



THINKSPACE

PERSPECTIVES ON

Sustainability and Investing

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CLIMATE CHANGE – A RISK MANAGEMENT ISSUE

Climate change is a complex and poorly understood problem, yet I believe it to be one of the most relevant investment issues we will face over the next several decades. Because of the immense uncertainty around how our ecosystems will be impacted by increasing greenhouse gas levels – as well as how government policies and economic systems will adapt – climate change is fundamentally a risk management issue.

Given this perspective, there are four insights from risk management that should guide our approach to addressing climate change broadly:

- Risk management requires consideration of worst-case scenarios. Considering only the “expected path” of climate evolution ignores possible extreme outcomes. Not surprisingly, a well-defined worst-case scenario doesn’t exist. So, we often use the phrase, “extreme, but plausible,” to provide a common sense understanding of what we are describing. In the climate space, many are averse to thinking about plausible extreme scenarios, but without this context, we fool ourselves into assuming we know what the future holds.
 - The purpose of risk management is not to minimize risk, but rather to price it appropriately. The role of a risk manager is not to reduce risk, but rather to identify, quantify and ensure ample compensation from the risks being taken. The fundamental problem as it pertains to climate is that this risk is not currently priced appropriately.
 - Time is a scarce resource. Given enough time, almost any problem can be solved. Yet, a risk management problem can quickly turn catastrophic when we run out of time. With climate, the reality is that we do not know exactly how much time we have. From a risk management standpoint, this makes the problem extraordinarily urgent. While not pricing the risk, we are wasting time.
- Risks are the metrics we create, but uncertainty is what we manage. Economists make a distinction between risk and uncertainty. Risks are model-based metrics that we create – like Value at Risk or Standard Deviation – but what we manage is uncertainty. Markets don’t behave according to models and neither does a complex system like climate. There is tremendous uncertainty around possible outcomes from the experiment we are conducting on the Earth. We have to recognize that our models are only approximations, our estimates of risk are unclear, and we must err on the side of caution.

CARBON PRICING IS THE APPROPRIATE SOLUTION

Greenhouse gas emissions – largely CO₂ – are a classic externality where the cost in terms of pollution and global warming is not born by the emitter but rather by the entire planet. The appropriate solution is to “price carbon” by charging emitters for the quantity of CO₂ they release into the atmosphere. Carbon pricing is achieved through carbon taxes or cap-and-trade programs.

When thinking about the price of carbon, most traditional economic models suggest the optimal policy has a smooth trajectory with a low initial price that gradually increases over time. Instead, my colleagues and I believe the appropriate policy is a high price today – a price that is high enough to be confident we can solve the problem – to address the uncertainty about what the future may bring.

I call this optimal path for carbon pricing a “slam-on-the-brakes” scenario. Because an uncertain future with plausibly extreme scenarios is coming, we need to quickly slow the rate at which we are filling up the atmosphere with carbon emissions. This is not a moment to ease on the brakes.

We need an immediate, strong, global pricing of carbon in order to drive a rapid transition to a net-zero economy. Only in the last decade have some

governments begun to price the embedded risk in carbon emissions. Going forward, I believe we will see a rapidly accelerating increase in carbon pricing globally as governments and key stakeholders, including in the U.S., recognize the urgency of action and will see how effectively carbon pricing works.

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Incentives already exist in most European countries, in California, and it is expected soon in China. If a globally harmonized pricing of carbon follows, investors will find themselves in a different world. Appropriate incentives will cause a phase-change in economic activity and valuations. The impact on valuations has already begun and will continue to be substantial; this is why I believe this topic is so relevant and urgent to investors today.

The risks of a rapid transition are underappreciated. I do not believe a dramatic increase in the price of carbon is what most investors are expecting, nor do I believe this scenario is accurately reflected in the valuations of climate-policy-sensitive assets. But the reality of climate change is now obvious, and the required rapid transition scenario will become more fully recognized in prices as it is acted upon because it is a risk-management imperative.

SUSTAINABILITY AND INVESTING

Investors should be highly concerned about the underlying policy uncertainty, and seek compensation for it accordingly. Yet, to date, investors are only beginning to address this risk comprehensively in their portfolios.

For some investors, the answer to recognizing this reality is to divest from fossil fuels, while others are switching to carbon-sensitive benchmarks or tilts based upon self-reported carbon footprints. However, I do not believe that investors have taken into account the broader risks that exist across their entire portfolio.

My view is that all asset classes and most economic sectors have exposure to the risk of a rapid economic transition to a low-carbon economy. Certainly fossil fuel company valuations are highly sensitive to this risk; many coal companies have already gone bankrupt. But there are many other companies and industries that will be impacted and whose business models or existing assets are also at risk of being stranded. In addition, I believe there are strong opportunities to generate additional return, as the transition towards a net-zero emissions economy also creates new technologies and business models.

In fact, I suspect that transitioning to a net-zero economy, adapting to the new climate reality while building a sustainable economy, and simultaneously sucking carbon dioxide out of the atmosphere at the required scale will be the investing themes of the next several decades.