the American Cities Initiative, which will include $200 Million USD in new investments geared towards helping cities develop forward thinking policies to promote innovation and sustainability; climate change will be a central theme of this initiative. So although policies may not be implemented at the federal level, it appears that mitigation efforts will continue regardless of the White House's stance.

President Trump's policy reversal has increased the uncertainty surrounding the trajectory of U.S. climate policy. This will undoubtedly add to the complexities of managing transition risk — the risk associated with the transition to a low-carbon economy. Policies may now vary widely across cities and states,

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[9] Dietz, S., Bowen, A., Dixon, C., Gradwell, P., (2016), "Climate Value at Risk of Global Financial Assets", *Nature Climate Change*, vol. 6, pp. 676–679.
[10] University of Cambridge (2015), "Unhedgeable Risk: How Climate Change Sentiment Impacts Investment".
[11] U.S. Global Climate Change Research Program, (2014), "Climate Change Impacts in the United States: National Climate Assessment".
[12] We Are Still In, Online Resource: http://wearestillin.com/

causing further carbon risk disparities between similar assets that lie in different geographical locations. Moreover, geographical variation in climate policy may provide competitive advantages to areas with less stringent polices.

Introducing additional uncertainty around the timing and extent of both climate policy and future climate change itself may also lead to the mispricing of assets if the risks associated with climate change-related transition pathways are not fully reflected in asset prices. For example, fossil fuel companies are valued based on all known exploitable reserves. This means that approximately 50% of oil and gas companies' market values are derived from long-term cash flows based on the extraction of reserves over a 10-plus year time frame.[13] However, in order to reach the climate change mitigation goals and ghg reduction targets laid out by the IPCC, no more than one-third of the identified fossil fuel research can be consumed before 2050.[14] This will, no doubt, put companies at risk of asset stranding and devaluation. Along a similar vein, both HSBC and Standard and Poor's have reported that the market capitalisation and creditworthiness of carbon intensive energy companies will be negatively impacted by emissions-reducing policies.[15, 16]

Although these facts may seem to support President Trump's decision, that is not the case. Avoidance of sufficient emissions reduction policies will have broader economic impacts that far outweigh any short term benefit realized by high carbon energy companies. Moreover, policy uncertainty paired with the increased severity of unimpeded climate change will likely be met with a rise in market volatility.[17] Looking farther down the line, it is wholly possible that the federal government will buy back into climate change, at which point climate policies may need to be comparatively more severe to remain on track with global climate targets. This may lead to more drastic and widespread devaluations.

From an investment perspective, the U.S. withdrawal from Paris is not likely to reduce momentum in green-energy investment. Many industry leaders have invested heavily to reduce their carbon emissions — 55% of global energy investment in 2016 went to clean energy — and these sunk costs mean that reversing course would be costly. Globally, demand for green energy will continue to rise as other Paris signatories continue to work towards their emissions reductions targets, and U.S. energy producers — and their financiers — must invest in clean-energy technologies to remain competitive in the global energy market.

Furthermore, technological progress will continue to reduce the cost of clean energy and make fossil fuels less attractive regardless of the U.S. government`s climate change policies. In fact, the cost-based transition towards clean energy is already well underway even in states that voted for President Trump and have historically relied heavily on fossil fuel extraction. Iowa, Kansas, North and South Dakota, and Oklahoma derive larger fractions of their power from wind than any other state, and Texas produces the

[13] Carbon Trust (2008), "Climate Change – A Business Revolution? How Tackling Climate Change Could Create or Destroy Company Value".
[14] International Energy Agency (2015), "World Energy Outlook 2015"
[15] HSBC (2015), "Bonds and Climate Change: The State of the Market in 2015"
[16] Petkov, M., Wilkins, M., Xie, X., (2015), "Climate Change will Likely Test the Resilience of Corporates' Creditworthiness to Natural Catastrophes", Standard and Poor's
[17] Stern, N., (2006), "Stern Review on The Economics of Climate Change (pre-publication edition). Executive Summary". HM Treasury, London

most wind power overall.[18] This trend has lead Jim Barry, the head of BlackRocks`s infrastructure group, to declare that "[c]oal is dead… [R]enewables have gotten so cheap… These [coal plants] will not reopen whatever President Trump does."[19] U.S. coal production dropped by 27 percent between 2011 and 2016, and only 3-5 percent of this decline can be attributed to Obama-era regulations.[20]

The cost-based transition towards clean energy is evident outside the United States as well. In the United Kingdom, wind, nuclear, and solar generate more electricity than coal and gas, and solar plants in Germany are now profitable without government subsidies.[18] This trend is even evident in emerging markets. India, for example, is on track to exceed its Paris Targets due in large part to rapidly falling solar prices[21], and China has halted construction of 103 new coal-fired power plants and plans to invest more than $360 billion into renewable energy by the end of the decade.[22]

Outside the energy sector, technological progress is making other green technologies more affordable. For example, sales of electric vehicles grew more than 37 percent in the U.S. between 2015 and 2016.[23] This transition, too, is likely to continue regardless of U.S. climate policy. Financial institutions should be cognizant of the prominent role of technological progress in the rise of clean energy and other green technologies, and should recognize the myriad investment opportunities that this progress has already begun to create. Unsurprisingly, many financial institutions have taken note. Marcie Frost, CEO of CalPers, the California Public Employees' Retirement System, recently stated "Calpers supports the Paris Agreement because it makes financial sense... [it] enables us to manage material risk and build opportunity in our investment portfolio."[24]

Irrespective of the White House's stance on climate change, financial institutions should be aware of the strengthening customer sentiment around climate change. An unprecedented example of this came just two days before President Trump's decision to pull out of the Paris agreement: ExxonMobil, the largest Western oil and gas firm, saw 62% of its shareholders vote in favour of assessing and disclosing both the short and long-term effects of a 2 degree pathway on its performance and viability. In general, the population is becoming more aware of the pervasive impacts of climate change, including those that are financial in nature. Consequently, financial institutions' customer bases are increasingly seeking out sustainable and environmentally-friendly investment and banking opportunities. Aside from the financial benefits of green investing, it is also beneficial from a reputational risk perspective for financial institutions to support renewable energies and clean technologies.

It has become abundantly clear that climate change is one of the most significant environmental, economic and social challenges the modern world has ever faced, and if we want to stand a chance in avoiding its most severe effects, ghg emissions must be curbed on a global scale. Indeed, this will only be achieved if both governments and private sectors fully commit to climate change mitigation and actively work towards achieving resilient, low carbon economies. Financial institutions, for one, are well placed to

[18] UNEP FI, (2017), "UNEP FI Responds to the US Withdrawal from the Paris Agreement"
[19] https://about.bnef.com/blog/10-renewable-energy-predictions-2017/
[20] Houser, T., Bordoff, J., Marsters, P., (2017), "Can Coal Make a Comeback?", Columbia University, Center on Global Energy Policy.
[21] Central Electricity Authority, (2016), "Draft National Electricity Plan", Government of India, Ministry of Power.
[22] Fortune, (2017), "Here is How Much Money China is Throwing at Renewables".
[23] https://www.forbes.com/sites/rrapier/2017/02/05/u-s-electric-vehicle-sales-soared-in-2016/#70b7192b217f
[24] https://www.calpers.ca.gov/page/newsroom/calpers-news/2017/paris-agreement-decision

play an integral role in guiding the broader economy's transition to a low-carbon future through the financing of abatement and adaptation projects, by reallocating investments towards renewable energies and clean technologies, and by continuing to encourage transparency through climate change-related financial disclosure.

U.S. participation in Paris may not have a material impact on many of the risks — or the opportunities — that climate change and the transition to a low-carbon economy pose for financial institutions if (and likely only if) states, cities, businesses and investors pick up the slack and actively work towards upholding the Paris agreement and its carbon reduction goals. Without climate change mitigation, financial institutions should expect higher weather-related losses, greater uncertainty surrounding transition pathways, and increased market volatility, amongst other things.

Although it is difficult to say for certain what the impact of President Trump's climate policy reversal will be on financial institutions and the broader economy, one thing is for sure: if the U.S., as a whole, fails to sufficiently manage and mitigate the risks of climate change, young Americans and future generations will bear the consequences for decades to come.