Are your investments at risk?

Facing climate change threats head on in institutional real estate portfolios

by Molly McCabe

Impacts of climate change are affecting the real estate markets — cyclones, extraordinary rain events, rising sea levels, fire, extreme heat. There is increasing risk of an asset becoming "stranded" due to direct impacts and devaluations related to the transition to a low-carbon economy. We face sweeping and long-term consequences as well for the global economy, biodiversity and human development. The question is, what do we do about it? How do we assess the risk? How do we stave off what appears to be almost inevitable, and what can real estate investors do to shore up their portfolios and remain good stewards of capital? It is no longer an abstract exercise, but rather a fiduciary, practical and moral one.

It's clear we will undergo an extraordinary amount of change, in an exceptionally short time frame, at a magnitude we have not experienced in our lifetimes. We must fully decarbonize our economies by 2050. To do this, we'll need to innovate and transform our buildings, energy resources, distribution systems, transportation, food sources and consumer spending habits. For many locales, this will be dictated via regulatory efficiency and emission standards. For all, market expectation of what is an institutional-quality asset will change. This is nothing less than the greatest transformation since the Industrial Revolution. It is entirely feasible, however, if we have the will to do so. Frankly, from both a personal and fiduciary perspective, we really don't have the luxury not to.

In the coming years, climate change — along with the efforts to slow down, mitigate and adapt to it — will have increasingly significant effects on the global economy. The real estate investment market has begun to recognize and understand there are pricing implications of physical climate risk, economic disruption and low-carbon regulatory action. The risk of early economic obsolescence due to changing regulatory requirements is real. Buildings will become less marketable, and many will require costly refurbishment measures. A new report from the Urban Land Institute (ULI) and Heitman, *Climate Risk and Real Estate Investment Decision-Making,* identifies two types of exposure faced by real estate investors — physical and transitional risks: "Physical risks encompass catastrophic weather events and weather pattern changes, as well as the subsequent costs — from damage repair to adaptive measures like elevating buildings. Transitional risks include changes in regulations; available resources; and location appeal that emanate from climate change, such as increased carbon taxes or lower property values."

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According to the World Economic Forum's *The Global Risks Report 2019,* environmental risks account for three of the top five risks by likelihood and four by impact. Extreme weather events and failure of climate mitigation and adaptation, along with natural disasters, rank above even water crises and cyberattacks as the most potentially damaging and likely to happen in the coming decade.

Globally, it is likely that 2019 will be the second-warmest year on record, and eight of the 10 warmest years on record occurred in the past decade. Even more striking is 19 out of the 20 warmest years have been recorded since 2001.

All major agencies that independently measure global temperatures, including NOAA, NASA, the U.K. Met Office, and the Japan Meteorological Agency, have each concluded the Earth continues to warm. The consequences of inaction are becoming abundantly clear. According to *The Global Risks Report,* "The accelerating pace of biodiversity loss is a particular concern," as are large-scale involuntary migration, food and water insecurity, and social instability. As global environmental risks increase in frequency and severity, the impact on worldwide movement of goods and services is likely to intensify.

If global warming continues at its current rate, the Intergovernmental Panel on Climate Change (IPCC) believes it is likely the rise in atmospheric temperature will reach 1.5°C within the next 35 years. Without significant action, it appears increasingly likely the world will in fact pass the 2°C upper limit identified by the Paris Climate Agreement. This is particularly problematic for coastal regions. As global temperatures have risen, so have sea levels at an accelerating rate. According to the IPCC, a 2°C increase will result in a rise in sea between one and three feet, or more, by the year 2100.

The consequences of climate change are only growing costlier.

Overexposed

The consequences of climate change are only growing costlier. According to insurance firm Aon, natural disasters caused $225 billion of economic damage globally in 2018, which marked the third consecutive year of catastrophic losses surpassing the $200 billion threshold and the 10th time since 2000.

As it turns out, spending on disaster recovery is almost nine times higher than on prevention. Since 1980, Aon found the percentage of covered tropical cyclone–related damage has been only 31 percent. This means that 69 percent — or $1.1 trillion — of global storm damage has gone uninsured. The absolute cost and percentage of uninsured losses is likely to rise significantly. In 2018, the International Association of Insurance Supervisors and the United Nations–backed Sustainable Insurance Forum put forth universal standards for how insurers should account for climate risks. Insurance rates will likely become far more expensive.

This should be a wake-up call to real estate owners of all sizes. From an overall investment perspective, one thought is to avoid investing in large property insurers, such as The Allstate Corp. and The Travelers Cos., which seem likely to have the greatest exposure to rising costs, paying out more as climate-related damages increase. Over the long run, however, insurers will likely fare just fine because much of their business is writing coverage for short periods, giving them the chance to reprice their products annually as more information comes to light.

What real estate investors ought to be concerned with is their own portfolios. Recently, the U.S. Federal Emergency Management Agency (FEMA) introduced Risk Rating 2.0 to help "customers better understand their flood risk and provide them with more accurate rates based on their unique risk." FEMA, which is the insurer of last resort in the United States, is providing a basis for insurers to reprice rates based on exposure to flooding and cost to rebuild. Over time, in certain locations, insurance may either become unobtainable or so costly only a few will be able to afford the risk. In early December 2019, California regulators imposed a one-year moratorium banning insurers from dropping policies for homeowners in wildfire-ravaged areas of the state. This provides a temporary respite and time to assess a path forward to deal with the increasing intensity and frequency of wildfires.

Rating agency Moody's Investors Service recently warned cities and states in the United States to take steps to prepare for climate change or face downgrades in their bond ratings. And in a significant nod to global exposure risk, in July 2019 Moody's purchased a controlling stake in Four Twenty Seven, a firm that measures the physical risks of climate change. Four Twenty Seven's algorithms measure a range of hazards — including extreme rainfall, hurricanes, heat stress and sea-level rise — and track their impact on 2,000 companies and 196 countries. The results are not pretty.

The impacts are moving from thesis to reality and from subjective to quantitative. Climate change will jolt everything from real estate prices to energy stocks and the currencies of emerging-market nations. It has already had financial impacts all over the world. Pacific Gas & Electric Co.'s stock collapsed due to the huge liabilities it incurred from California wildfires (and it filed for bankruptcy in January 2019, reached a $13.5 billion settlement with victims in December 2019 and is expected to see a $25 billion charge against earnings related to fire impacts). Philippine bond yields were affected by one of Asia's biggest-ever monsoons, and European car sales

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slumped in 2019 due to increased emission standards that cause manufacturing delays.

What's an investor to do?

On the positive front, according to BlackRock's *Global Real Assets Outlook 2019,* investors are bullish on real assets. In 2018, the real asset sector garnered $203 billion of cash inflows. For the second year in a row, infrastructure had an outstanding performance, with $85 billion raised. More than half of the flow of capital into infrastructure was in renewables and natural gas. On the opposite spectrum, coal and nuclear saw continuing declines.

This provides some interesting insight for real estate investors as they consider both how to play defense — mitigate risk and future-proof assets — as well as play offense by capitalizing on resiliency investments and piloting new products, technologies and investment profiles. Clearly, there is a trend toward low-carbon investments.

Real estate investing is about finding unique and profitable assets that, by their very nature, are anchored to a particular location, their value predicated on their stability and long-term economic prospects. But what happens when you add rising sea levels, cyclones, extreme heat, fire or drought? How do you manage the shift to low-carbon economies or work out where risk even lies? Suddenly, that favorable landscape changes, and you may be invested in an asset that's at risk of early economic obsolescence due to the changing regulatory environment, has been flooded repeatedly and isn't producing an income stream, or requires significant reinvestment lest it suffer a diminution in value and/or be a complete loss.

Play defense: due diligence and risk management

Given the interconnected and systemic nature of climate risks, investors will find it difficult to predict and precisely manage every possible impact on portfolios. Regardless of location, however, real estate investors and managers need to utilize better climate-risk information and technical capacity, drawing on credible topographic and neighborhood-level data and building mitigation strategies. Investors need to require more transparency from managers, along with stronger reporting and metrics.

Through the vetting process or annual review, every asset, and its risks and opportunities, is evaluated in a consistent and uniform way. Investors should now ask managers to expand the risk profile to incorporate climate-change exposure and mitigation measures. At the portfolio level, they should request a scan that identifies (1) exposure to longer-term temperature increases, rainfall and flooding, extreme heat and drought, grid exposure, corresponding business disruption and tenant impacts, alongside mitigation measures already in place either at the asset or community level; and (2) areas of regional property concentration. Quantification of the current exposure and evaluation of future capital expenditure needed to shore up resilience may affect underwriting and valuation of individual properties, and shift capital from one asset to another and one region to another.

As noted previously, the data set amassed by Four Twenty Seven is sizable — more than 1.1 million corporate facilities worldwide — and includes an assessment of climate-related risks for 73,600 properties owned by 350 listed REITs. The company's conclusion, after evaluating all of the REIT-owned properties, is 35 percent of these assets are exposed to climate hazards. The U.S. markets most exposed include Boston, Miami, New York City, San Francisco, and Fort Lauderdale, Fla.

As framed by Autonomy Capital hedge fund CEO Robert Gibbins, "Climate change is something we have to include in every single analysis, every investment." His fund, which places large bets on sweeping economic and political trends, is an industry standout, returning an annualized 12.85 percent net of fees since its November 2003 inception, compared with 8.9 percent for the S&P 500 Index. He believes climate change will be a major stress on many countries' economic stability. And for countries already facing social and economic turbulence, it's only going to get worse as the seas keep rising and other fast-moving developments appear. In more vulnerable locations, decades of progress can be wiped out overnight. "Little undermines development like disaster," U.N. Secretary-General António Guterres told attendees at a U.N. Session on Africa and climate change.

Play offense: resilience strategies

Capitalize on investment opportunities arising from technological advances, business model innovations, and policy evolution.

According to a new report from a global commission led by Microsoft Corp. founder Bill Gates, former U.N. Secretary-General Ban Ki-Moon and World Bank CEO Kristalina Georgieva — *Adapt Now: A Global Call for Leadership on Climate Resilience* — key investments in climate resilience are in the world's economic self-interest. The report calculates these could generate $7.1 trillion

in total net benefits, much of it in infrastructure investments. As has been shown in places such as Amsterdam, tailored and well-thought-out flood protection pays for itself. Although Amsterdam's exposure to a 100-year flood event is more than double that of Guangzhou, China — an estimated $83.0 billion versus $38.5 billion — it averages annual losses of only $3 million compared with $687 million in Guangzhou.

Public-private partnerships to invest in climate-resilient infrastructure make economic sense. Ports, roads, power, sanitation, sewer and communications systems are all examples of infrastructure assets at risk from climate change. Climate-proofing existing infrastructure and building new climate-resilient infrastructure make for solid, long-term investments. The low-carbon transition will shape the profile of infrastructure investment in multiple ways. In the energy sector, for example, BlackRock's research shows investment in renewables is likely to accelerate. A mapping of physical and community risks will likely shift development patterns, and the type and location of roads, sewers and other community assets.

As it relates to sea-level rise, three main strategies exist at the asset or regional level. The first, hard engineering, involves projects designed to keep water out, such as sea walls and storm-surge barriers. Second is green or nature-based solutions — restoration of mangroves and salt marshes, permeable pavement, dual-purpose landscape and land-use design. And third is adaptation and resilience, such as moving generators to higher floors, "managed retreat" and relocation.

For investors, climate risk presents both a material and urgent risk, certainly greater and more immediate for some than others. We have to make the assumption that without immediate, substantive and comprehensive action, however, the world will continue hurtling toward a future that is warmer and riskier for all. To ensure a thriving and resilient real estate economy, to meet our fiduciary requirements, we must couple comprehensive and holistic data analysis with key investments in technology, resilient buildings and infrastructure, as well as support low-carbon regulation. We are rapidly heading to a carbon-constrained world. A shift of this magnitude will be a huge driver of innovation and opportunity. ❖

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