



Can capital markets save the planet?



KPMG International

home.kpmg



Foreword

Capitalism holds the keys to addressing the long-term risks posed by climate change.

The transition to a low-carbon economy will require the talent, innovation and capital that only the private sector can provide.

To get there, and to achieve the goals set by the Paris Agreement in 2015, several complementary private sector-led projects are underway to align capital to those companies and capabilities that are driving progress.

The Sustainable Markets Initiative (SMI), chaired by His Royal Highness The Prince of Wales, brings together CEOs from more than 300 companies with more than US\$60 trillion in assets. Through industry- and country-specific roundtables, the SMI helps unlock sustainable business opportunities within and across industries and geographies.

The International Business Council (IBC) of the World Economic Forum (WEF) has engaged KPMG and the other Big Four accounting networks to help develop a set of universal Stakeholder Capitalism Metrics. A common set of metrics and disclosures allows companies across industries to demonstrate the progress they are making on a consistent basis, helping direct capital towards top performers. More than 100 companies have committed to reporting these metrics to date.

The Glasgow Financial Alliance for Net Zero (GFANZ) brings together over 160 financial firms, representing more than US\$70 trillion in assets, to accelerate the transition of the global economy to net zero emissions by 2050 at the latest. GFANZ serves as a forum for strategic coordination among leading finance institutions who have made their own net zero commitments, and will help to mobilize trillions of dollars to build a global zero emissions economy.

As discussed in this report, though, while the private sector has the capital needed to transition to a low-carbon economy, we can accomplish more in partnership with the public sector.

Governments around the world can help accelerate the flow of capital in several ways. That includes helping to drive the ongoing convergence of non-financial disclosures; establishing clear market signals, and in some cases mandates, to incentivize investment in a low-carbon future; and working with multi-lateral development banks (MDBs) to create a stable foundation for long-term private sector investment around the world.

Momentum is building behind all of these initiatives. And there's much more that can be achieved.

The United Nations COP26 meeting in Glasgow creates an important opportunity for private- and public-sector leaders to deepen commitments and collaborations.

The independent assessment in this report will help inform the debate at COP26 and thereafter, providing a realistic assessment of the barriers to capital flows today, and the opportunities to build more robust markets around decarbonization in the future.

Working together, companies, investors, governments as well as consumers can take meaningful steps on the path to a more sustainable economy. And this timely report illuminates that path for us.

Brian Moynihan

Co-Chair Sustainable Markets Initiative

Chairman and CEO Bank of America

Chairman World Economic Forum International Business Council



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Authors' Acknowledgments

This report is a joint effort, involving KPMG International, CREATE-Research, and CAIA Association.

It examines in detail the role of capital markets in the transition to a low-carbon world. The report investigates the experiences to date of climate investing and the changes we can expect in the next three years, as we move towards a new investment paradigm.

Our foremost thanks go to some 90 institutional investors, alternative investment managers, long only managers and pension consultants in 20 countries in all the key regions, who participated in the research on which this report is based.

We would also like to offer our special thanks to those CEOs, CIOs and board directors who participated in our structured interviews. Their insights and foresights helped to produce a clear vision of the future of their industry and our planet.

Special thanks also go to the members of the project team, editorial board and other colleagues around the world who helped us in carrying out this research, in particular Meredith Evans and Marsha Toomey from KPMG International, Staci Scott from KPMG Islands Group; and John Bowman, Joanne Murphy and Jack Wu from CAIA Association.

At CREATE-Research our special thanks go to Anna Godden, Dr. Elizabeth Goodhew, Naz Rajan and Lisa Terrett for their excellent support towards survey design, data analysis and report preparation.



Amin Rajan
CEO, CREATE-Research



Anthony Cowell
Partner, KPMG Islands Group



William J. Kelly
CEO, CAIA Association



Editorial board

Richard Threlfall (KPMG in the UK/Global)

Mike Hayes (KPMG in Ireland/Global)

Tomas Otterström (KPMG in Finland and Sweden)

Jim Suglia (KPMG in the US)

Darina Barrett (KPMG Global)

Andrew Weir (KPMG Global)

Tania Carnegie (KPMG Global)

Pat Woo (KPMG in China/Global)

Ben Blair (KPMG in the Cayman Islands)

Arnaud Van Dijk (KPMG Islands Group)

Jodie McTaggart (KPMG Islands Group)



1

Executive
summary



2

Why progress
towards
climate pricing
has been slow



3

The next giant
leap forward:
areas of
progress



4

Climate investing
journey: the
next phase



Contents



Why progress towards climate pricing has been slow

22

Slower policy actions

23

Today's capitalism struggles with the long term in the absence of clear incentives

26

Data remain the Achilles' heel

27



Photo credit: Matjaz Krivic Photography

Climate investing journey: the next phase

39

Going from risk to uncertainty

40

Seeking early mover advantage

41

Scaling up asset coverage

44

Putting stewardship at the heart of manager selection

49

Executive summary

5

Key takeaways —The Big Five

6

Alarm bells

6

Warning for the financial system

7

Aims and research method

8

Survey highlights

9

Detailed findings

10



Photo credit: Matjaz Krivic Photography

The next giant leap forward: areas of progress

30

Curbing fossil fuel demand

32

Innovations in alternative energy

34

Advances in data infrastructure

36



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



1

Executive summary



1

Executive summary



2

Why progress towards climate pricing has been slow



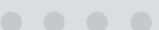
3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Key takeaways — The Big Five

- Addressing climate change in investing is now predicated on a new belief about value creation. Capital markets have been slow to price in this important shift in the absence of clear policy signals.
- The invisible hand of markets needs to be matched by the visible boot of governments. So far, a green portfolio does not equate to a green planet. There is currently no clear line of sight between climate investing and its impacts.
- The combination of the climate agenda of the new administration in the US and COP26 is starting to provide the policy clarity that markets need to assess the risks and opportunities associated with climate change.
- As a result, the pricing process of capital markets is braced for stronger tailwinds from progress in three areas of public policy: carbon pricing, innovation in alternative energy and mandatory data reporting.
- Success will also require the enhancement of current practices in the investment value chain in line with the new belief. Stewardship is the new linchpin that is as essential as asset allocation decisions, if not more so.

Alarm bells

It's now or never; no ifs, no buts.

That is the 'code red' warning in the sixth report from the Intergovernmental Panel on Climate Change (IPCC), published in August 2021.

In it, United Nations (UN)-backed scientists warn that climate change is underway and its pace and severity will be determined by the choices and behavioral changes humans make. The last decade was hotter than any other period in the previous 125,000 years, attributable to rising greenhouse gas (GHG) emissions — principally carbon dioxide, methane and nitrous oxide — primarily released from the combustion of coal, oil and gas.

Although these fossil fuels have powered dramatic economic progress in the global economy over the past hundred years, they have also increased the concentration of CO₂ in the atmosphere, causing global warming. This, in turn, has contributed towards drought, famine, rising sea levels, extreme weather events, flash floods — all causing property damage and severe dislocation within communities, and all with increasing frequency.

That is why the 2015 Paris Agreement is a major landmark. For the first time in history, almost every nation came together to agree a set of pre-emptive policy

measures to limit the global temperature rise to below 2°C from pre-industrial levels, and to pursue further efforts to limit it to 1.5°C by 2050. These targets require a fundamental transformation of the global economy.

But the world is way off track. On current plans, it is expected to breach the 1.5°C ceiling within 12 years and to hit 3°C of warming by the end of the century, according to the IPCC report.



Capital markets are not pricing in climate risks but they are pricing in governments' reaction to them, in anticipation of things happening or not.

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Warning for the financial system

Progress has been piecemeal, especially as governments have been preoccupied with rebooting their economies since the Covid-19 outbreak.

Yet, alarm bells are ringing louder than ever, as evidenced, for example, by a recent far-reaching report titled *Managing Climate Risk in the US Financial System* from the US Commodity Futures Trading Commission:¹

“Climate change poses a major risk to the stability of the US financial system and to its ability to sustain the American economy.... This reality poses complex risks for the US financial system. Risks include disorderly price adjustments in various asset classes, with possible spill-overs into different parts of the financial system, as well as potential disruption of the proper functioning of financial markets.”

Under any policy scenario, the private sector is ultimately expected to lead any transition to a low-carbon world. In particular, the global investment industry — currently professionally managing around US\$100 trillion of capital — carries a huge weight of expectation on its shoulders.

The industry is enjoined to play a pivotal role in mitigation and adaptation, redirecting capital away from fossil fuels towards renewable energy, decarbonization and innovations such as carbon capture and storage.

This capital reallocation process has continued apace, according to the 2021 survey from the Global Sustainable Investment Alliance.² It shows that sustainable investing held US\$35.3 trillion of assets, equivalent to 35.9 percent of global professionally

managed capital. The dollar amount was up 33.4 percent on the 2018 level, with Canada and the US recording the fastest rise. The Paris Agreement is seen as a key driver.

However, despite all that money in motion, there are widespread concerns that capital markets are not pricing in climate risks, while investors continue to target a double bottom line: doing well financially and doing good environmentally.

Many are as yet unsure as to whether the good financial returns they have notched up so far reflect a bandwagon premium simply fuelled by a huge wall of capital in this era of super-easy monetary policies.



There has been an unprecedented global surge in climate-related disasters since 2019. Wet places are getting wetter and dry places drier.



Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Aims and research method

It's time to do a stock-take on the experiences to date of early adopters of climate investing and the changes they foresee over the next three years. The subject is timely and pertinent for two related reasons.

First, the rising frequency and severity of disasters worldwide in this century could potentially trigger non-linear and irreversible financial losses. Yet, societies are neither prepared to slow the rate of climate change, nor happy to live with it.

Second, however, three recent events have served to highlight the importance of managing climate risks: Covid-19, which has exposed the uneven balance between humans and their planet; a new administration in the US with a green agenda; and the Conference of Parties (COP) 26 in Glasgow in November 2021.

Indeed, this latest annual UN event is widely seen as upping the ante, since all the countries in the Paris Agreement are shortly required to submit their five-yearly plans for raising their 'Nationally Determined Contributions' (NDCs) towards cutting carbon emissions.

Hence, we have conducted an interview survey, involving structured in-depth discussions with CEOs, CIOs and senior investment strategists in a cross-section of 90 endowments, pension plans, long-only asset managers and alternative asset managers with a collective AuM of US\$34.5 trillion across 20 jurisdictions. The majority of them are early adopters of climate investing.

We explored four key issues with each of them:

- What is the current state of their organization's progress with respect to climate investing?
- Based on their organization's experiences so far, are global capital markets adequately factoring climate risks in securities prices?
- Are capital markets likely to accelerate the pricing process, in response to Covid-19, the new US administration and COP26?
- Over the next three years, which asset classes are likely to advance further in pricing climate risks?

The rest of this section gives the survey highlights, followed by detailed findings that support the key takeaways.

Survey respondents by geography and total AuM

Australia	New Zealand
Belgium	Norway
Canada	Sweden
Cayman Islands	Switzerland
Denmark	The Netherlands
Finland	United Kingdom
France	United States
Germany	
Hong Kong (SAR), China	
India	
Ireland	
Italy	
Japan	

AuM
(US\$ trillion)

34.5

Results presented in this report are insights derived from our interviews, except when referenced with an external source. Monetary amounts are all in US dollars, unless indicated otherwise.



In Sweden, the drive towards a green society is evident with carbon-free steel initiatives and the creation of data centers near hydro power.

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Survey highlights

(Percent of survey respondents)



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Climate investing rests on a new investment belief

74%

Already have a mature approach to climate investing or are in the process of implementing one via active management

78%

Believe that active stewardship is the linchpin of progress towards a greener planet

70%

Target good risk-adjusted long-term returns from climate investing

54%

Target a double bottom line: doing well financially and doing good environmentally

Capital markets are slow to price in climate risks

14%

Believe that markets are pricing in climate risks in public equities with a further 33% believing that they are doing so only selectively

11%

Believe that markets are pricing in climate risks in alternative investments with a further 28% believing that they are doing so only selectively

8%

Believe that markets are pricing in climate risks in bonds with a further 25% believing that they are doing so only selectively

70%

Attribute this slower progress to weaker policy signals from governments and regulators worldwide

Further progress toward a greener economy is likely

84%

Rate as 'high' or 'medium' the likelihood that the new US administration will drive concerted international efforts

82%

Rate as 'high' or 'medium' the likelihood that COP26 will drive concerted international efforts

65%

Rate as 'high' or 'medium' the likelihood that Covid-19 will drive concerted international efforts

73%

Anticipate fresh policy momentum towards 'clean' energy standards

Markets will advance further over the next three years

72%

Say 'yes' or 'maybe' to the prospect of further progress in factoring climate risks in securities prices

81%

Anticipate that equities will progress towards pricing climate risks

74%

Anticipate that alternative investments will progress towards pricing climate risks

61%

Anticipate that bonds will progress towards pricing climate risks

Detailed findings

Further information on each of the report's five takeaways is presented below.

1 Climate change heralds the birth of a new investment belief

a. Key risks

One or more of these four risks currently feature in our survey respondents' investment processes. They are:

- *transition risk* from legacy assets becoming obsolete due to changing consumer preferences (cited by 65 percent of our survey respondents in Figure 4.1)
- *physical risk* from extreme weather events that damage physical infrastructure and land use (51 percent)
- *litigation risk* as third parties seek compensation from collateral damage (36 percent)
- *systemic risk* as the prices of financial assets do not reflect climate risks (22 percent).

A significant rise is expected in the inclusion of these risks in investment portfolios over the next three years, since these risks are seen as pervasive. They affect all asset classes, industries and economies. Worryingly, physical and transition risks may well unfold in parallel,

compounding the challenge. Climate change is a rolling phenomenon, in which these risks could accumulate to the point where they degrade the capacity of the financial system to serve the economy.

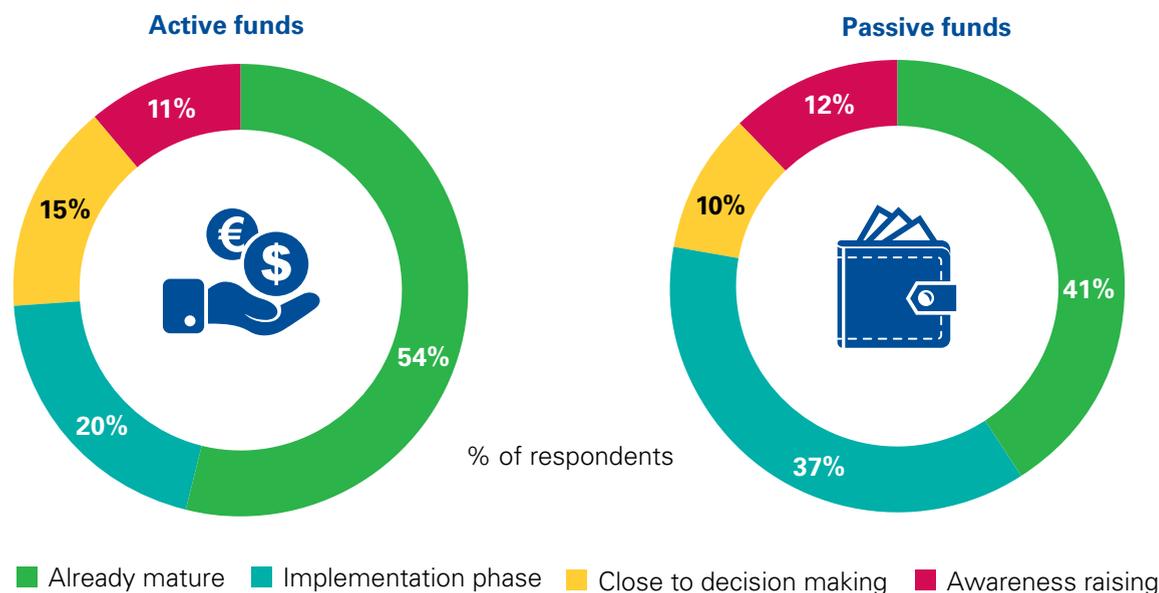
Thus, addressing climate change in investing is about mitigating these risks by, for example, reducing reliance on carbon-intensive industries, developing thematic climate-related investments, and enhancing the climate resilience of current infrastructure investments.

b. Current journey

Four stages are discernible in our respondents' current journey in pricing in climate risk. The majority are in the final two stages: 'implementation' and 'already mature' (Figure 1.1). But around a quarter are still at the early stages: 'awareness raising' or 'close to decision making'. This applies equally to active as well as passive portfolios.

Overall, they aim to spot opportunities as much as manage risks as we advance towards a cleaner, greener economy. Electrification and decarbonization of the global economy will be a major disruptive force, giving rise to new industries and new business models that will reshape the industrial and agricultural landscape.

Figure 1.1: In which stage is your organization currently with respect to pricing climate risk in your two broad investment portfolios?



Source: KPMG/CAIA/CREATE-Research Survey 2021



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Climate risks can play out in unprecedented ways in future.

Interview quote

As a result, our respondents are climbing the curve of adaptive learning. This, in the strong belief that a singular focus on financial returns when investing in a company is no longer enough if its business practices both negatively affect the environment and are affected by it (Case study 1a). Our interviews revealed that one of the weaknesses of today's investing is that it is overly influenced by Modern Portfolio Theory, which ignores negative externalities.

More than ever, so the belief goes, long-term economic value creation now also rests on social and human capital — as shown all too vividly by Covid-19. Moving early to anticipate far-off threats to existing business models could turn them into opportunities. Investing by looking in the rear-view mirror means missing all the future upsides. This is duly reflected in the goals that our survey respondents are targeting.

As Figure 4.2 shows, in their climate investing, 70 percent of our respondents now target good risk-adjusted long-term returns, 54 percent target a double bottom line — doing well financially and doing good environmentally — and 66 percent target a more defensive portfolio that minimizes fat-tail/far-off risks.

c. Key avenues

These goals are being pursued via one or more of four avenues that aim to promote, advance and accelerate the decarbonization drive (Figure 1.2). The first three mentioned below are directly rooted in the investment process; the last one (stewardship) complements it and is addressed in subsection d below.

Taking them in turn, the most widely cited avenue is the exclusion of carbon polluters from the investment portfolio (62 percent). Such negative screening aims to deprive polluters' access to capital.

In contrast, the integration of climate risks in the investment process seeks so-called transition alpha by selecting companies that are either likely to reduce their carbon footprint by reshaping their business models or that already have a superior environmental track record that is enhancing business performance (56 percent).



Case study 1a: Birth of a new investment belief

There is a responsible investment agreement among Dutch pension plans. Whole portfolios, apart from sovereign bonds, are targeted at climate action. Regulatory requirements aside, climate change has forced a shift in our own investment beliefs that is shaped by adaptive learning.

First, global warming is happening and is approaching an irreversible tipping point. This presents risks and opportunities. Their scale and timelines are hard to predict because there are too many interdependencies. Things will evolve and we shall adapt as companies are exposed to a vastly different world to the one they have known.

Second, as owners of shares in a company, we are not held responsible for its actions. But that does not absolve us of our moral responsibility when its activities cause uncompensated harm to wider society. As 'universal owners' we have stakes in thousands of companies, so we are indirectly responsible for their carbon pollution. Divesting our shares does not reduce it.

So, we see stewardship as a powerful tool. It means active engagement on climate and other strategic issues in order to improve the quality of our alpha and beta assets. Using the Global Reporting Initiative Standards, we focus on narrative disclosures that highlight real-life stories of the challenges, actions and outcomes behind the dry numbers in regulatory filings. We are acting as long-term owners of businesses, rather than holders of paper assets.

A Dutch pension plan



Our journey in climate investing started well before the Paris Agreement.

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress

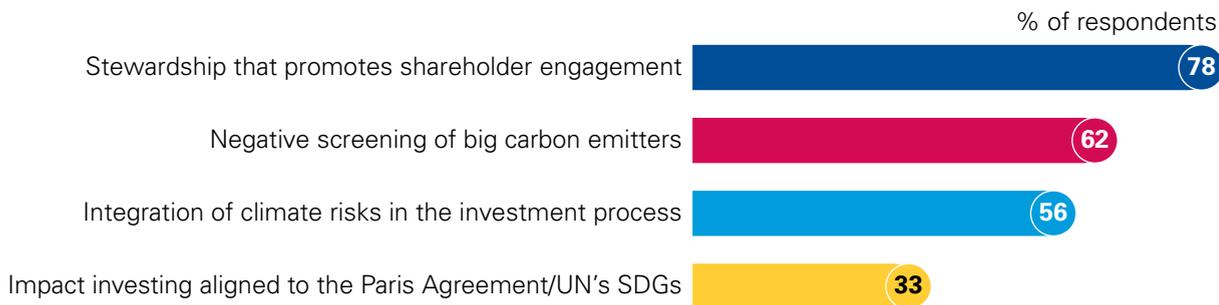


4

Climate investing journey: the next phase



Figure 1.2: What avenues does your organization use when investing in the natural environment?



Source: KPMG/CAIA/CREATE-Research Survey 2021

Finally, 33 percent of our respondents in Figure 1.2 have advanced on their climate journey to the point where their investments are overtly targeting a measurable impact on the environment. No longer confused with philanthropy, impact investing is about more than shaking the green money tree. For long, it had been confined to niche areas like private equity and debt circles as well as the project financing vehicles of development banks in private markets. In the past two years, however, it has extended to public markets as well, involving green bonds and longer-horizon thematic equities.

This trend, in turn, is underpinned by the rising prominence of the three pioneering concepts of climate investing: materiality, intentionality and additionality.

Materiality assesses whether climate change is material to a company's business performance. Intentionality appraises whether it intends to mitigate and adapt and also speaks to the intention of the investor. Additionality assesses whether its actions deliver tangible measurable outcomes over and above what would otherwise be achieved.

The primary sources of additionality are the application of leading technologies or innovative business models, as well as the delivery of a company's products to underserved populations. As such, additionality means investing in disruptive innovations that would meet essential environmental and social needs that remain unmet, despite strong demand.

d. Rise of 'universal owners'

Overlaying the previous three avenues of climate investing is stewardship. It focuses on the climate transition pathways via shareholder engagement (78 percent in Figure 1.2). It is about managing assets prudently by engaging directly with investee companies via exercising voting rights, filing or co-filing shareholder resolutions, having a say on lobbying activities and fostering year-round dialogue on impact issues and value creation. Under the investment belief mentioned earlier,

this form of shareholder activism is the new linchpin: it is as consequential as asset allocation decisions, if not more so. The latter could easily reshuffle asset ownership between investors without tackling environmental damage from corporate action. Specifically, the divestment of fossil fuel producers from pension portfolios does not starve them of capital. Most feel that engagement and advocacy is the only effective approach for true change. This is in the belief that those who are part of the problem can also be part of the solution. Policy makers need to find pathways to promote and incentivize their transition to a net zero carbon future.

Thus, stewardship is based on the long-term mindset of ownership and advocacy, in line with the concept of 'universal owners', which has gained traction lately. They believe that they 'own' the negative externalities caused by their portfolio companies due to the sheer depth and breadth of their holdings in all asset classes and regions. Such 'paper' holdings do not negate their fiduciary responsibility to wider society.

They are seeking ways of deploying capital more imaginatively by joining with their like-minded peers in global networks like Climate Action 100+, the Net Zero Asset Owner Alliance, and the UN Principles for Responsible Investment to name a few. Their ultimate goal is to promote a better, more stable global economy and improve the quality of their alpha and beta returns alike by driving positive change, as shown in our 2020 report 'Sustainable investing: fast-forwarding its evolution'.

“As a universal owner, 100 percent of our assets seek to factor in climate risks via active engagement.”

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



2 Capital markets have been slow to price in climate risks

Our survey respondents have advanced on their climate investing journey in the fundamental belief that it is essential to look beyond the blind spots that come from short-termism and detect longer-term risks that are unfamiliar to the conventional risk models based on past price behavior.

That has been a key lesson from history. Mega trends, such as globalization and the rise of emerging markets, came disguised as continuity. They were hard to spot at the time, but have been hugely consequential in hindsight; such is the case with climate investing.

The zeitgeist is shifting.

a. The scorecard

Capital markets are now at an initial stage in pricing climate risks in the three broad asset classes (Figure 1.3).

Progress is more evident in public equities than the rest. The stewardship opportunities they offer are now believed to be indispensable to value creation in the transition to a low-carbon future.



Capital markets can't easily detect risks and opportunities, until they are clear on how governmental actions will create hard incentives as well as sanctions.



Interview quote

Green bonds have been at the vanguard of progress in the bond space. They provide investors with transparency on the use of proceeds and engagement opportunities usually reserved for equity holders.

In alternatives, progress is evident in infrastructure, real estate and private equity, where custom-built mandates have linked fees with green outcomes.

Overall, climate pricing is more evident in the energy sector and least evident in capital intensive projects with a long time horizon to commercialization. The latter are slow to attract capital for lack of viable projects.

The fact remains that a majority of our survey respondents believe that capital markets are not currently pricing in climate risk, implying a misallocation of capital.

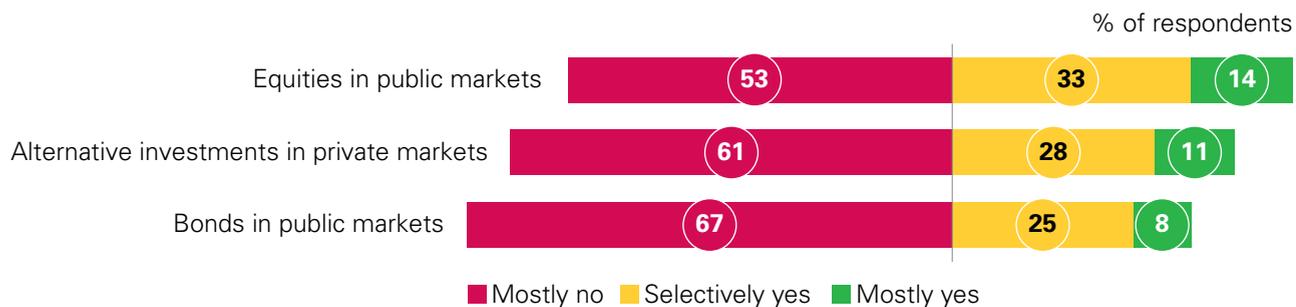
The key barrier is the inexact nature of climate science and its related modeling, and the resulting effect on GDP. No record or experience exists of how our economic and financial systems will react to those changes.

To compound the problem, policy pathways from governments and regulators have been few and far between to help investors to assess the opportunities and risks inherent in climate change. Hence, market failure as well as market inefficiency have been inevitable since the Paris Agreement.

Failure occurs as governments do not currently penalize unsustainable business practices that don't affect a company's earnings. Inefficiency, in turn, results when markets fail to reward a sustainable company unless and until it delivers tangible bottom-line benefits on its decarbonization journey based on the current accounting rules.

In both cases, the root causes fall into three neat sets described below, with the first two signaling market failure and the third signaling market inefficiency.

Figure 1.3: In your experience, are global capital markets adequately factoring climate risks in securities prices currently?



Source: KPMG/CAIA/CREATE-Research Survey 2021

b. Policy inertia

Although governments and regulators recognize that environmental pollution is the biggest negative externality in history, they have been slow to respond. Since the Paris Agreement, policy measures on carbon pricing — covering taxes and emissions trading based on the principle of ‘let polluters pay’ — have been patchy, signaling virtue far more than value. Carbon taxes have been set too low, according to 68 percent of our respondents, while emission trading systems have been too generous to polluters (65 percent), as shown in Figure 2.1.

Both have had limited success in enticing corporate emitters into palliative action and consumers towards fossil fuel alternatives. As yet, no jurisdiction has set rules that properly internalize environmental and social costs into companies’ financial reporting — in ways that can assist the price discovery of climate risks.

For their part, as Figure 2.1 also shows, pension regulators have been slow to react in tackling climate risks in pension portfolios (70 percent), as have banking regulators in curbing lending to environmental polluters (57 percent).

Hence, market-based incentives and investments in low-carbon technologies are evolving only slowly. There is no uniform carbon price in the current generation of emissions trading systems. Only 22 percent of carbon emissions are priced, according to a 2021 World Bank Report.³ Yet they remain vital in tackling climate change.



In the US, there is no environment in which ESG investors are incentivized.

Interview quote

Mature democracies have had to contend with yet another impediment: fickle public opinion. Educating the public about the perils and promise of climate change is critical. People worry about global warming but are unwilling to make the sacrifices required to tackle it unless they see quick benefits.

Carbon pricing versus voters’ wallets continues to remain a defining issue today.

In the meanwhile, the reality of the unfolding climate crisis is brought to bear by events such as recent torrential rainfall in China and Germany, and raging forest fires in Australia and California. These continue to be seen as one-off events with V-shaped recoveries, instead of the harbinger of a gathering crisis. What is needed is heightened public awareness that climate change is the collective problem of every nation on this planet. No one is immune (Case study 1b).



Case study 1b: The average person doesn’t know what COP26 is

We are starting to show interest in climate risks and the opportunities they present.

We don’t know if markets are yet pricing in climate risks. Oil and gas companies are, in fact, being discounted to varying degrees. But there is skittishness in the market that indicates that investors are unsure. Markets constantly seem to be reframing their views.

Also, thus far, there is inconsistency between those already hit by climate change — via rising sea levels, hurricanes, wildfires, droughts — and those who are not. Until the effects are felt more widely, change will be slow. The change in administration in the US is less important than the effect of the media in shaping public opinion positively towards the Biden agenda and the critical role of COP26. People need to be convinced that these are transformational initiatives that will improve their daily lives.

Encouraging the right behaviors will require carbon taxes and subsidies for renewables. But the overly partisan approach in the US remains a big hurdle. As an endowment, we have a 25-year horizon versus the four years of a presidential term. For their part, regulators operate in a different timeframe depending on who’s in office. You need consistent policy, since price signals are super important. But these are not easy to detect in today’s divisive political environment in the US.

A US university endowment fund



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





We already know which part of Sydney will be submerged by 2080. Yet there is no policy response because it's well beyond the electoral cycle.”

Interview quote

c. Quarterly capitalism

Capital markets tend to put short-term profits over long-term value creation, according to 71 percent of our respondents in Figure 2.2. That prevents them from pricing negative externalities, like climate change (67 percent). Modern capitalism has a severe problem with anything long-term, thanks to the tyranny of the discount rate.

What happens, say, 25 years out seems to fall outside the decision horizon of almost all key decision makers: their incentives are typically aligned to shorter-term financial targets (64 percent in Figure 2.2).

d. Lack of credible public metrics

The final set of causes reflects the old refrain: ‘You can’t manage what you don’t measure’. Progress has been slower in creating credible decision-useful public metrics on the impact of climate change on the corporate sector, according to 75 percent of our respondents (Figure 2.3). Nor have there been legal requirements for companies to report their climate risks (76 percent). Until the recent arrival of the European Union’s taxonomy for sustainable activities, few climate change taxonomies were in operation providing a robust framework and consistent definitions and disclosures.

Hence, investors are gradually improving their understanding of climate risks on their learning journey. For the pension plans in our survey, there are other unique factors to be taken into account apart from the external barriers mentioned above.

They include, among others, their customized strategic benchmarks, their funding status, the time profile of their liabilities and, above all, the fiduciary duties of the board of trustees under the prevailing law. After all, their beneficiaries need their promised retirement nest eggs, as reflected in sponsor covenants as well as portfolio benchmarks. Trustee boards have to weigh

their contractual obligations against long-term threats from climate change.

Hence, markets can’t seem to find green direction by themselves. Nor does a green portfolio necessarily equate to a green planet. As hopes have run ahead of expectations, the result has been greenwashing: the repurposing of old funds with a green label as a marketing gimmick (50 percent in Figure 2.3).

But the winds of change are evident.

3 A greener economy beckons

A confluence of three recent events is set to release stronger pricing signals for capital markets (Figure 1.4).

a. The US is back in the Paris Agreement

The likelihood that the new US administration’s green agenda will drive a concerted international effort towards tackling climate change and send positive signals to capital markets is rated as ‘high’ by 36 percent of our respondents, ‘medium’ by 48 percent, and ‘low’ by 16 percent.

The US is back in the Paris Agreement with a package of policy proposals that center on three key tools for reducing climate risks.

One is the adoption of a clean electricity standard. It requires power companies to gradually ramp up the amount of electricity they generate from wind, solar and other sources until they’re no longer emitting CO₂.

The second tool is the setting of the national goal of half of the new cars sold in the US to be powered by battery or other no-emission technology by 2030. The third tool is the updating of the social cost of carbon. It measures the benefit, in monetary terms, of reducing CO₂ emissions.



We should have the climate information at our fingertips, as with other financial data.”

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress

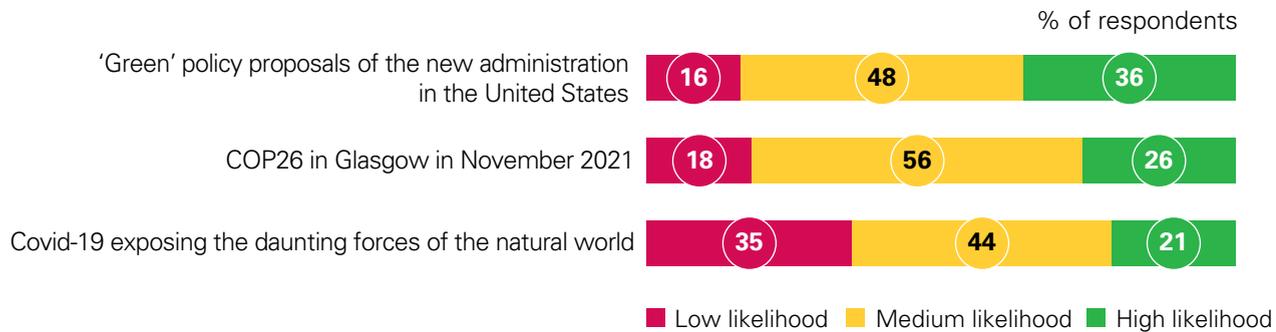


4

Climate investing journey: the next phase



Figure 1.4: How likely is it that three recent seminal events will drive concerted international efforts in incentivizing capital markets in pricing climate risks?



Source: KPMG/CAIA/CREATE-Research Survey 2021

The US Federal Reserve has now joined the Network for Greening the Financial System, comprising 83 central banks and financial supervisors who aim to scale up green finance by factoring climate risks in their supervision of commercial banks.

On the investment side, the US Department of Labor is now revising the fiduciary remit of the nation's pension plans, now managing 62 percent of US\$52 trillion of global pension assets, according to the Thinking Ahead Institute.⁴

Under the old remit, not only were environmental and social issues considered to be outside plans' fiduciary remit, they were often seen to be in conflict with financial returns — especially when such returns were measured over shorter horizons.

For now, though, the three largest regions on the climate front line — China, Europe and the US — are largely aligned. Their combined leverage is set to accelerate and amplify current momentum.

b. COP26 is upping the ante

The likelihood that COP26 will drive a concerted international effort toward tackling climate change and send positive signals to capital markets is rated as 'high' by 26 percent of our respondents, 'medium' by 56 percent, and 'low' by 18 percent in Figure 1.4.

Ahead of COP26, countries have been enjoined to revise their NDCs and announce their policy measures. This is a decisive moment for the Paris Agreement and its ability to make countries converge towards the long-term objective of keeping the rise in global temperature to well below 2°C.

Concerted action on an unprecedented scale is vital for a simple reason: the global temperature responds to the overall level of carbon dioxide in the atmosphere, not to any single country's contribution to it.

If one country drastically reduces its own emissions but others do not, the result is the 'free rider' problem writ large. Thus far, national vested interests have tended to dilute actions to the lowest common factor, as shown by the latest assessment from the Climate Action Tracker.⁵

In particular, growth engines in emerging economies have long been fired by coal and seek to raise living standards to Western levels. They need huge financial incentives from the developed economies to make significant strides in addressing climate change.

Lately, China has undertaken to refrain from financing and building overseas coal-fired power stations. For its part, the US has pledged to double its share of climate finance for developing economies.

“COP26 needs a bigger stage that creates healthy competition between governments and companies to achieve a low-carbon future.”

Interview quote

- 
- 
- 1
 Executive summary
- 2
 Why progress towards climate pricing has been slow
- 3
 The next giant leap forward: areas of progress
- 4
 Climate investing journey: the next phase

COP26 is seen as vital in breathing life into carbon pricing now stuck in the realm of evangelism. Crucially, our respondents believe that this requires a global accord — for example, on phasing out coal completely and ending all fossil fuel subsidies to reach the ultimate goal of net zero emissions by 2050. Hence, COP26 is likely to amplify the transmission mechanism between climate change and value creation by signaling progress on one of the thorniest issues: stranded assets, especially in emerging economies.

Skeptics among our survey respondents have low expectations of COP26. Diplomacy always goes to the wire, they say. It is easy to sign on the dotted line but actions must speak louder than words.

Pragmatists, on the other hand, believe that to achieve a concerted global movement, nations have to move more slowly. Desirable as it is to move in lock-step, it would be a miracle to achieve, given the number of countries involved and their conflicting priorities, as argued in Case study 3b in Section 3. Besides, governments can no longer afford to prevaricate: better to plan for an orderly transition now than slam the brakes on when it's almost too late. Only time will tell who is right.

c. Covid-19 will spark a green recovery

The likelihood that Covid-19 will foster a concerted international effort on tackling climate change and send positive signals to capital markets is rated as 'high' by 21 percent of our respondents, 'medium' by 44 percent, and 'low' by 35 percent in Figure 1.4.

Those who cited 'high' or 'medium' believe that the unprecedented peacetime policy stimulus in the wake of the pandemic has come with strong shades of green.

More importantly, the pandemic has delivered a more interventionist and muscular state, able and willing to shift up a gear on long-neglected challenges like rising economic inequalities and accelerating environmental degradation.



Our best hope is that the pandemic and climate action become part of the same story — one of human ingenuity in the face of acute adversity. ”

Interview quote

On the other hand, those who cited 'low' believe that the pandemic has been a real eye opener on social rather than environmental issues. If anything, it has been a distraction for policymakers, obliging them to focus on reducing unemployment as quickly as possible with no regard to the nature of the jobs created.

Measures that selectively encourage the creation of green jobs have thus far been few. They may only materialize when big infrastructure projects get the go-ahead. These could orient economic growth in a green direction, improve living standards, and build the necessary resilience while global warming continues.

Thus far, the urgent has got in the way of the important in the policy response. Catalysts for change can be short lived when climate actions collide with the needs of daily life. But the three transformative forces described above could potentially generate the signals that capital markets need (Case study 1c).

4 The pricing process is braced for stronger tailwinds

In the light of the developments described above, our respondents were asked whether capital markets will start pricing in climate risks on a notable scale over the next three years, 42 percent said 'yes', 30 percent said 'maybe', and 28 percent said 'no' (Figure 1.5). This implies an improvement on the current situation, as described earlier in Figure 1.3.

Equally notable is the expected advance towards pricing climate risks evident in all three asset classes (Figure 1.6).

In equities, progress should come as data improves in breadth, depth and quality under regulatory and investor pressure. Markets should be better equipped to turn the spotlight on companies at the forefront of devising cost-effective solutions towards adaptation and mitigation, as policy aspirations are turned into outcomes. Equities are especially adaptive in rewarding or punishing companies, as long as reliable data are available.

In fixed income, green bonds are likely to remain at the vanguard of progress, as ever more sovereigns and quasi-sovereigns use them to give a distinct green edge to their post-pandemic recovery. Companies, too, are likely to rely on green bonds to finance the transition to a green future. Indeed, there is currently scarcity in green bonds as many new issues have been oversubscribed.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



In alternative investments, real estate, infrastructure and private equity are seen as the best means of capturing the upsides from climate change. Blended finance, involving private–public partnerships, are likely to dominate some of the largest projects in these three alternative asset classes.

Those who anticipate this progress have also identified the underlying drivers that fall into three headings, as described below.

a. Curbing carbon emissions

As Figure 3.1 shows, 73 percent of our respondents anticipate higher adoption rates of clean energy standards. Sixty nine percent expect carbon taxes to reflect the true ‘social’ cost of carbon. Sixty seven percent expect emission trading systems to be more effective. Seventy one percent expect regulators to act on the carbon footprint of pension plans. Similarly, 57 percent expect central banks to act on the carbon footprint of the banking system. Fifty percent expect governments to implement carbon border taxes to create a level playing field for their carbon pricing initiatives to ensure that their domestic industry is not unduly disadvantaged in global trade.

Together, these measures are likely to curb carbon demand, promote alternative energy sources and reduce the carbon footprint of the financial system.

b. Promoting innovations around renewable energy

As Figure 3.2 shows, 84 percent of our respondents expect greater intergovernmental coordination in meeting their Paris targets. This should accelerate innovation. Seventy eight percent expect the cost of renewable energy to fall, via innovation and hyper scalability. Sixty percent expect public–private partnerships to promote innovation via blended finance. Forty seven percent expect innovation around carbon capture, utilization and storage systems.

Such advances are vital if hard-to-abate sectors like aviation, cement, shipping and steel are to meet the Paris targets. They are also expected to tilt public markets towards impact investing by opening up new investment opportunities, according to 65 percent of respondents (Figure 3.2).



Without mandatory disclosures on science-based targets, companies will always cut corners.”

Interview quote



Case study 1c: The price discovery process will get fresh signals

Financial markets struggle to price in slow-burn issues that do not grab regular media headlines. The underlying transmission mechanism from climate change to value creation has remained unclear without greater clarity on complex feedback loops involving two mutually reinforcing value drivers.

On the public policy side, they cover international actions on carbon pricing, energy standards, subsidies on green energy, and mandatory carbon disclosure within a well-defined taxonomy.

On the innovation side, they cover breakthrough advances in the newly emerging fields of renewable energy, hydrogen, energy storage batteries, carbon offsets and carbon capture systems. In market economies, predicting the pace and timing of technological advances is very hard, such is the diversity of actors and their initiatives now in progress.

We are no longer peering through the mist, however. America rejoining the Paris accord is a game changer. The deliberations at COP26 will face fewer impediments, given the global economic heft of the US. The pace of progress may be slow, as too many parties are involved and each has their own vested interests to protect. But the direction of travel will be a lot clearer for innovators and investors alike.

In the meantime, we have been capturing alpha returns by focusing on companies with good and/or rising ESG scores that are overlooked by exclusionary screening that avoids the ‘sinners’ and ignores future ‘winners’. We expect a bigger and faster reallocation of capital towards green projects in private and public markets alike.

A French asset manager



1

Executive
summary



2

Why progress
towards
climate pricing
has been slow



3

The next giant
leap forward:
areas of
progress



4

Climate investing
journey: the
next phase





1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress

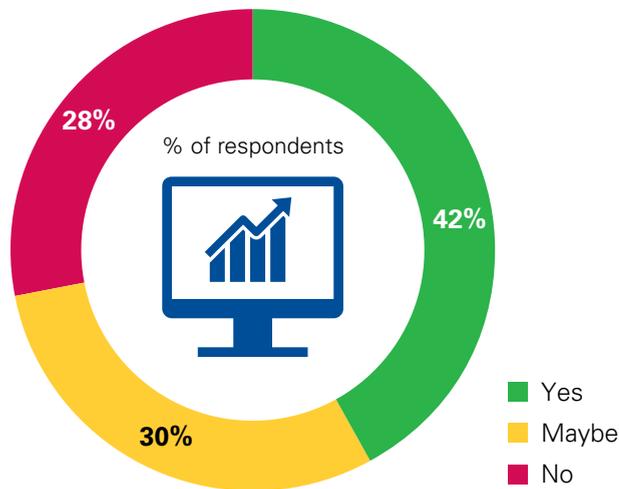


4

Climate investing journey: the next phase



Figure 1.5: Do you expect capital markets to start factoring in climate risk on a notable scale over the next three years?



Source: KPMG/CAIA/CREATE-Research Survey 2021

Figure 1.6: Over the next three years, which asset classes are likely to advance further towards pricing climate risk?



Source: KPMG/CAIA/CREATE-Research Survey 2021



Law courts will deliberate on more climate litigation under the ‘license to operate’ principle, as has happened lately in the Netherlands.



Interview quote

c. Improving the data infrastructure and reporting standards

The whole value chain of data is expected to see refinements, according to Figure 3.3. Thus, 77 percent of our respondents expect the mandatory reporting of carbon risks from regulators. Sixty six percent expect the evolution of new taxonomies for climate reporting following the example of the European Union. Sixty two percent expect the proposed creation of the Global Sustainability Standards Board to unify the existing initiatives of a plethora of standards bodies. Fifty three percent expect progress on the data front to advance to a point that will see the emergence of open source data platforms offering easy access to the carbon risks of companies.

Disclosure of reliable climate Key Performance Indicators (KPIs) is expected to be enforced by either regulators or by markets asking for data in the shareholder filings that would be susceptible to litigation to help prevent greenwashing.

The US Securities and Exchange Commission plans to propose new rules for listed companies by the end of 2021 to provide information to their investors as part of the Form 10-K mandatory securities filings.

All these developments will likely allow investors to allocate capital where they see the best opportunities, while also enabling companies to benchmark their climate progress against the ‘best in class’. The result will then be a virtuous cycle in which capital markets become a powerful force in helping to turn investors’ climate aspirations into reality.

5 Progress also rests on the adoption of best practices by asset managers

Given all the unknowables as well as the unknowns in climate change, criteria for selecting asset managers are coming under the spotlight, according to our respondents.

Three imperatives now drive the manager selection process: stewardship track record, investment capabilities and alignment of interest (Figure 1.7). They envisage asset managers going from a distant vendor to a strategic partner; somebody who is in the client’s inner circle of confidants. Hence, pressure has intensified on asset managers to implement best practices in each of these areas by developing closer client proximity as well as benchmarking against best-in-class competitors.

As Figure 4.4 shows, 81 percent of our respondents put stewardship at the heart of manager selection for two reasons. The first is to promote and implement their clients’ climate agenda within their investee companies;

duly prioritizing companies in terms of their risks and opportunities, and using a framework that is financially material for both sides. This is what being a ‘universal owner’ is all about. The second reason is that stewardship is vital in performing a reality check on what is happening on the ground, while the current infrastructure of data is still evolving.

Given that stewardship is a non-excludable public good, whose benefits are enjoyed by all investors, asset managers are also encouraged to be members of various external networks of like-minded peers — such as Climate Action 100+ and the NetZero Asset Managers’ Initiative — according to 63 percent of our respondents (Figure 4.4). Their collective leverage has already persuaded certain oil majors and mining companies to adopt the Paris targets.

On the investment side, to support the stewardship role, the selection criteria in Figure 4.4 also include: reporting capabilities (69 percent); expertise in three key aspects of climate investing, namely materiality, intentionality and additionality (65 percent); a talent pool focused on delivering innovative solutions (62 percent); and technology capabilities to evaluate environmental metrics (56 percent).

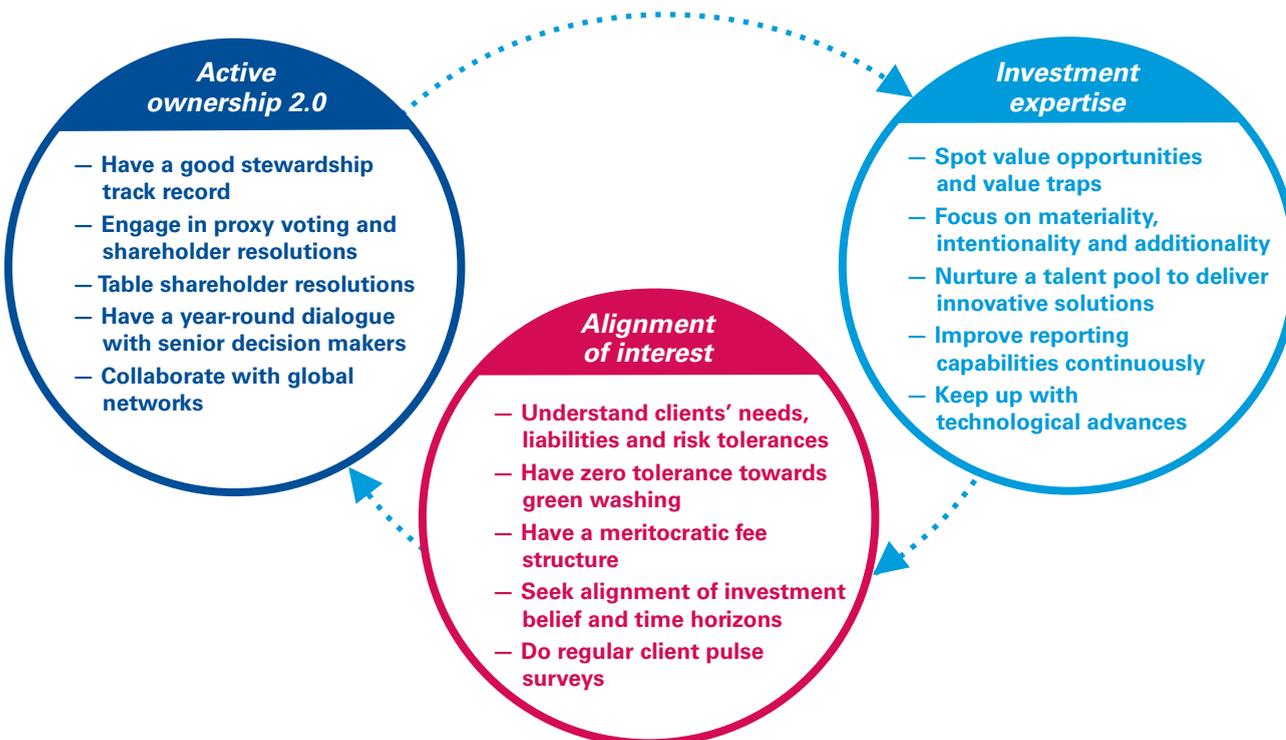
Finally, on the alignment of interest side, the key criterion is a meritocratic incentive structure that reflects value for money (61 percent in Figure 4.4). Clients no longer tolerate alpha fees for beta performance; nor greenwashing that has tarnished the ESG brand.

Above all, as universal owners, clients are seeking an alignment of beliefs and time horizons that puts as much emphasis on the future as on the past, if not more.

“The fact that ten of the top 15 carbon polluting countries are now adopting net-zero carbon targets is a very significant change.”

Interview quote

Figure 1.7: In which activities should best practices be implemented?



Source: KPMG/CAIA/CREATE-Research Survey 2021

- 1 Executive summary
- 2 Why progress towards climate pricing has been slow
- 3 The next giant leap forward: areas of progress
- 4 Climate investing journey: the next phase

“

Capital markets can help to save the planet. But left to their own devices, it will not happen.”

Interview quote

Conclusion

Left to themselves, capital markets alone cannot resolve the market failure and market inefficiency associated with climate change.

Rechannelling trillions of dollars of capital toward the technologies needed to power a low-carbon economy requires huge concerted action as well as incentives.

As the aphorism goes, the best way to predict the future is to invent it. Investors can only do that if they foresee potential benefits. What they need most is policy certainty.

Without it, some fear a 'Minsky moment': a collapse in securities' prices due to sudden panic at some future date as risks are allowed to build up.

Or, as the former governor of the Bank of England, Mark Carney, stated in 2015: "Once climate change becomes a defining issue for financial stability, it may already be too late."



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



2

Why progress towards climate pricing has been slow



Photo credit: Matjaz Krivic Photography



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Overview

One powerful tool that can help to deliver a resilient carbon-neutral economy is well-functioning capital markets with cold hard price incentives that reward investments which meet that goal and penalize those that don't. Yet, they have been slow to do that due to a combination of market failure and market inefficiency.

Both have arisen as governments globally have not taken immediate action to incorporate the costs of carbon pollution into corporate balance sheets nor reform the prevailing accounting standards to reflect the evolving forward trends. Arguably, the measures so far have yet to go from virtue signaling to value signaling.

Specifically, to reduce market failure, government responses have been slow in two crucial areas of carbon pricing: namely, carbon tax and carbon emission systems. Survey respondents state that regulators, too, have been slow to reduce the carbon footprints of commercial banks and pension portfolios.

To compound the problem, today's quarterly capitalism favors shorter time horizons, unrealistic return expectations, momentum trading, a faster velocity of trades and a constant search for hot products. Long-term investing, as required by climate change, mostly remains the exception, not the rule.

To reduce market inefficiency, in contrast, progress on a decision-useful taxonomy with standardized methodology, definitions and data has been slow in the face of sky-rocketing demand. As such, markets have had mixed signals on risk or alpha. Greenwashing has been the outcome, as hopes have run ahead of expectations.

Three key sets of barriers have conspired against the pricing of climate risks by capital markets. Each set is considered separately below.

1 Slower policy actions

a. A flat-footed response

Making it expensive to use fossil fuels can change consumer behavior quickly if there are easy and cheap alternatives available. This is easier said than done, since the enabling policy tools that make a difference have been slow to evolve (Figure 2.1).

The Kyoto Protocol — linked to the *United Nations Framework Convention on Climate Change* mandating industrialized nations to cut their greenhouse gas emissions — became international law in 2005. It put the onus of CO₂ reduction on carbon pricing — either by levying a direct tax on its consumption or adopting the 'cap-and-trade' emission trading systems. The latter

puts a cap on emissions by allocating quotas in different industries and allowing companies to buy credits if their emissions exceed their allocated quota or sell if they are below it.

In theory, both are seen as powerful tools for policymakers to change the pricing signal within capital markets and improve the readiness of the capital supply chain to integrate climate issues. Both are prerequisites for moving market respondents towards a longer-term perspective and exerting their influence as company owners.

“

If companies were disclosing the right information, then slow policy action wouldn't matter so much.”

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



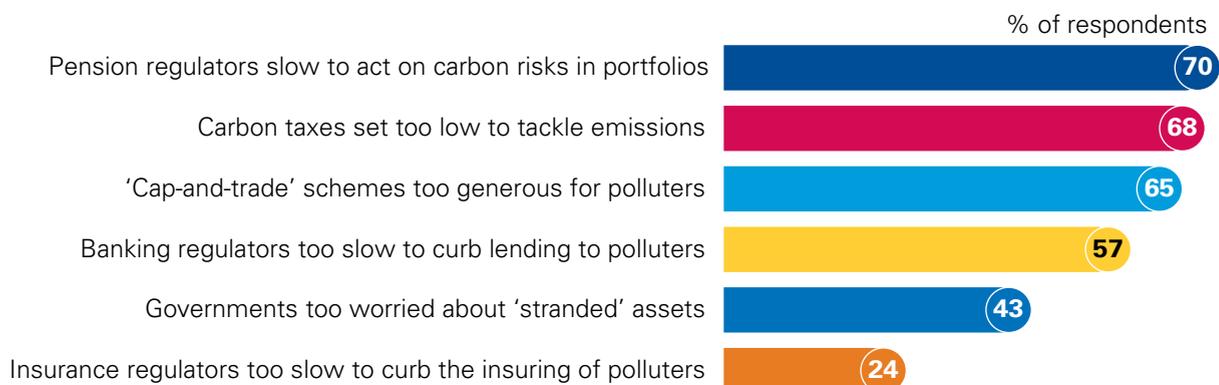
4

Climate investing journey: the next phase



Figure 2.1: In the policy context, what are the factors currently constraining capital markets from pricing in climate risks?

Slower policy actions from governments and regulators



Source: KPMG/CAIA/CREATE-Research Survey 2021

In practice, however, this has yet to happen. In Figure 2.1, 68 percent of our survey respondents believe that national governments have set carbon prices too low to meaningfully reduce GHG emissions in all jurisdictions, except Sweden. Sixty five percent also believe that the emissions trading system in place has set an industry quota that is too generous for the market mechanism to reduce emission levels.

Only 22 percent of global emissions are currently subject to a pricing scheme or soon to become so, according to a recent study from the World Bank.³ For most of the last decade, the carbon price in the EU Emission Trading System — the largest in the world — was stuck in single digits. The situation has improved since the pandemic began. Globally, the current weighted carbon price is around US\$40, which is up from around US\$20 near the end of 2020, according to the IHS Markit Global Carbon Index. It needs to remain in the US\$40–80 range, according to leading experts. Otherwise, carbon pricing is not climate action, just virtue signaling.

As we shall see in Section 3, more progress is expected in the area of carbon pricing as we look to the future. For now, though, policy uncertainty has conspired against the price discovery process linked to climate risks (Case Study 2a).

Taking their cue from governments, regulators too have been slow to react to climate change. Seventy percent of our respondents believe that pension regulators — overseeing a global pension pot of around US\$52 trillion⁴ — have not proactively enjoined pension plans to future-proof their portfolios against climate risks. Indeed, the prevailing laws have worked against it. This is exemplified by the landmark Pension Protection

“
No one knows the true price of carbon.”

Interview quote

Act of 2006. It requires the US defined benefit pension plans to adopt mark-to-market accounting, forcing them to focus more on shorter-term liquid assets and match their liabilities with government bonds.

Fifty seven percent of our survey respondents in Figure 2.1 also believe that central banks have been too slow in requiring commercial banks to reduce lending to the biggest polluters, thereby building up systemic risk. Since the Paris Agreement, commercial banks have continued to finance the exploration of new oil provinces and the construction of coal-fired power stations, especially in developing countries. Banks have offered more than US\$3.8 trillion of fossil fuel financing since the signing of the Paris Agreement, according to the non-profit Rainforest Action Network, using data from Bloomberg LP.

Hence, it's essential to look at the factors behind the slow policy response, so far.

b. Contributory factors

If policymakers and regulators have been slow to react, that is not for want of trying. Three impediments have been encountered, according to our survey respondents.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Case study 2a: Policy uncertainty impacts the price discovery of climate risks

Data are not a big enough issue for investors to make dramatically bad investment decisions. The Science Based Targets initiative implies that data are just an intermediary. The real problem is policy uncertainty. The more uncertainty we have, the more we worry about the data.

The key is to have a systematic approach that bends the demand curve for fossil fuels via carbon pricing, and bends the supply curve for renewables via subsidies and innovation.

The world of carbon pricing has had teething problems in both its components. Carbon taxes had a bad press after inciting the Gilet Jaune riots in France two years ago. Such taxes are fine if you can avoid their regressive effects by compensating low-income groups, since demand for fuel is highly inelastic. This has been done well in Sweden with the highest carbon tax in the world — currently at around US\$130 per ton of carbon.

Emission trading systems, on the other hand, are a stealth tax that can drive big efficiencies in carbon usage without invoking public fury. But the recent vintage has had two design faults: they set the carbon price too low and corporate quotas too high. Recent reform in the EU Emission Trading System augurs well. It also provides a good template for China as it embarks on its own system — the largest in the world.

Post-COP26, we will see more policy certainty on carbon pricing backed by a network of ETS, carbon border taxes and innovations in the science of battery power.

A global asset manager

First, most governments have been reacting to public opinion on climate issues, not leading it. In the West, periodic elections mean that politicians are incentivized to kick the climate issue into the long grass. No matter how enlightened their climate measures are, opposition parties have often treated them as an attack on the livelihoods of working people.

Consensus on the existential threat of climate change has been evolving at a glacial pace. Natural disasters such as floods, droughts, hurricanes and typhoons have often been seen as one-off events from which affected regions recover in a V-shaped way. It is only most recently that the severity and frequency of climate events are being viewed as permanently weakening the capacity of the affected regions to recover.

Second, governments have been worried about how steep hikes in carbon pricing may hit local communities by creating stranded assets that suffer from unanticipated or premature write-downs well ahead of their economic life. Such concerns have been just as vocal in the largest coal producing countries — Australia, China, India and Indonesia — and the biggest oil producers — Canada, Russia, Saudi Arabia and the US. Between 60 and 80 percent of the fossil fuel reserves of publicly listed companies face the risk of turning into stranded assets, according to the Inter-American Development Bank.

Third, until recently, under the prevailing regulation, the fiduciary role of pension plans around the world enjoined them to focus on factors that were material in maximizing financial returns for their members. Not only were environmental and social issues generally considered to be outside their fiduciary remit, they were also assumed to be in conflict with financial returns — especially when such returns are measured over short-term horizons.

This necessarily oriented their portfolio construction towards evidence-based approaches that have been tried and tested by time and events. Their mean-variance optimizers relied on risk models built on past price behaviors. This was tantamount to driving a car by looking in the rear-view mirror. Forward-looking trends with no clear past history — like global warming — lay outside the fiduciary responsibility.



Western economies have effectively outsourced their pollution to emerging markets by offshoring their manufacturing. ”

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



However, the winds of change have been evident lately, especially in Europe. Article 173 of the French Energy Transition Act 2015 was the trailblazer. It requires specific reporting on climate change, from non-financial companies and financial institutions alike. Other European countries have followed suit. The revised fiduciary role sees climate change as a financially material factor.

Policy issues aside, there have also been systemic issues that have affected the pricing of climate risks in securities prices.

2 Today's capitalism struggles with the long term in the absence of clear incentives

a. Tyranny of quarterly reporting

Today's investment edifice rests on Modern Portfolio Theory, which is silent on externalities like environmental degradation. The theory is critically centered on the short term for measuring and reporting corporate performance and investment returns. This is reinforced by the standard quarterly reporting cycle for publicly listed companies, which also encourages investors to focus on short-term results. This much is evident from our survey results (Figure 2.2).

Seventy one percent of our survey respondents believe that capital markets have rewarded short-term profits at the expense of long-term value creation. Sixty seven percent believe that capital markets have been notoriously poor at pricing externalities



Nothing about climate change will matter if the focus is on quarterly earnings.

Interview quote

like environmental pollution. Fifty six percent cite the lack of a long track record of performance on the environmental factor as a barrier.

This has been possible as capital markets have remained heavily distorted by the ultra-loose policies of central banks (66 percent).

Taking a long-term view in a short-term world has proven challenging.

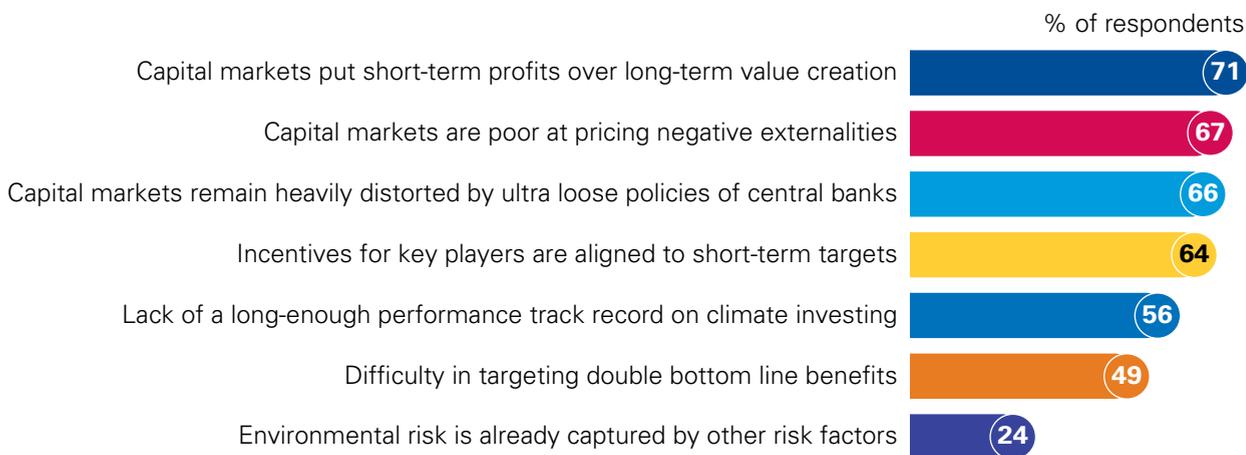
b. Skewed incentives

The misalignment of timeframes is not the only factor conspiring against markets' ability to price in climate risks: the misalignment of incentives is another one. Incentives for key players are aligned to short-term targets (64 percent).

According to studies reviewed by the Financial Times February 25th, 2021, the cost of short termism to S&P 500 companies was put at US\$79 billion a year in foregone earnings. In 2020, 70 percent of executives believed that their CEOs would sacrifice long-term growth for short-term financial objectives.

Figure 2.2: In the market context, what are the factors currently constraining capital markets from pricing in climate risks?

Capitalism has a problem with the long term



Source: KPMG/CAIA/CREATE-Research Survey 2021



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



The implication is clear: corporate decision-makers operate along timelines that are congruent with the timeframe of their incentives and the duration of their tenure. These sit uncomfortably with climate change since the physical and ecological impacts of ignoring climate risks will only become evident over decades, unless an improved early warning system comes along. Currently, there remain formidable problems in compiling a widely accepted singular metric on climate change that can be used in incentive systems. Lack of clarity in public policy remains a key barrier (Case study 2b).

3 Data remain the Achilles' heel

Significant investing in climate change took off after the Paris Agreement in 2015. Yet, for investors, climate change still remains an inexact science.

Its supporting infrastructure of data, skills and technology has taken time to evolve. In the meanwhile, hopes have run ahead of expectations. Greenwashing has been the result, according to 50 percent of our survey respondents (Figure 2.3).



Reporting standards are very mixed and politicized.

Interview quote



There will always be tension between doing the right thing and meeting the return targets, until regulators put guardrails on it.

Interview quote

That this problem is real is not in doubt. The European market for sustainable investments contracted by US\$2 trillion between 2018 and 2020 following the introduction of anti-greenwashing rules, according to the latest data from the Global Sustainable Investment Alliance.²

The root cause of the problem is that there have been no mandatory requirements on listed companies to report on their climate risks and opportunities (76 percent in Figure 2.3). They have been left to decide for themselves which climate factors are material and how they should be presented. This self-selective reporting is inevitably self-serving: only metrics that show the investee companies in a good light are reported. They are not consistent across issuers and time, nor decision useful and forward looking (58 percent).



Case study 2b: Climate policies need incentives as well as sanctions

The law clearly sets out that our fiduciary responsibility is to focus on factors that maximize the financial returns of our portfolio. Plans in the public sector suffer from another constraint: they tend to be politicized. So, our investment approaches need to be evidence based and factor in the potential incentives and sanctions inherent in climate policies. Both remain unclear for now.

We must remember that climate change is a multi-year transition and it is only one variable among hundreds of others. There is a spectrum of investment risks that all need to be weighed up while our portfolio targets a seven percent annual return.

The biggest obstacle continues to be policies and frameworks that support a transition to a low-carbon future. Instruments such as carbon pricing, carbon tax and energy standards need market trading incentives as well to win over pension boards deeply grounded in their fiduciary duty. For them, policy measures must carry incentives as well as sanctions.

Furthermore, unless new regulation on mandatory disclosures on climate matters is uniform, numbers-bound, measurable and specific, it will only create more greenwashing and hassle, thus masking the underlying problem.

On matters of data and disclosures, many vendors, data services and academics are well intentioned towards policies that favor an ideal state but they forget that we are in the early phase of climate investing. Currently, there is a distinct lack of a pragmatic middle ground that starts with small meaningful steps and can, over time, morph into an ideal framework. In the meanwhile, there is only so much we can do.

A US pension plan



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



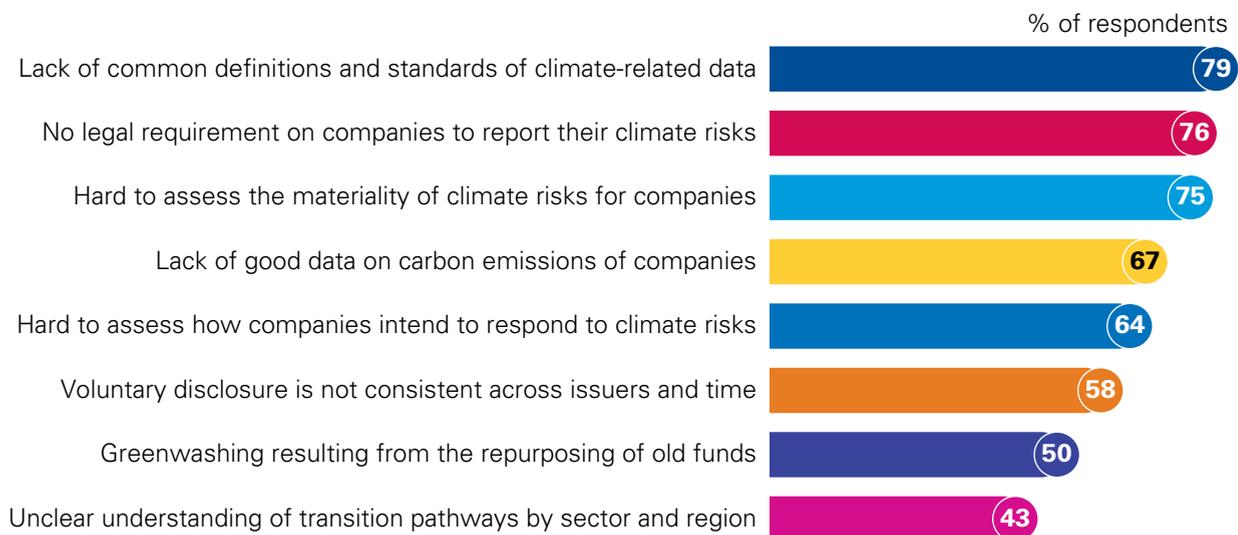
4

Climate investing journey: the next phase



Figure 2.3: In the data context, what are the factors currently constraining capital markets from pricing in climate risks?

Lack of credible public metrics of the impact of climate change



Source: KPMG/CAIA/CREATE-Research Survey 2021

As a result, common definitions and standards of climate-related data have been slow to evolve (79 percent).

That means that data on scope 1, scope 2 and scope 3 carbon emissions as defined by the GHG Protocol are either hard to get or hard to validate (67 percent). In particular, scope 3 data are replete with pitfalls, one of which is double counting: one company’s scope 1 emissions may be another’s scope 3.

Hence, a common methodology on two foundational concepts in climate investing is slow to evolve: the materiality of climate change for investee companies (75 percent), and when and how to mitigate it so as to deliver what their investors need (64 percent).

Notably, despite the lack of common standards, a plethora of ESG rating providers has emerged in recent years. While they complement company self-disclosure, the correlations of carbon rating of the same investee companies in the same universes from different data providers have been reportedly very low. Such inconsistencies have been common, as each provider uses proprietary models with their own definitions, weightings and measurement.

Indeed, the current generation of data suffers from two additional challenges. The first one relates to their validity: the degree to which an actual data point is an accurate reflection of the measure in question, where validity is impaired by subjectivity and issues around timeliness, granularity, and transparency. Second, in so far as these problems are meant to be eased by the use

of soft data, they tend to be subjective — based as they are on personal assessment, opinion, experience, or interpretation. Indeed, the reality of well-publicized net zero initiatives has been challenging when it comes to implementation (Case study 2c).

To compound the problem, even the frameworks used by the long-established non-profit Sustainability Accounting Standard Board and Global Reporting Initiative vary in scope and emphasis.

Be that as it may, having the data is one thing, deploying them usefully is quite another. That requires a deep understanding of the nature of the risks and opportunities implied by the data. The forward-looking approach developed by the Task Force on Climate-related Financial Disclosures (TCFD) is the most widely used framework in this context. It acts as a bridgehead to a more purposive capitalism by showing how negative externalities can be tackled. But its validity is only as credible as the data that go into it.

“Where are markets going to get high quality validated data and certainty on price discovery?”

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Case study 2c: Actions speak louder than words

The current approach to climate investing is too slow: much talk without real action. Capital markets are looking out for a significant carbon tax globally to reduce emissions and a carrot-and-stick approach to executive compensation to change corporate behavior.

Most asset owners treat climate-related investing mainly as a risk management tool in order to mitigate the risks arising from high-impact weather events. But opportunities associated with climate change have not attracted that much interest, as these require a venture capital mindset that supports start-ups or established innovative companies over longer time horizons.

Currently, capital is not going into solving the problem. Asset owners still demand attractive financial returns while their time horizons have become ever shorter, especially as ultra-accommodative central bank policies since the 2008 crisis have distorted prices in all asset classes. Hence, public markets are no longer seen as a primary vehicle for capital raising, other than IPOs. In private markets, in contrast, one can see immediate results — for example, when you retrofit existing buildings or build new ones consistent with the net zero target.

Notably, the Net Zero Asset Manager Initiative has signed up asset managers with around US\$45 trillion in assets. In addition, the Carbon Disclosure Project is supported by institutional investors with a combined US\$25 trillion in assets. Laudable as they are, these initiatives are also perceived as being akin to buying gym membership, paying regularly for it, and carrying the card. But who’s checking if the members are actually going?

A Hong Kong (SAR), China-based investment consultant

The situation has parallels with the dawn of stock markets. The quality of corporate data then was sparse and weak. Many of the concepts that underpin today’s investing — volatility, liquidity, risk factors — were unknown then. However, the institutionalization of the investment industry over the past 60 years has changed that. The rise of index providers, data vendors, pension advisers, academic researchers and regulators have created a new infrastructure of data, standards, expertise, linkages and metrics.

Similar prospects beckon for climate investing.



When people talk about factoring in ESG, what exactly are they talking about?”

Interview quote

Conclusion

Market failures and market inefficiencies have arisen owing to a slower policy response on climate issues, while the prevailing ecosystem of capital markets remains overwhelmingly centered on short-term financial goals, irrespective of the damage they may inflict on wider society.

To correct that, governments, regulators and market respondents are on a steep learning curve as they advance on a climate change journey.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



3

The next giant leap forward: areas of progress



Photo credit: Matjaz Krivic Photography



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Overview

With the spontaneous dynamic towards a greener economy now in place, the scene is set to address the three thorny issues that have so far stood in the way.

On the public policy front, the adoption of carbon pricing will likely expand not only in breadth as more countries and industries implement it, but also in depth, as loopholes and abuses are minimized. Clean energy standards are also likely to gain prominence. For their part, banking and pension regulators are expected to play a more proactive role in reducing the carbon footprint in their respective areas of the financial system.

On the innovation front, fresh initiatives in blended finance are expected to promote more public-private partnerships to drive further advances in areas like renewable energy, storage batteries, and carbon capture, utilization and storage systems. These will likely accelerate the current momentum on the supply side of the energy equation and release stronger price signals for public markets to tilt towards impact investing.

On the data front, the creation of the Global Sustainability Standards Board is expected to deliver harmonized standards of reporting. Ever more countries are expected to embrace new taxonomies of reporting, as regulators mandate companies for the annual audited disclosure of their carbon footprint and progress on its reduction. Open source platforms will offer easier access to corporate environmental performance.

So far, two big forward leaps mark the journey towards a low-carbon future.

The first was the 2015 Paris Agreement that brought together the nations of the world in collectively setting goals on reducing global warming for the first time in history and kickstarting the process of achieving it. So far, its achievements have been twofold.

First, a common language and common mental models have emerged in public discourse involving governments, businesses, investors and consumers around the core challenges ahead and the need for pre-emptive action.

Second, those mechanisms for curbing carbon emissions and promoting alternative energy that came in the wake of the agreement are being refined following early experiences. Currently, new initiatives and public pledges are daily occurrences.

As a result, we are now in the midst of the second forward leap. Its most conspicuous feature is the decarbonization pathways set by China, Europe and the US toward a low-carbon future. Their combined leverage is set to accelerate and amplify the current momentum. However, variable geometry will characterize progress: nations will advance at a pace with measures that

best suit their unique circumstances, according to our survey respondents.

Over the next three years, three tools will dominate the pathways: carbon pricing driving down the demand for fossil fuels; innovations delivering exponential growth in the supply of low-cost alternative energy; and mandatory carbon disclosures for listed companies resulting in a step improvement in the current infrastructure of data.

Together, they are expected to improve the signals to capital markets in their dual role of pricing risks and reallocating capital. Each of them is covered separately below.



We need better quality, regulated, audited information from companies.

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



1 Curbing fossil fuel demand

a. Spread of carbon pricing

As mentioned in Section 1, a most critical factor preventing capital markets from pricing climate risk has been policy uncertainty. This makes it exceedingly hard to value long-term investments in energy, infrastructure and their associated sectors. The result is a slower flow of capital to renewable energy and other existing low-carbon technologies like hydrogen. Market failure is reportedly more evident in capital-intensive projects with long time horizons to commercialization.

Hence, our survey respondents expect to see further progress on carbon pricing (Figure 3.1): 69 percent expect governments to raise carbon taxes to reflect the true social cost of carbon and 67 percent expect governments to reboot cap-and-trade schemes by lowering the cap on carbon emissions by industries and the quotas allocated to their companies in emissions-trading systems.

China’s cap-and-trade system has gone live this year. Starting initially with the power generation sector, the system will be extended over time to cover seven other carbon-intensive sectors including cement, steel, and aluminum. The Chinese carbon market will soon overshadow all the others and set the *de facto* carbon price.²

Another recent noteworthy development is the roll-out of the European Union’s ambitious Green Deal to



Covid-19 proved what’s possible in liberal democracies where the fear of a nanny state is always there.

Interview quote

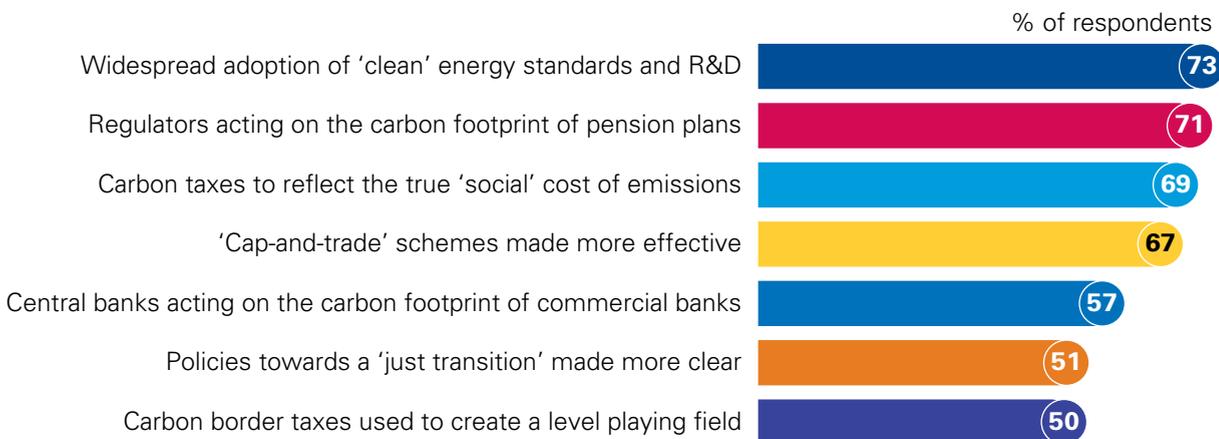
transform every corner of the continent’s economy: everything from cars to cement to aviation to shipping. It is designed to cut pollution by at least 55 percent by 2030 from 1990 levels. It targets alternative energy as well as greater efficiency in the use of fossil fuels.

Another positive is that 51 percent of our survey respondents believe that governments will be adopting policies that support a just transition, to assist communities hit hard by the progressive switch from a fossil fuel based economy to a clean energy based economy.

Within individual countries adopting carbon pricing, there are concerns that industry costs may likely rise and hit the competitiveness of domestic companies in global markets. These concerns have been loudest voiced in the European Union, with its most advanced Emission Trading System, and to a lesser extent in the US. To counter that, governments are likely to adopt a ‘carbon border adjustment mechanism’ — a tax — to

Figure 3.1: In the policy context, what factors will be driving global capital markets towards pricing in climate risks over the next three years?

Fresh policy momentum towards curbing carbon demand



Source: KPMG/CAIA/CREATE-Research Survey 2021

create a level playing field in global trade (50 percent). How this idea will be incorporated into the current architecture of the World Trade Organization remains to be seen.

The use of proceeds from carbon pricing and border taxes remains a hotly debated issue — one that sits high on the COP26 agenda.

In particular, the developing world needs aid from the developed economies to achieve a just transition — especially the ones with large fossil fuel reserves that are now exposed to the risk of stranded assets. In many emerging economies, such assets deliver a double whammy: economic and social hardships in their immediate communities and financial losses for governments who either own these assets or lose out on the taxes and royalties on them. They have little direct incentive to transition to low-carbon alternatives, unless there are incentives from developed economies.

Developed economies are thus caught on the horns of a dilemma: they need carbon pricing to achieve a just transition at home and abroad, but their domestic citizens have yet to be convinced of its merits by their political leaders (Case study 3a).

Shaping public opinion on the centrality of carbon pricing and its benefits for individuals is a prerequisite for success. Early experiences from Canada, the European Union and the US clearly show that carbon pricing does work. But its success in influencing public

opinion depends upon how it is framed, according to a NYU Wagner workshop report.⁶ It also concludes that carbon pricing cannot stand alone. Making it expensive to use fossil fuels can only change behaviors if there are easy and cheap alternatives available. For now, carbon pricing versus voters wallets is a big defining issue in climate change today.

Many governments may follow the US example and implement clean energy standards, according to 73 percent of our survey respondents (Figure 3.1). These require a certain percentage of retail electricity sales to come from non- or low-emitting sources. It could be a politically palatable and cost-effective alternative to pricing carbon in the electricity generation sector, even though it is no more than a stealth tax collected by energy producers to fund their investments in non-carbon energy sources.



Canada accounts for 2 percent of global pollution. With large reserves of oil and gas, it is hard to persuade the public to make sacrifices.

Interview quote



Case study 3a: Voters want to see tangible benefits

We think we have ‘best in class’ short-term targets that aim to orient more than two-thirds of our portfolio towards renewables. But that raises a dilemma.

On one side, we’re seeing a marked compression in the market valuations of the traditional energy companies, even while their earnings multiples are rising. On the other side, valuations in the renewables sector are far too high in relation to earnings. We’re not going to buy them at a two percent return. A lot of money is rushing into that area. It means carbon is not priced properly.

For us, the real issue is a domestic one. Both our main political parties have adopted carbon prices with little detail about how these will affect motorists and households, how the newly raised revenue will be used, and when alternative sources of energy will hyperscale. For example, auto companies have ambitious targets for electric cars but these require nationwide charging stations to be in place. The long queues that exist currently are a turn-off for most motorists.

Things that raise the cost of living remain a big issue for voters who want to see some net benefits. They also want to see a level playing field via border tariff adjustments to avoid the ‘free rider’ problem. Of course, carbon pricing may not work in some countries. But unless they adopt other equally effective decarbonization policy tools, progress will be slow.

COP26 is a star power event. In its wake, national policies will evolve piecemeal over the next five years, followed by a step-change as we approach 2030.

A Canadian pension plan



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



b. Regulatory push: greening it and meaning it

Net zero pledges are coming in thick and fast from financial institutions. Convened under the Glasgow Finance Alliance for Net Zero, an unprecedented 160+ firms, with US\$70 trillion in assets, aim to steer the global economy towards net zero emissions. Nevertheless, respondents voiced concerns that the net zero concept is open to abuse and that it ignores the accumulated amount of CO₂ already emitted since the start of the Industrial Revolution.

Hence, central banks are expected to play a pivotal role in assessing systemic risk and mandating the banking system to play its part by reducing its scope 1, scope 2 and most importantly scope 3 footprints, according to 57 percent of our respondents (Figure 3.1).

Many banks have set net zero targets. But our survey respondents who belong to the Institutional Investors Group on Climate Change believe that these ambitions will often not have the impact needed, since they typically exclude scope 3 emissions produced by customers.

Traditionally, commercial banks have not measured their financed emissions, let alone disclosed them or tried to cut them back. As a result, central banks may be forced to act in the face of what a recent joint report from the Bank of International Settlements (BIS) and the Bank of France referred to as ‘green swan’ events.⁷ Unlike their black swan counterparts, these are predictable due to rising concentrations of GHGs and biodiversity loss. As a result, by financing carbon emissions, the financial system is essentially creating huge problems, given the potential concentration of emissions — and hence risk — in banking, insurance, and investor portfolios.

Besides, by helping to tackle the carbon emissions of the banking system, the report argues that central banks can also play a role as advocates of broader socioeconomic changes without which their current policies on financial stability will have limited chances of success. Green swan events may even force central banks to intervene as ‘climate rescuers of last resort’ by buying large sets of devalued assets to prevent the collapse of the global financial system. A precedent was set in the Global Financial Crisis in 2008, when central banks were forced to buy worthless subprime bonds to avert a 1929-style Great Depression.

However, critics argue that the core aim of central banks in this era of flat money is price stability above all else. In response, the BIS-Bank of France report argues that central banks can no longer afford a ‘wait and see’ approach due to the biophysical foundations of the climate crisis and its potentially irreversible impacts.

The same applies to other financial regulators. Seventy one percent of our survey respondents (Figure 3.1)



Banking supervision was very slow. But a switch has been flipped.

Interview quote

expect them to mandate pension plans to factor climate risks and opportunities into their investment portfolios. As mentioned in Section 2, this is already happening in the European Union, following early moves by France in 2015. This trend is expected to extend to other pension markets around the world. Indeed, the EU’s Sustainable Finance Disclosure Regulation, which came into effect this year, mandates asset managers to declare the sustainability credentials of their products so as to minimize greenwashing and enhance product integrity.

2 Innovations in alternative energy

a. Pace of innovation to hot up

Over the next three years, the main thrust of innovation is expected to be evident in two areas.

The first is renewable energy, as cited by 78 percent of our survey respondents (Figure 3.2). As a key decarbonization lever of transition, it will continue to see cost reductions and become ever more competitive against fossil fuels, thereby increasing the demand for new projects and improving their commercial viability.

These developments, in turn, are expected to improve grid flexibility and reliability. Electricity providers will need to invest in enhancing network connections to mitigate challenges from the seasonality and variability risks associated with solar and wind power, while meeting the rising demand for electricity due to the electrification of other sectors. New solutions are already under development for energy storage via utility-scale batteries.

Another area where our survey respondents expect accelerating innovation is carbon capture, utilization and storage systems (47 percent; Figure 3.2). They seek to capture CO₂ from fuel combustion or industrial processes at source, or directly from the air, and then either use it as a resource to create products or services, or put it in permanent storage in deep underground geological structures.

The average life of a coal plant is around 50–60 years, so implementing this carbon capture technology on both recent and future coal plants will be critical to achieving emission reductions while they are still in operation.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



In contrast, progress on the hydrogen front is expected to be slow. Hydrogen is the most plentiful element in the universe, but it must be separated from some other substance, like water, natural gas or fossil fuels. The technology for producing grey hydrogen already exists but it produces more GHG emissions than burning diesel. 'Green' hydrogen crucially relies on renewable energy being available at hyperscale, which, as yet, it is not.

Overall, on the innovation front, competition between the three largest economies to dominate these industries is pushing the frontiers of technology, according to many of our respondents. They believe that China, the EU, the UK, and the US are set to step up their investment in new energy tech that will boost wind, solar, electric cars, batteries, hydrogen fuel and nuclear power. At any rate, China's current world-leading role in manufacturing solar panels, wind turbines and electric vehicles is set to face stiff competition as the EU and the US catch up.

b. Positive spin-offs for emerging economies and impact investing

Be that as it may, in addition to climate mitigation, the innovations described here will likely prove consequential in two respects: technology transfers and the spread of impact investing.

Taking them in turn, they will help towards a more coordinated global approach by governments to meet the Paris Agreement, according to 84 percent of our survey respondents (Figure 3.2). In particular, they will facilitate a just transition via technology transfers at hyperscale from the developed to developing economies. Without support for emerging economies,

“
Cutting back on fossil fuel is not enough.
We need to develop alternative energy in
tandem.”

Interview quote

significant progress on tackling climate change will remain a pipe dream (Case study 3b).

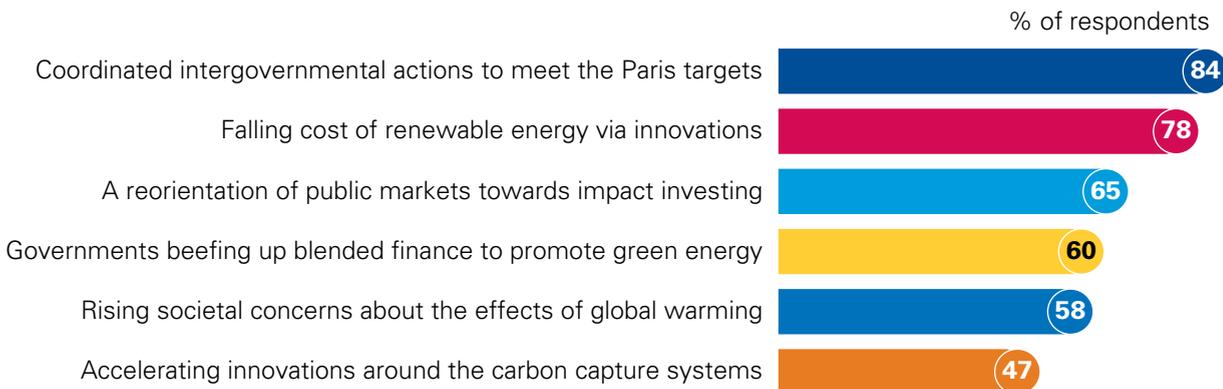
After all, forecasts from the University of Oxford Smith School of Enterprise and the Environment⁸ show that the world stands to lose nearly half of its potential economic output by the end of the century, in the absence of further progress on climate change. But this is only an average. Emerging markets are at risk of faring even worse, given their special vulnerabilities to rising sea levels, drought and slumps in agricultural output. On the flip side, two-thirds of the world's population lives in regions where wind and solar power represent the cheapest option for new electricity generation, according to Bloomberg-NEF.

Renewables are already even cheaper than fossil fuel power in much of the world when it comes to building new power stations.

That is because the cost of renewables follows the dynamics of all manufacturing products: the more you produce, the cheaper it gets, and the cheaper it gets the more you build. Renewables lend themselves to super scalability.

Figure 3.2: In the innovation context, what factors will be driving global capital markets towards pricing in climate risks over the next three years?

Fresh tailwinds from innovations and market reconstruction



Source: KPMG/CAIA/CREATE-Research Survey 2021

- 
- 
- 1

Executive summary


- 2

Why progress towards climate pricing has been slow


- 3

The next giant leap forward: areas of progress


- 4

Climate investing journey: the next phase





Case study 3b: A tale of two worlds

The annual Business Responsibility Reporting from the Indian Ministry of Corporate Affairs covers the top 1,000 Indian companies and their progress on 500 ESG indicators. This massive reporting exercise puts the onus on shareholders to decide which companies to reward and which to penalize.

Yet, we're nowhere on climate change. There is no national climate impact assessment. The destruction of forests to promote construction is common. The installation of new coal-fired power stations continues apace. Large companies wield huge political influence with the government for whom economic development matters far more than climate change. At the Earth Day Summit last April, India was one of the conspicuous hold-outs on making pledges to reduce its carbon emissions.

Over the next five years, we face the daunting prospect of a two-speed world, where developed economies make great progress on climate change, while the developing economies are still struggling to raise their living standards. One can't deny Indians a good standard of living but the challenge is to reduce the carbon intensity of products that go into living standards.

Today, 90 percent of GHG emissions have come from Western countries. But new flows are coming from China at 30 percent and India at 8 percent. India's share is predicted to rise to Chinese levels before long, as its economy grows annually at 5–7 percent.

Hence, it needs help — financial and technical — from the developed economies to achieve a just transition to a low-carbon world that does not undermine its goal to become a middle-income country. Otherwise, the path towards a net zero world will remain a pipe dream.

An Indian asset manager

Turning to impact investing, in response to clearer policy signals and innovations, 65 percent (Figure 3.2) of our respondents expect a reorientation of public markets in equities and bonds towards impact investing that rests on the twin pillars of materiality and additionality.

Typically, materiality is defined here as having greater than 50 percent of a company's revenues from products and services that directly seek to solve a major social or environmental problem. In turn, additionality is measured in terms of outcomes that would not have occurred but for the contribution made by the impact strategy.

Historically, it has been a niche area, dominated by private equity and debt circles as well as the project financing vehicles of development banks. But it has been advancing into other corners of private markets, such as infrastructure and real estate, where impacts

are more amenable to measurement in custom-built investment mandates. This trend will likely extend into public markets with bigger pools of capital and greater visibility to investors. Green bonds have been a good entry point into the fixed income space. Longer horizon thematic funds are driving the advance into the equity space. In both cases, the driving force behind impact outcomes has been the role of active ownership via engagement with securities issuers.

3 Advances in data infrastructure

A clear majority of our survey respondents expects progress across the value chain of data (Figure 3.3).

Notably, 77 percent of them expect securities regulators to mandate companies for annual audited disclosure of their exposure to climate risks. Sixty six percent also expect regulators to create taxonomies for climate reporting following the EU's example. Sixty two percent welcome the creation of the Global Sustainability Standards Board to unify the existing initiatives of a plethora of standards bodies. Fifty three percent expect progress on the data front to advance to a point that will see the emergence of open source platforms offering easy access. Such advances may help those countries who have set net zero targets, while others are held back by fears of stranded assets (Case study 3c).



Only foreign aid and technology will drive the climate progress in the emerging economies.

Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



For those leading the pack, one of the main issues is that growth in ESG investing has not been matched by the greater availability of data. Thus, the current reporting frameworks have become antiquated as investors around the world are demanding increasing disclosure about how their capital is used and the impact it is having on the world.

It is time now to treat ESG issues with the same rigor, diligence and auditing as financial reporting.

Hence, the endorsement of the TCFD framework by the G7 leaders at their summit in the UK in June 2021 is noteworthy. But the real issue is when these governments will make climate-related disclosure mandatory in company filings. Since that summit, four jurisdictions have agreed to introduce mandatory disclosure: Hong Kong (SAR), China, New Zealand, Switzerland and the UK. The current situation is work in progress.

The US Securities and Exchange Commission plans to propose new rules for listed companies by the end of 2021 to provide information to their investors as part of the Form 10-K mandatory securities filings. Among others, the SEC will likely propose consistent and comparable disclosures that are decision-useful for investors. The filing is expected to include qualitative

“ Investors are demanding improvements in data frameworks and their ease of use. ”

Interview quote



Until we have some credible body, and maybe regulation mandating what to do, it's going to be tough for investors when it comes to standards and reporting.”

Interview quote

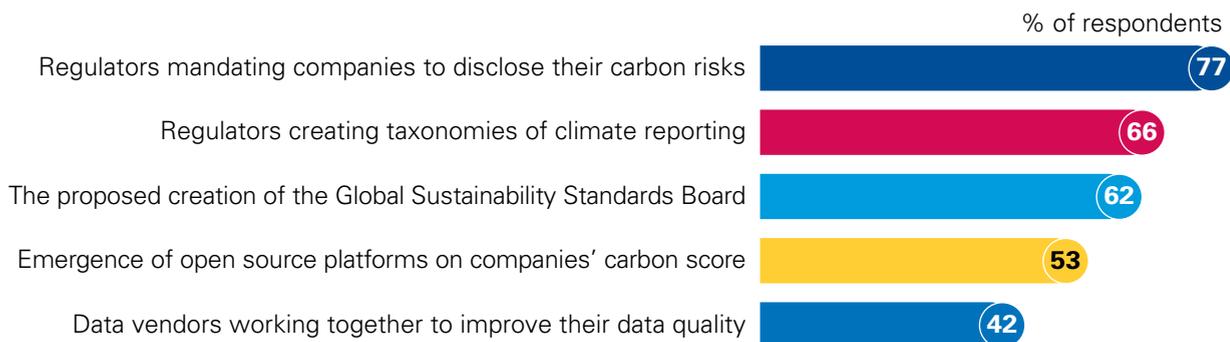
disclosures, such as how company leaders manage climate-related risks and opportunities and how those feed into corporate strategy. The filing will also include quantitative disclosures, such as metrics relating to GHGs, the financial impacts of climate change and progress towards climate-related goals.

The EU Taxonomy Regulation came into force in 2020 and establishes the overarching conditions that an economic activity has to meet in order to qualify as environmentally sustainable. It looks at climate challenges through the lens of a 'double' materiality that can shape a financial future in which climate goals and business objectives are mutually supportive.

The first materiality is targeted at the company's investors and aims to report on climate risks and opportunities that are financially relevant to its market valuation. The second is targeted at wider society and aims to report on the external impacts of the company's activities. The key impact areas in question are climate mitigation, climate adaptation, water, the circular economy, pollution, and biodiversity.

Figure 3.3: In the data context, what factors will be driving global capital markets towards pricing in climate risks over the next three years?

Advances in the data infrastructure



Source: KPMG/CAIA/CREATE-Research Survey 2021



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Case study 3c: Fears of stranded assets

Prior to the Paris Agreement, our climate transition plan had high-level goals based solely on engagement and advocacy. A lack of reliable data and consistent definitions was a major hurdle. Since then, we have a more refined and focused approach.

The revised plan involves: managing transition risk; investing in renewables, battery storage and infrastructure; engaging with companies to reshape their climate goals; and joining advocacy groups for climate friendly policies. Our core investments are in large infrastructure projects, as they offer greater opportunities to drive change than equities and bonds. Overall, our portfolio aims to be net zero by 2050, with a 45 percent reduction to be achieved by 2030. The tipping point came when we set hard targets and incentivized the origination team.

Improvements in climate-related data will help us. But current progress is far too slow for large investors like us who are keen to gain early mover advantage. Our other biggest challenge is the lack of policy definition from federal government in Canberra. Sitting on vast reserves of high-grade coal, the government has shied away from setting any hard targets on carbon reduction, unlike its peers in the developed world. The targets set in the last decade by a previous government were subsequently disowned by its successor. Powerful lobby groups have had a huge impact on public opinion by highlighting the immediate societal risks of stranded assets.

COP26 will hopefully promote strong peer pressure among nations. It is encouraging that both China and the US have lately adopted the Paris targets. Both will be investing heavily in renewables and carbon capture technologies and set the pace for the rest of the world. Their leverage will get other nations to act, including Australia.

An Australian superannuation fund

Over the next three years, progress is expected on a common set of definitions for climate risk data, including modeling and calculation methodologies. Also, more countries are expected to embrace taxonomies or classification systems that can help foster greater transparency and comparability in markets for financial products labeled as 'green' or 'sustainable'.

This would allow investors to allocate capital to the best performers. It would also enable companies to benchmark their climate progress against the 'best in class'. The result is capital markets becoming a powerful force in helping to turn investors' climate aspirations into reality.

Conclusion

The positive winds of change are evident. New policy and regulatory commitments have the potential to unleash stronger price signals to capital markets.

Financial markets are likely to advance significantly towards pricing climate risk. The cost of capital will favor green investments. Carbon taxes will be normal across Europe.

However, progress towards net zero will vary by country to reflect their domestic priorities. Yet, the direction of travel is clear.

Having made bold pledges on a global stage, concerted action between nations is inevitable: if for no other reasons than self-preservation and peer pressure.

Only time will tell whether action will come fast enough to arrest the irreversible tipping point that climate scientists are predicting.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



4

Climate investing journey: the next phase



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Overview

Investments focused on risks and opportunities associated with climate change have longer time horizons and overlapping goals. Some target good risk-adjusted long-term returns, some target a double bottom line (defined as doing well financially and doing good environmentally), some seek a defensive portfolio that minimizes fat-tail/far-off risks, and some target lower portfolio volatility that earns more by losing less.

Over the next three years, climate investing is expected to attract fresh inflows in the three broad asset classes: equities, bonds and alternatives. Impact investing is likely to gain prominence in equities with improvements in the quality of data. Green bonds should spearhead the inflows into fixed income as more nations adopt green taxonomies. Infrastructure and private equity is likely to play a key role in the rise of blended finance.

When it comes to selecting external asset managers for climate investing, five criteria top the list: track record of impacts delivered by stewardship and proxy voting; a talent pool capable of delivering innovative environmental solutions; active membership of influential global networks; reporting capabilities; and expertise in three foundational aspects of climate investing — materiality, intentionality and additionality.

This forward-looking assessment is predicated on the progress expected by our survey respondents, as detailed in Section 3. For climate change to morph into a compensated risk factor that delivers a double bottom line, governments and regulators need to send strong price signals that create uniform expectations through tax and credit systems that penalize and reward the transition of portfolio companies.

This section provides a snapshot of the current state of climate investing and its future outlook in the investment portfolios of our surveyed organizations. It highlights the risks being targeted, the potential benefits expected, the asset classes most favored, and the criteria used in selecting external asset managers.

1 Going from risk to uncertainty

Figure 4.1 presents the extent to which the four key risks associated with climate change are factored into the investment processes of our survey respondents currently and those that are most likely to be over the next three years. Three points are noteworthy about this relatively early stage of their climate journey.

First, their current focus is on transition risk from the economic obsolescence of assets due to, among others, changing consumer preferences (65 percent). The risk of stranded assets is getting more and more real by the day, as a combination of carbon prices and advances in alternative energy — as argued in Section

3 — are driving progress towards a low-carbon future. That apart, physical risk is also now featuring in the investment process (51 percent), as climate events have become more severe and more frequent.

Second, and in contrast, there is less emphasis on the other two risks: litigation risk, as third parties seek compensation from collateral damage (36 percent); and systemic risk, as the prices of financial assets do not fully reflect climate risks (22 percent). Thus far, they have been seen as slow-burn issues.



You can't just revamp a whole energy industry that was built over 150 years in five years, but you can set up the markets for change.



Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Figure 4.1: Which of the four climate risks is your organization currently factoring into its investment process and which ones will be factored in over the next three years?



Source: KPMG/CAIA/CREATE-Research Survey 2021

Third, taking a three-year forward view, all four risks are likely to be factored into the investment process of our survey respondents, in light of the three developments highlighted in Section 3: fresh policy momentum on curbing carbon demand, the emergence of climate change as a compensated risk factor, and advances in data infrastructure.

However, identifying these risks is one thing. Their effective inclusion in the investment process is quite another. This is because while climate change is largely referred to as a ‘risk’ in the portfolio construction context, in fact it is an ‘uncertainty’, since scientific estimates for the probability distribution of future climate temperature scenarios vary widely.

The task is that much harder because of the two-way nature of causation: climate change affects investment choices which, in turn, can affect climate change. Another complicating factor is non-linearity in climate trajectory: the longer the corrective actions are delayed by policymakers, the more draconian their eventual actions will need to be.

Hence, the key challenge for our survey respondents has been the ambiguity about when climate change rises to the threshold of materiality. Many believe that it is close to the threshold, if not over it. This is reflected in their investment approaches. The underlying assumption is that, currently, a decarbonized portfolio

“
How institutional investors start to price the risk is going to be inconsistent and messy.”

Interview quote

does not necessarily equate to a decarbonized world. To establish a clear line of sight between them, network collaboration has become critical, with stewardship as its main tool (Case study 4a).

2 Seeking early mover advantage

a. Targeting multiple goals

Our respondents currently target a mix of benefits from their climate investing (Figure 4.2). Some focus on returns, some on risks, others on both.

Taking them in turn, far and away the most widely sought benefit is good risk-adjusted long-term returns (70 percent). Fifty four percent are also targeting a double bottom line — doing well financially and doing good environmentally.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Case study 4a: With money comes social responsibility and we take it seriously

We are a large private sector plan. Sustainability remains integral to the investment mandate from our board, which is directly appointed by all our members. At the global portfolio level, our goal is to implement a green transition in line with the Paris Agreement goals. Climate change is an increasing societal problem that is also fraught with investment risks across companies, industries and countries.

The board believes that physical risk and, to some extent, transition risk are not yet factored into securities prices. Progress is slow. To hasten its pace, and given the global nature of climate risks, we believe that collaboration with other investors is vital in influencing governments to promote a long-term stable regulatory framework and a better data infrastructure. Just as important is to exercise active ownership, based on the 'universal owner' idea, which aims for a green transition for our investee companies.

The EU taxonomy is the ray of hope that is expected to guide investors by providing a uniformity of labels and metrics. It provides data vendors with a robust framework that serves to improve the quality of data.

The US would need to play its role in aligning with the EU, and the Biden administration seems to finally get it. COP26 will be a game changer. We are directly involved, together with other investors, in some concrete plans to be presented and discussed at the conference.

A Danish pension plan

On the risk side, 66 percent target a more defensive portfolio that minimizes fat-tail/far-off risks. Fifty six percent target lower portfolio volatility and 33 percent target better diversification. As Covid-19 has shown all too clearly, low probability-high impact events can come like bolts from the blue and whipsaw portfolios at a time when many of the defined benefit pension plans in our sample are advancing rapidly in their run-off phase with aging demographics.

As we saw in Figure 1.3 in the *Executive Summary*, between a third and a half of our surveyed organizations believe that the markets are at least selectively pricing in climate risks already, especially since the collapse



We are hard-nosed investors looking for opportunities that will deliver good financial as well as environmental outcomes.

Interview quote

Figure 4.2: What benefits do you expect to receive when deciding to invest in climate change?



Source: KPMG/CAIA/CREATE-Research Survey 2021



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



of the Pacific Gas & Electric Company after raging fires in California in 2019. It showed all too clearly that valuation mirages can often conceal severe risks that are hiding in plain sight. So far, only the risks that are visible, especially visceral ones, have tended to attract attention: ‘event’ risk, as distinct from ‘erosion’ risk, seems to capture attention, as discussed in Case study 1c in the *Executive Summary*.

Behind the numbers in Figure 4.2 lie a number of interrelated considerations. First, while climate change remains only partially priced in by capital markets, it has to be part of a longer-horizon buy-and-hold strategy. Second, while climate change will affect every company’s business performance, its materiality will only become evident over time. Third, while the current generation of risk models lack good data, they will remain unsuited for predicting negative fat-tail/far-off risks that have no historical precedents. Fourth, while markets are slow to price in climate risks, they also carry early mover advantage. That the markets will be pricing in an existential risk like climate change before long is not in doubt. It is a matter of when, not if. In the meantime, bandwagon premium will come ahead of a double bottom line.

This is already evident in the stratospheric prices of many renewable energy companies currently. Hence, valuation mirages are frequent. A double bottom line requires governments and regulators to adopt policies that seek to create uniform expectations about incentives and penalties for ignoring climate risks in investment portfolios. These are slow to evolve. That is why it ranks fourth in Figure 4.2 currently.



Risk management is about predicting forward-looking volatility. ”

Interview quote

b. Understanding transmission channels

In addition, as recent examples of corporate failure on both sides of the Atlantic show, capital markets often do not recognize predictable risks until it’s too late. For pension plans in our survey, their risk measure is no longer the standard deviation of returns but the permanent impairment of capital. Their liquidity needs are no longer primarily dictated by the need for periodic opportunism but by the time profile of their liabilities. They prefer to remain invested in quality assets, so as to gain more by losing less and outperforming over a full market cycle.

That necessarily means avoiding companies trading at ‘brown’ discount on account of their high carbon footprint and investing in those capable of earning ‘green’ premium by reducing their footprint. There is evidence to show that both of them exist in the markets due to two transmission channels, according to a recent MSCI study.⁹

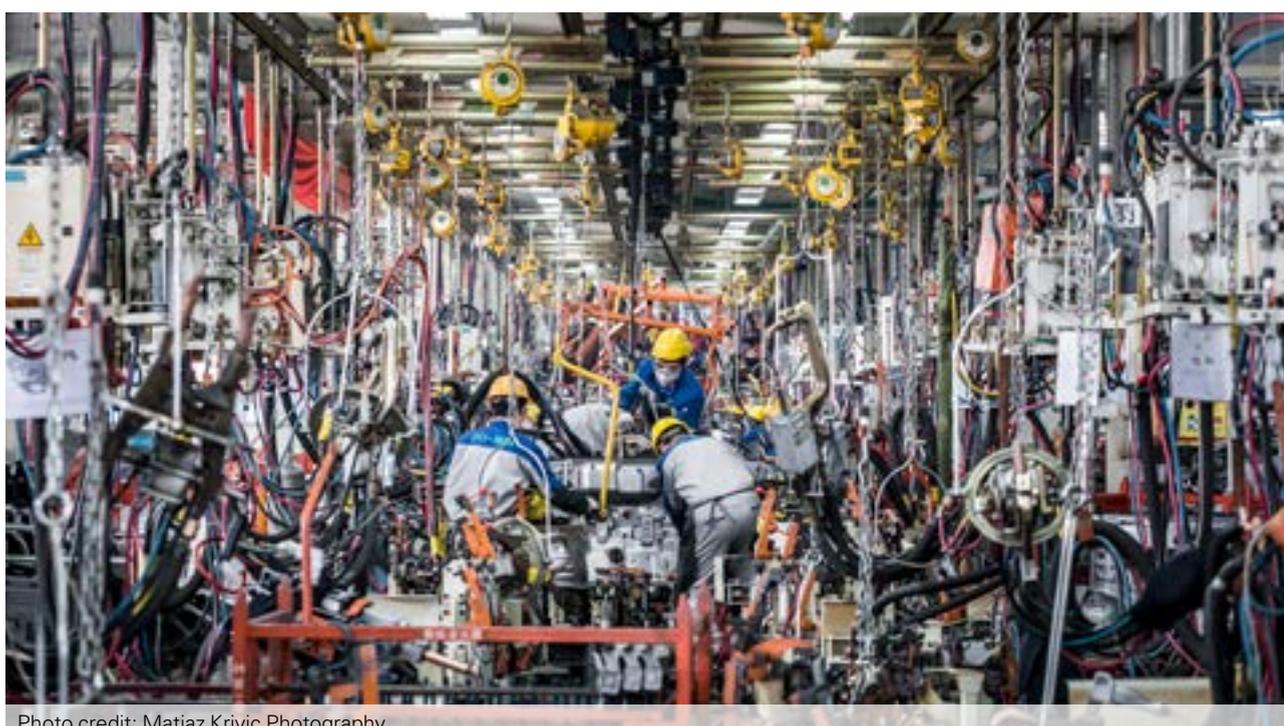


Photo credit: Matjaz Krivic Photography



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



The first channel is Nationally Determined Contributions: regions with higher NDCs had better financial performance. The second channel is carbon intensity: companies with higher intensity have seen a relative downward trend in their price-to-book valuation. In contrast, companies with high exposure to green revenue have seen their price-to-earnings ratio rise. Investors have been willing to pay an increasing premium to gain exposure to technology that is displacing fossil fuels. Indeed, funds with above-average sustainability ratings have seen big inflows this year — both in equities and bonds.

In the latter context, green bonds have reportedly delivered ‘greeniums’ as demand has far exceeded supply, as we shall see below. Additionally, the distance-to-default, a widely used market-based measure of corporate default risk, is negatively associated with the amount of a firm’s carbon intensity. Firms with a large carbon footprint are now perceived by the market as more likely to default, all other things being equal. Carbon intensity has an effect on corporate creditworthiness.

Such observations are suggestive, not conclusive. Correlation does not imply causation. After all, there is also evidence to show that superior past performance can also be linked to exposure to ‘quality’, an investment factor that is tied to financial metrics like high profitability and conservative investment, rather than their climate credentials. However, only 24 percent of our respondents subscribe to this view, as shown in Figure 2.2.

The reason is that, as universal owners of capital, they are more interested in newly emerging future risks than chasing backward-looking performance data. Their main aim is to use their collective heft to ensure that their

investee companies have strategies for survival and growth during the long disruptive transition to a low carbon future that lies ahead.

3 Scaling up asset coverage

a. Going from niche to mainstream

As we saw in Figure 1.6 in the *Executive Summary*, over 60 percent of our respondents believe that capital markets are likely to advance further towards pricing climate risks in the three broad asset classes over the next three years. This is duly reflected in the expected rise in the share of environment-related funds in their portfolios over the same period (Figure 4.3).

A notable 92 percent expect climate investing to advance in their total portfolio, implying that the inflows of recent years will continue for the foreseeable future — if not accelerate. When it comes to individual asset classes, however, the pattern will be variable between public equities, private market alternatives and public bonds, as covered below.

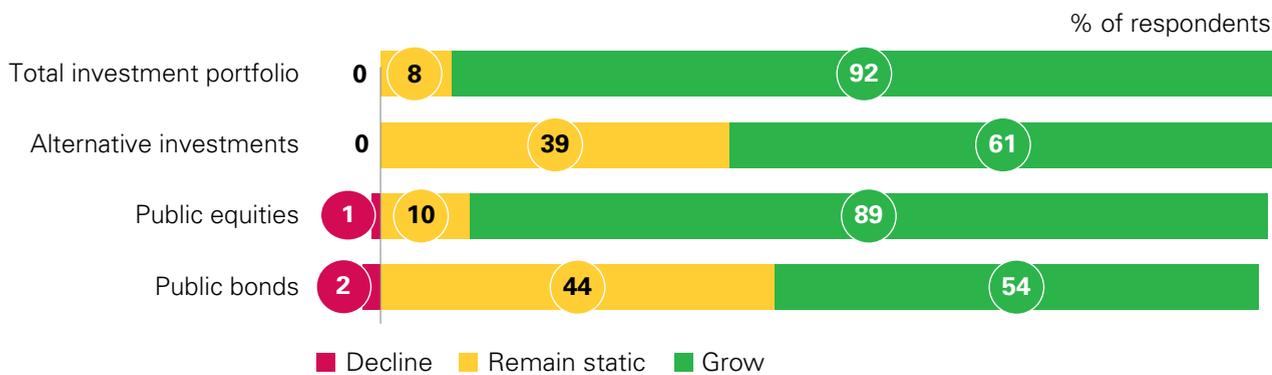


We are reaching the stage when replacing part of a regular government bond portfolio with green bonds is a logical and feasible



Interview quote

Figure 4.3: How is the share of climate investing likely to change in your portfolio over the next three years?



Source: KPMG/CAIA/CREATE-Research Survey 2021



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Case study 4b: Gathering momentum

As a signatory of PRI for many years, responsible investment has long been a part of our manager selection process. Lately, it has received major impetus with the development of a dedicated in-house ESG team. Working alongside our CIO, the ESG team also has near ‘veto’ authority over securities selections made by our portfolio managers.

Once external managers are selected, significant legal negotiations follow about the side letter that sets out our expectations of climate impact, stewardship and climate risk reporting. While meeting return expectations is still the starting point, we are increasingly moving away from asset managers whose climate consciousness is not aligned with ours.

We are now members of global alliances like TCFD, Climate Action 100+, the European Institutional Investors Group on Climate Change and CREM for real estate. Our collaborative engagement with securities issuers is a vital tool for achieving our sustainability goals at scale.

Currently, one of the key obstacles to progress relates to how ESG data is formulated, its reliability, its consistency, its timeliness, and its accessibility.

In this context, and in concert with COP26, the new administration in the US marks a tipping point. Its ambitious agenda includes, amongst others, mandatory disclosures on the carbon footprints of listed companies. The decision-useful information emerging from it will be vital for creating powerful signals for markets to redirect capital away from those companies that are overly exposed to climate risks and towards those who are redefining their business models towards a low-carbon future.

A UK pension plan

In this advance, public equities will occupy pole position in terms of breadth of holdings (89 percent). There are a number of contributory factors. To start with, mandated transparency in financial reporting is far more robust in public equity markets than in private markets. Their ready liquidity makes them an ideal vehicle for pursuing newly emerging themes like climate change and Sustainable Development Goals. Also, data vendors and index providers have made deeper in-roads into the equity space than elsewhere. These can ease challenges in both stock picking and the subsequent performance monitoring. Furthermore, many climate-tech companies are likely to be seeking fresh capital via initial public offerings. There is a new infrastructure in the making around alternative energy, its storage and distribution. Finally, and most importantly, public equities entitle investors to exercise stewardship and corporate engagement via AGM attendance, shareholder resolutions and proxy voting. Collaborating via global alliances like Climate Action 100+ and the Net Zero Investment Framework, investors have already been able to wield significant influence over some of the prominent oil majors and coal mining companies to provide plans for a net zero scenario, link senior executive compensation to Paris goals, and have a say on progress at every AGM. Beyond the AGM, they also have year-round conversations with their investee



If you are investing in companies that don't consider climate risk, then you are investing in dinosaurs.

Interview quote

companies. Stewardship is central to the concept of universal owners, as described in the *Executive Summary*.

In the general advance, alternatives rank just behind public equities (61 percent). All three key asset classes in private markets — real estate, infrastructure and private equities — are likely to see progress in pricing in climate risks.

In real estate, new energy efficiency standards are expected to be increasingly implemented in the legacy stock of buildings — commercial and residential.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



In infrastructure, a new generation of systems is likely to emerge in the creation and distribution of clean energy, as national grids progressively move away from fossil fuels. In private equity, ever more mega funds are likely to be launched for investments to fund tech companies that operate across the entire value chain of the low-carbon economy transition. Their focus on the long term, and unparalleled influence and touch points across the key sectors are seen as promoting them as major players in achieving net zero goals.

Finally, the advance towards pricing in climate risks will be relatively less broad-based in public bonds (54 percent). By its very nature, bond investing can be overly quantitative, focused as it is on interest rates, inflation, credit quality and liquidity risks. Hitherto, this has made it harder to incorporate climate change. To compound the problem, bond holders have no say at the AGM, nor can they engage in proxy voting or table shareholder resolutions.

To overcome these barriers, green bonds have proven a successful innovation that has experienced explosive growth — albeit from a low base. Their issuance hit a record high of US\$290 billion in 2020 (a 246 percent increase from 2016) and is on track to hit US\$500 billion in 2021, propelling the size of the green bond market to more than US\$1.2 trillion, according to data from the non-profit Climate Bond Initiative.

Issued by governments, semi-public bodies and major corporates to finance climate-related or

environmental projects, green bonds provide investors with transparency on the use of proceeds and a basis for engagement usually reserved for equity holders. With their overwhelming focus on climate change mitigation and adaptation, green bonds are already an effective tool for issuers to finance climate transition and for investors to greenify their portfolios and make a measurable impact. Given their recent origin, it is not yet clear how the transparency requirements will work in practice.

b. Democratizing impact investing

i. A pure play approach

Estimates from the UNCTAD World Investment Report show that an annual investment of US\$2.5–3 trillion is essential if the UN’s Sustainable Development Goals are to be met via funding from governments and financial markets. The current flow of capital into



Most innovations will come in private markets. Public markets will be used for adaptation and mitigation.



Interview quote



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Case study 4c: Perfection cannot be the enemy of progress

Markets are pricing in climate risks a lot more than they did three years ago when it was a niche topic. Coal is uninvestable and there are very few listed coal companies left. Utility companies are falling over themselves to reduce their exposure to fossil fuels. We are members of the Institutional Investors Group on Climate Change, consisting of over 300 asset managers with approximately US\$425 trillion in AuM.

As asset managers, we're used to incorporating difficult-to-measure factors into our decision-making. All we need is better quality, regulated, audited information from companies to help us progress towards impact investing. That's what our clients are demanding. There should be more mandatory disclosure. And the TCFD framework should be mandatory. Things are evolving in the right direction but not without hitches.

For example, companies welcome the EU taxonomy, but its 'do no significant harm' criteria are so detailed that it is hard to implement them. Even the best global companies with good ESG-reporting models have not produced enough public information for an investor to prove that they are fully aligned with the taxonomy.

Hopefully, we shall see a simplification as more people use it. The EU's Non Financial Reporting Directive will make a lot of these issues compulsory for companies and incentivize capital markets to price in climate risks in earnest. It's a matter of when, not if.

An Irish asset manager

climate mitigation and adaptation falls well short of what is required, according to our survey respondents. This, in the belief that the majority of flows into climate-related investing thus far has aimed to avoid the headline risk of investing in climate laggards.

As we saw in the *Executive Summary*, approaches such as the exclusion of carbon polluters, the integration of the environment factor in the investment process or shareholder engagement are so far seen as first-stage rockets: important for getting off the ground but not powerful enough to reach the final destination. At best, they signal the goals of the end-investors to the investee companies, without the sanctions that may be applied if these goals are not delivered over a definable period.

This is where a pure play approach like impact investing comes into its own. Currently, it has attracted US\$715 billion, according to the latest 2020 Global Impact Investment Network survey.¹⁰ It is less than one percent of the global pool of professionally managed assets. Having been the preserve of private markets so far, impact investing is expected to spread gradually to public markets, according to our survey respondents. As data challenges ease and with mandatory climate reporting in the offing in key jurisdictions, impact investing is set to receive fresh tailwinds.

Investors are now demanding to know how their capital is being deployed and to what effect, as concepts like materiality, intentionality and additionality are starting



Active ownership and impact investing are two sides of the same coin.



Interview quote

to dominate investment conversations. In return, investors are also eager to engage with investee companies — often in unison with their peers to avoid the 'free rider' problem. They perceive stewardship and impact investing as two sides of the same coin. The underlying idea is to use the rights and position of ownership to influence issuers' or companies' activities or behaviors.

The stars are gradually aligning (Case study 4c).

ii. Public equities

In public equities, impact investing is now being implemented by investing in companies on the basis of what specific environmental problems its products and services are designed to solve to make the world a better place. More often than not, this criterion is embedded in thematic investing which, in general, seeks to focus on secular mega trends that often reshape the world and create investment opportunities.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Past examples of technology and emerging economies are good at showing how such foundational trends can dominate capital market dynamics over extended periods. Initially, companies affected by them often trade at discount, since they do not readily appear on investors' radar. But then they go on to experience a powerful bandwagon effect, as their potential becomes evident.

Climate change faces a similar prospect, as investors aim to create measurable environmental impact alongside targeted financial returns. This approach is favored by large asset owners who prefer high-conviction long-term investing to meet their contractual liabilities over a multidecade horizon. In all cases, investee companies are expected to demonstrate quantifiable material improvement toward a better environmental footprint. For their part, investors are expected to exercise strong stewardship to ensure that outcomes match expectations.

iii. Public bonds

Moving on to public bonds, progress towards impact investing is likely to be spearheaded by green bonds, as described earlier. Thus far, their proceeds partially or fully finance projects with tangible environmental impacts — mainly in the transport and energy sectors — undertaken by sovereigns, quasi-sovereigns, public utilities and financial institutions.

A big catalyst lately has been the European Union's Green Deal and Green Recovery programmes. It envisages over US\$250 billion of public investment in clean energy, green infrastructure, low-carbon transportation, sustainable agriculture and biodiversity protection to reach its goal of being climate neutral by



TCFD should be mandatory.

Interview quote

2050. A substantial proportion of this investment is expected to be funded by the issuance of green bonds. Growth should be assisted by the EU's taxonomy for sustainable activities, which provides a framework of standards and rules for issuers and investors.

Similar taxonomies have also been developed by other regional umbrella bodies like the Association of the Southeast Asian Nations (ASEAN). Its framework aims to support issuers in financing environmentally sound and sustainable projects that foster a net zero emissions economy. By recommending that issuers report on the use of bond proceeds, it provides transparency on where funds are going and what their impacts are. Similar guidelines have also been issued by the People's Bank of China and the National Development and Reform Commission in China.

These are small steps but, over time, they could turn into giant leaps, if for no other reason than this: although green bonds are differentiated from other bonds by the exclusive use of proceeds, in almost every other sense their characteristics are remarkably similar. Importantly, green bonds hold the same payment rank to non-green bonds in the capital structure of the issuer and the ultimate recourse to that issuer. In the post-pandemic reconstruction, green bonds are likely to feature strongly. Thus far, the largest issuers have been Belgium, China, France, Germany, the Netherlands and the US.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



iv. Blended finance

Finally, turning to private markets, here, blended finance is expected to take off. It is a public-private partnership model for financing projects in climate mitigations and adaptation that combines an initial investment, often from a philanthropic or government entity, with subsequent investment from investors seeking commercial returns. Referred to as a concessional investment, this initial investment accepts a large share of the project's risk. The underlying idea is that since a low carbon environment is a 'public good', commercial investors cannot be expected to bear the lion's share of the risk in creating it.

As we saw in Figure 3.2, 60 percent of our respondents expect that governments will be beefing up blended finance to accelerate innovation in green technologies. Large institutional investors and private equity firms are increasingly likely to be drawn into the next generation of blended finance projects to harvest two distinct premia: investment premium by backing high-conviction long-horizon themes, and leverage premium by pooling their collective resources and harnessing the power of personal networks to create scalable investment strategies.

In particular, carbon capture and utilization systems as well as green hydrogen are vital for a low-carbon future. They are in the nascent stages of development that require high-risk equity capital upfront. The public sector is expected to play a leading role in two respects: first in setting policies and incentives that align commercial action with climate targets, and, secondly, in directly supporting new investments through blended finance solutions.

4 Putting stewardship at the heart of manager selection

When asked what criteria are now being used in selecting asset managers when investing in climate-related investing, our survey respondents identified various ones that fall into two clusters. Each is considered separately below. Of course, past performance matters; but so does the ability of managers to replicate that in the future. In that context, the two clusters here are seen as good proxies.



Climate-related initiatives are happening and there's a ton of momentum. I don't think it's a trend or a fad or anything like that.

Interview quote



Tabling resolutions at the AGM can really move the needle.

Interview quote

a. Acting as an active owner

One question that our survey respondents have had to struggle with is how to convert a company's carbon footprint into a simple numeric metric, while the data infrastructure remains work in progress. To overcome this challenge and also to promote the climate agenda, the key criterion in the asset manager selection process is stewardship and proxy voting track record and its outcomes, as cited by 81 percent of our survey respondents (Figure 4.4).

The underlying engagement approach needs to be focused on climate challenges within the context of corporate strategy, using a collaborative framework that is relevant for both companies and investors so as to maximize positive outcomes.

Given that effective corporate engagement requires a great deal of dialogue with management to create change over time, it is important to prioritize any engagement strategy by focusing on the most relevant companies in terms of risks and opportunities. Furthermore, to achieve the most effective engagement, it is essential to orient its goals around a framework that is both financially material and widely understood by corporate management teams. In this context, frameworks from two prominent non-profits are widely used among our survey respondents.

One is from the Task Force on Climate-related Financial Disclosures, which is now becoming a *de facto* gold standard in the key pension jurisdictions. Within the corporate context, it focuses on various aspects of climate change, including governance, risk management, target action areas, metrics, performance and disclosure.

The second framework is from the Transition Pathway Initiative, an asset owner-led initiative for assessing companies' preparedness for the transition to a low-carbon economy. It is preparing to move into assessing sovereigns, too. It is rapidly becoming the go-to corporate climate action benchmark. Implementing these frameworks requires a lot of tact and diplomacy. After all, transitional challenges are significant, as are cultural impediments (Case study 4d).



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



Figure 4.4: When investing in climate change, which criteria are taken into account when selecting external asset managers?



Source: KPMG/CAIA/CREATE-Research Survey 2021



Case study 4d: Stewardship — converting theory into practice

We only invest in companies that we can help, via stewardship, migrate from 'dark brown' to 'light brown' to 'light green' to 'dark green'. We draw a line in the sand about critical metrics like carbon emissions and board composition and then engage in dialogue with the boards. We also table resolutions at corporate AGMs on such issues, always in partnership with larger groups like Climate Action 100+ or Net Zero Alliance etc. From our long record of successful engagement, we have learnt three lessons.

First, the time horizon for acting on climate issues is a long one since it involves a radical overhaul of the prevailing business models at a time when corporates are trying to retain and grow their existing revenue streams to improve the EPS. In contrast, the time horizons of our institutional investors have become shorter in the past decade, as central bank policies inflated asset prices to unsustainable levels.

Second, having grand stewardship principles is one thing, implementing them is quite another. We have to be sensitive to the circumstances of individual companies, while seeking to establish a collaborative relationship with them. Their stakeholders make multiple claims on them — some complementary, some contradictory — all requiring a delicate balancing act.

Third, successful engagement requires our staff to have as much tact, empathy and diplomacy as business knowledge and personal gravitas. They need a deeper understanding of how corporate strategies are designed and implemented. They need to have industry experience as much as an understanding of the cultural nuances of individual businesses.

Above all, they must believe that their mission is to make a difference, rather than just going through the motions, hobnobbing with senior corporate executives and ticking the boxes, as has been the case historically. They should know that companies always talk a good game, so they must ask searching questions that seek to reveal the reality behind it.

A UK asset manager



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



That is not the only challenge. In economic terms, stewardship is also a non-excludable public good. That means that the benefits of engagement are enjoyed by all investors, irrespective of whether or not they behave as responsible long-term owners by investing in stewardship. The familiar ‘free rider’ problem is ever present.

In order to counter that, many of our survey respondents belong to various asset manager/ asset owner networks that work collaboratively when engaging with their target list of companies. Indeed, 63 percent of our survey respondents require membership of international networks — like the UN Principles of Responsible Investment, Climate Action 100+ and the Net Zero Asset Managers Initiative — in the manager selection process.

They typically vote against resolutions and directors, not against companies. They also have year-round behind-the-scene dialogue to ensure that not only are their views on adaptation and mitigation heard and acted upon, they also deliver results. To ensure meaningful engagement, their climate risk teams draw people from multiple disciplines such as technologists, lawyers, architects and portfolio managers.

b. Possessing core climate capabilities

To support their stewardship role, asset managers need a number of capabilities that feature on a manager’s selection list that are essential to deliver their clients’ climate change goals, as cited by 71 percent of our survey respondents (Figure 4.4).

These include: reporting capabilities (69 percent); expertise in three key aspects of climate transition, namely, materiality, intentionality and additionality (65 percent); a talent pool focused on delivering innovative solutions (62 percent); fees and charges that



Is anybody going to divest from a manager that doesn’t care or think about climate issues, if the performance is there? ”

Interview quote

reflect value for money (61 percent) and technology capabilities to access, analyze, and harness big data (56 percent). Behind these numbers lie two simple imperatives.

First, climate investing requires asset managers to move from being distant vendors to strategic partners by developing a strong alignment of interests.

On the financial side, it means having an equitable sharing of pain and gain with their clients, with a clear separation of alpha and beta. Clients no longer tolerate alpha fees for beta performance.

On the non-financial side, it means an alignment of investment beliefs and time horizons that minimize herding provoked by periodic volatility.

Second, the transition to a net zero world also requires asset managers to adapt their own business models beyond the reduction of their own operational footprints and set ambitious goals for greening their investment product offerings. It is essential to scale up the availability of investment options that are aligned with the net zero trajectory.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

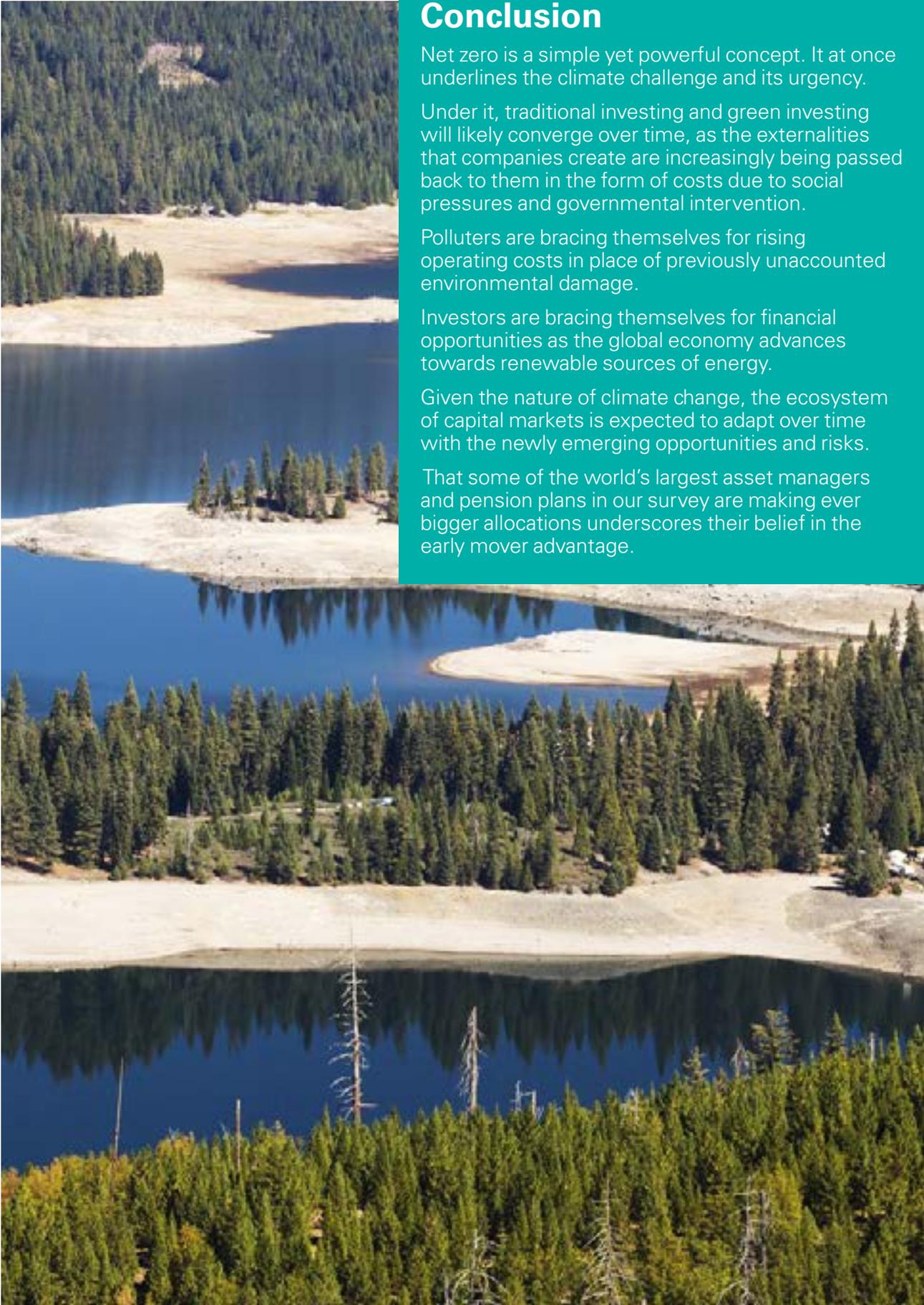
The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Conclusion

Net zero is a simple yet powerful concept. It at once underlines the climate challenge and its urgency.

Under it, traditional investing and green investing will likely converge over time, as the externalities that companies create are increasingly being passed back to them in the form of costs due to social pressures and governmental intervention.

Polluters are bracing themselves for rising operating costs in place of previously unaccounted environmental damage.

Investors are bracing themselves for financial opportunities as the global economy advances towards renewable sources of energy.

Given the nature of climate change, the ecosystem of capital markets is expected to adapt over time with the newly emerging opportunities and risks.

That some of the world's largest asset managers and pension plans in our survey are making ever bigger allocations underscores their belief in the early mover advantage.



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase



References

1. The US Commodity Futures Trading Commission: Managing Climate Risk in the US Financial System; a report of the Climate-Related Market Risk Subcommittee; September 2019.
2. Global Sustainable Investment Alliance: Global Sustainable Investment Review 2020.
3. World Bank: State and Trends of Carbon Pricing 2020; Washington, DC; May 2021.
4. Thinking Ahead Institute: Global Pension Assets Study 2021; Willis Towers Watson, 2021.
5. Climate Action Tracker: Overall Ratings, September 2021 Update.
6. Jenkins, Jesse D., Leah Stokes, and Gernot Wagner (Eds): Carbon Pricing and Innovation in a world of Political Constraints; Workshop Report; NYU Wagner, December 2020.
7. The Bank of International Settlements (BIS) and the Bank of France: The green swan; January 2020.
8. Pictet Asset Management: Climate change and emerging markets after Covid-19; a study by the Smith School of Enterprise and the Environment at the University of Oxford, 2021.
9. MSCI: Foundations of Climate Investing; September 2021.
10. Global Impact Investment Network: Annual Impact Investor Survey, 2020.



1

Executive
summary



2

Why progress
towards
climate pricing
has been slow



3

The next giant
leap forward:
areas of
progress



4

Climate investing
journey: the
next phase



Other publications from CREATE-Research

The following reports and numerous articles and papers on the emerging trends in global investments are available free at www.create-research.co.uk

- Rise of the social pillar of ESG (2021)
- Creating resilient pension portfolios post Covid-19 (2020)
- Sustainable investing: fast forwarding its evolution (2020)
- Addressing climate change in investment portfolios (2020)
- Quantitative easing: the end of the road for pension investors? (2019)
- Future 2024: Future-proofing your asset allocation in the age of mega trends (2019)
- The rise of stewardship (2019)
- Rocky Road for the European Union: Pension Plans' Response (2018)
- Passive investing: Reshaping the global investment landscape (2018)
- Alternative investments 3.0 (2018)
- Back to long-term investing in the age of geopolitical risk (2017)
- Active investing: Shaping its future in a disruptive environment (2017)
- Digitisation of asset and wealth management (2017)
- Expecting the unexpected: How pension plans are adapting to a post-Brexit world (2016)
- Financial Literacy: Smoothing the path to improved retirement savings (2016)
- 2008: A turning point in the history of investing (2016)
- How Pension Plans are Coping with Financial Repression (2015)
- Pragmatism Presides, Equities and Opportunism Rise (2015)
- Why the Internet Giants Will Not Conquer Asset Management (2015)
- Pension Dynamics: The Impact of the End of Compulsory Annuitisation in the UK (2015)
- Alpha behind Alpha: Rebooting the pension business models (2014)
- Not All Emerging Markets Are Created Equal (2014)
- Investing in a High Frequency Trading Environment (2014)
- Upping the Innovation Game in a Winner Takes All World (2013)
- A 360-Degree Approach to Preparing for Retirement (2013)
- Investing in a Debt-Fuelled World (2013)
- Market Volatility: Friend or Foe? (2012)
- Innovations in the Age of Volatility (2012)
- The Death of Common Sense: How Elegant Theories Contributed to the 2008 Market Collapse? (2012)
- Investment Innovations: Raising the Bar (2011)
- Exploiting Uncertainty in Investment Markets (2010)
- Future of Investments: the next move? (2009)
- DB & DC plans: Strengthening their delivery (2008)
- Global fund distribution: Bridging new frontiers (2008)
- Globalisation of Funds: Challenges and Opportunities (2007)
- Convergence and divergence between alternatives and long only funds (2007)
- Towards enhanced business governance (2006)
- Tomorrow's products for tomorrow's clients (2006)
- Comply and prosper: A risk-based approach to regulation (2006)
- Hedge funds: a catalyst reshaping global investment (2005)
- Raising the performance bar (2004)
- Revolutionary shifts, evolutionary responses (2003)
- Harnessing creativity to improve the bottom line (2001)
- Tomorrow's organisation: new mind-sets, new skills (2001)
- Fund management: new skills for a new age (2000)
- Good practices in knowledge creation and exchange (1999)
- Competing through skills (1999)
- Leading People (1996)



1

Executive summary



2

Why progress towards climate pricing has been slow



3

The next giant leap forward: areas of progress



4

Climate investing journey: the next phase





Report Contacts

Prof. Amin Rajan CEO

CREATE-Research
E: amin.rajan@create-research.co.uk

Anthony Cowell Head of Asset Management and KPMG IMPACT

KPMG Islands Group*
E: acowell@kpmg.ky

William J. Kelly CEO

CAIA Association
E: wkelly@caia.org



Global Contacts

Judd Caplain Global Head of Financial Services, KPMG International

E: jcaplain@kpmg.com

Bonn Liu Regional Head of Asset Management (ASPAC)

KPMG China
E: bonn.liu@kpmg.com

Andrew Weir Global Head of Asset Management KPMG International

E: andrew.weir@kpmg.com

Darina Barrett Regional Head of Asset Management (EMEA)

KPMG Ireland
E: darina.barrett@kpmg.ie

Greg Williams Regional Head of Asset Management (Americas)

KPMG in the US
E: gregorywilliams@kpmg.com

Tania Carnegie Global and US Lead, Private Equity and Asset Management – KPMG IMPACT

KPMG in the US
E: tcarnegie@kpmg.com



Country Contacts

Linda Elkins KPMG Australia

E: lindaelkins@kpmg.com.au

Gary Pickering KPMG in Bermuda

E: garypickering@kpmg.bm

James Loewen KPMG in Canada

E: jloewen@kpmg.ca

Arnaud Van Dijk KPMG in the Cayman Islands

E: avandijk1@kpmg.ky

Abby Wang KPMG China

E: abby.wang@kpmg.com

Harry Briggs KPMG in the Crown Dependencies

E: hbriggs@kpmg.com

Regis Chemouny KPMG in France

E: rchemouny@kpmg.fr

Hans Volkert Volckens KPMG in Germany

E: hvolckens@kpmg.com

Frank Gannon KPMG in Ireland

E: fgannon@kpmg.com

Giulio Carlo Dell'Amico KPMG in Italy

E: gdellamico@kpmg.it

Junya Kato KPMG in Japan

E: junya.kato@jp.kpmg.com

Chrystelle Veeckman KPMG in Luxembourg

E: chrystelle.veeckmans@kpmg.lu

Jeroen Ruepert KPMG in the Netherlands

E: ruepert.jeroen@kpmg.nl

Andrew Thompson KPMG in Singapore

E: andrewthompson8@kpmg.com.sg

Francisco J. Muñoz Neira KPMG in Spain

E: jmunozneira@kpmg.es

Simon Townend KPMG in The Bahamas

E: stownend@kpmg.com.bs

Jim Suglia KPMG in the US

E: jsuglia@kpmg.com

Rachel Hanger KPMG in the UK

E: rachel.hanger@kpmg.co.uk



KPMG IMPACT leaders

Richard Threlfall Global Head of KPMG IMPACT and Global Head of Infrastructure

KPMG International
E: richard.threlfall@kpmg.co.uk

Mike Hayes Global Head of Climate Change & Decarbonization, KPMG IMPACT

KPMG in Ireland
E: mike.hayes@kpmg.ie

Fernando Faria Global Deputy Head of KPMG IMPACT

KPMG in Brazil
E: fernandofaria@kpmg.com.br

[Meet our team — KPMG Global \(home.kpmg\)](#)

* KPMG Islands Group is a sub-regional network of KPMG member firms including The Bahamas, Barbados and the Eastern Caribbean, Bermuda, British Virgin Islands, Cayman Islands, Guernsey, Isle of Man, Jamaica, Jersey, Malta and Trinidad and Tobago.



1

Executive
summary



2

Why progress
towards
climate pricing
has been slow



3

The next giant
leap forward:
areas of
progress



4

Climate investing
journey: the
next phase



KPMG's global IMPACT and Asset Management practices offer specialized services to a wide range of clients at local, national and global levels. Our professionals are specialists in their fields and have deep experience with the issues and needs of the investment management business, and are committed to supporting our clients across all sectors as they work to make a positive difference and drive measurable change — both in their communities and globally.

KPMG IMPACT is the accelerator for KPMG's global ESG strategy. It is the platform which supports and empowers KPMG professionals as they assist clients in fulfilling their purpose, achieving their ESG goals, and supporting the world's attainment of the UN Sustainable Development Goals. It helps clients across ESG & Sustainability, Economic & Social Development, Sustainable Finance, Climate Change & Decarbonization, and Measurement, Assurance & Reporting. For more information, visit home.kpmg/IMPACT

KPMG member firms' asset management clients include investment managers, wealth managers, family offices, fund administrators and service providers who focus on mutual funds, hedge funds, private equity funds, infrastructure funds and real estate funds, and institutional investors for pension funds and sovereign wealth funds. KPMG firms aim to provide you with a tailored service of the highest standard. KPMG member firms are focused on exceptional objectives of building trusted relationships and delivering quality output through our project teams that can support you from anywhere in the world, whatever your investment activity or ESG goals.



create-research.co.uk

CREATE-Research is an independent research boutique specializing in strategic change and the newly emerging business models in global asset management. It undertakes major research assignments from prominent financial institutions and global companies. It works closely with senior decision makers in reputable organizations across Europe and the US. Its work is disseminated through high profile reports and events that attract wide attention in the media. Further information can be found at www.create-research.co.uk.

home.kpmg/socialmedia



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

The statements made in this report and the related case studies are based on the results of our survey and should not be construed as an endorsement by KPMG of the companies' goods or services. Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

The views and opinions expressed on page 2 are those of the author and do not necessarily represent the views and opinions of any KPMG International entity or any KPMG member firm.

KPMG refers to the global organization or to one or more of the member firms of KPMG International Limited ("KPMG International"), each of which is a separate legal entity. KPMG International Limited is a private English company limited by guarantee and does not provide services to clients. For more detail about our structure please visit home.kpmg/governance.

© 2021 Copyright owned by one or more of the KPMG International entities. KPMG International entities provide no services to clients. All rights reserved.

The KPMG name and logo are registered trademarks or trademarks of KPMG International.

Publication name: Can capital markets save the planet?

Publication number: 137744-G

Publication date: October 2021

