

2020 ESG trends to watch

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Executive summary

ESG themes are long-term, but some can emerge with sudden force. We are watching five trends we believe will unfold in 2020 to catapult ESG investing into the new decade.

1. Climate change innovators: spotting the sleeping giants

Solving the climate crisis is likely to take innovative technology, scalable deployment and a bit of luck. Many envision climate saviors coming in the form of plucky startups. But alternative data is hinting instead at big, established players, biding their time and quietly assembling an arsenal of climate solutions.

In 2020, investors turbocharge their use of alternative data to spot the companies plotting to take a lead in propelling us toward a carbon-free economy.

2. New terms for capital: ready or not, here comes ESG

Banks have stepped away from some gun makers, and investors have been keen to channel money toward green energy projects. But for the average, middle-of-the-road company, ESG has mostly been tossed to the corporate social responsibility office or used to prettify annual reports.

In 2020, ESG storms the CFO's office, elbowing its way onto the bottom line as financiers get creative with ways to bind ESG criteria to their terms of capital, introducing a plethora of corporate borrowers into the wide world of ESG.

3. Re-valuing real estate: investing in the eye of the hurricane

Wildfires, storms, floods, droughts, heat waves.... Just as real estate investors and managers begin to grapple with what climate change might do to their assets physically, now they may also have to contend with accelerating regulation. Location matters in real estate, and vast portions of the global property stock are in cities and regions marching toward zero-carbon building standards.

In 2020, greening the property portfolio will move from a nice-to-have reputation-booster to an imperative in the face of a looming "brown discount" if real estate investors don't kickstart their journey to zero carbon.

4. The new human capital paradox: juggling layoffs and shortages

It's time to retire old skills and bring new ones in, and fast. The pressure is on for companies to transform their workforces as competitors go digital, automated and everything in between. The trick is "How?" Workers aren't the only ones needing disparate new skills – HR and management likely do too.

In 2020, many more companies will have to become human capital multi-taskers, laying off some workers while simultaneously recruiting scarce new kinds of talent that may seem alien to management. Like a high-wire juggling act, any lapse could prove disastrous.

5. Keeping score on stakeholder capitalism: looking for accountability in all the new places

Stakeholders are hot right now. But glossy mission statements have done little to shift the enduring power dynamic between companies, shareholders and other stakeholders. Until now, only shareholders have had clear channels for holding companies to account. Bit by bit, other stakeholders are trying to influence the conversation.

In 2020, stakeholders without proxy cards will evolve their activism, joining forces with willing shareholders and using increasingly sophisticated means to size up whether companies really "walk the talk" when it comes to their stakeholder commitments.

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Climate change innovators: spotting the sleeping giants

Solving the climate crisis is likely to take innovative technology, scalable deployment and a bit of luck. Many envision climate saviors coming in the form of plucky startups. But alternative data is hinting instead at big, established players, biding their time and quietly assembling an arsenal of climate solutions.

In 2020, investors turbocharge their use of alternative data to spot the companies plotting to take a lead in propelling us toward a carbon-free economy.

Amid alarming climate change statistics, investors may find reason for optimism in investment opportunities in climate solutions and the global economic benefits that could follow. The Global Commission on the Economy and Climate estimated those benefits at USD 26 trillion through 2030 in its 2018 New Climate Economy report.¹ That would mean a doubling of investments in renewable energy over the coming decade, based on data from IRENA.²

Given the scale of investment opportunities at hand, the more traditional means of identifying them may not be enough. In 2020, we anticipate the race will be on for investors to ramp up their search for companies with solutions to halt carbon emissions, pushing them to harness alternative data sources that today are overlooked.

WILL GOLIATH BEAT DAVID THIS TIME AROUND?

Many envision climate salvation coming in the form of small, nimble startups with revolutionary vision. Perhaps a Tesla Inc., with the bold bets of an Elon Musk but minus the governance baggage. Empirical evidence, however, has indicated a U-shaped relationship between scale and innovation,³ suggesting that **larger companies with greater research-and-development (R&D) budgets could in fact have a greater propensity to innovate than smaller ones.**

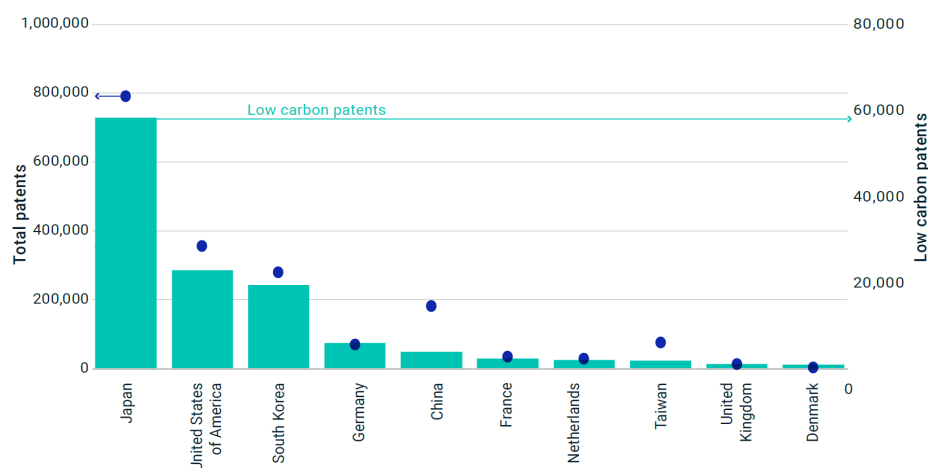
This perception may stem from the fact that existing channels for vetting opportunities, such as through venture-capital funds, cast a narrow net trawling for startups, ignoring the potential in the crowded R&D pipelines of large companies. But **technological advancements can help investors glean insights from rich, previously overlooked sources of information.**

We analyzed the database of registered technology patents from the European Patent Office, which, in 2015, developed a tagging scheme to specifically identify

climate-change-mitigation technologies from the Espacenet and PATSTAT databases. Together, these databases cover the patents filed with the vast majority of patent authorities worldwide. The initiative created 1,300 tags to classify patents related to subcategories such as climate-mitigation technologies, waste and the smart grid.⁴

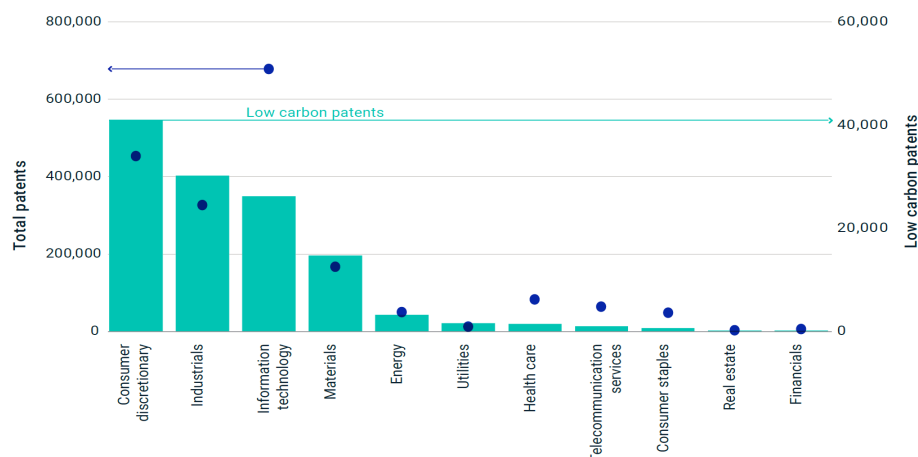
We examined the latest available five-year period of complete data: low-carbon patents filed between 2013 and 2017.⁵ Our analysis shows the companies that filed for the largest number of overall patents also filed for the most low-carbon patents during this period. This positive correlation implies that **companies with the most resources and large R&D budgets (more likely to file more patents overall) could also become the most capable of introducing efficient low-carbon solutions** into the market.⁶ The largest numbers of low-carbon patents were filed by companies in the consumer discretionary (including auto companies), industrials and information technology sectors, with the bulk, by far, filed by companies domiciled in Japan, followed by the U.S. and South Korea.

Exhibit 1: Cumulative number of low-carbon patents and total patents filed, by market



The chart shows cumulative figures for all patents and low-carbon technology patents from the European Patents Database for the calendar years 2013-2017. Data is for companies that were constituents of the MSCI ACWI Investable Market Index (IMI) as of Nov. 30, 2019, and for patents that were filed during the time period specified and were still effective as of Nov. 30, 2019.

Exhibit 2: Cumulative number of low-carbon patents and total patents filed, by sector

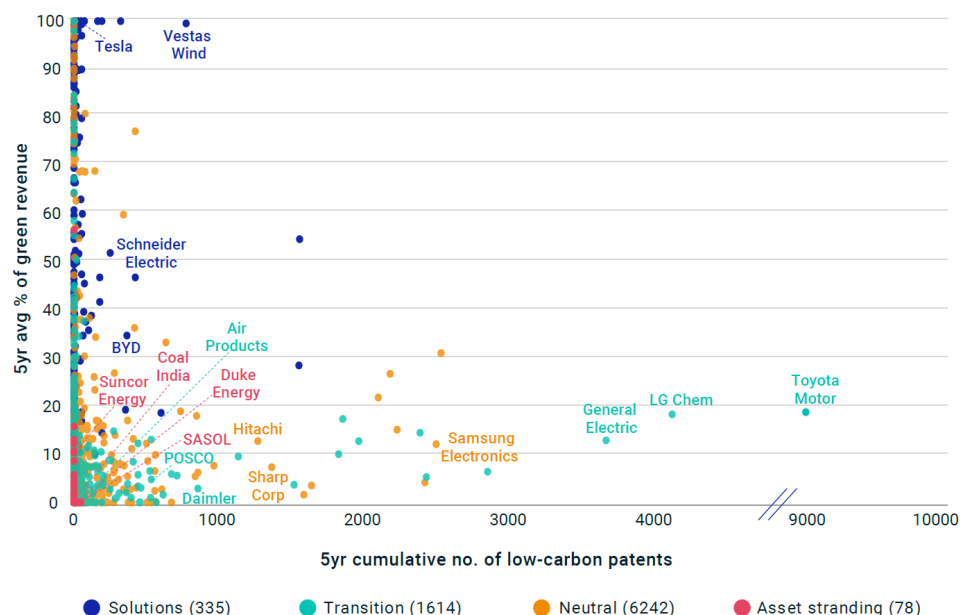


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SIZE OF GREEN SOLUTIONS REVENUE MAY NOT TELL THE FULL STORY

One surprise from this analysis is that companies that play a leading role with existing clean technology solutions may not be positioned to sustain their advantage in the coming decade. Our analysis of the 8,697 constituents of the MSCI ACWI IMI showed that some companies that have generated substantial revenue from green solutions⁷ in the last few years have filed for only a small number of the low-carbon patents that could underpin future revenue. Conversely, some of the largest filers for low-carbon patents over the past five years — such as Toyota Motor Corp., LG Chem Ltd. and General Electric Co. — generated less than 20% of their total corporate revenue from products and services that can be classified as green solutions.

Exhibit 3: Green revenue vs. low-carbon patents of companies, by their positioning for a low-carbon economy (solution provider, in transition, neutral, asset stranding)



The chart shows cumulative figures for all patents and low-carbon technology patents from the European Patents Database for the calendar years 2013-2017 and green revenue figures from MSCI ESG Research Sustainable Impact Metrics. Data is for companies that were constituents of the MSCI ACWI Investable Market Index (IMI) as of Nov. 30, 2019, and for patents that were filed during the time period specified and were still effective as of Nov. 30, 2019.

These companies belong in the large category of firms that are undergoing a “Product Transition” or “Operational Transition,” in terms of their competitive positioning for the shift to a low-carbon economy, based on MSCI’s categorization.⁸ **Companies in the “Transition” categories may be leaders in filing low-carbon patents, despite their current revenue stream not reflecting this potential.** Take Air Products & Chemicals Inc. as an example. The company has exposure to a range of end markets as a producer of atmospheric and hydrogen gases, but many of the 162 low-carbon patents filed by the company over the last five years relate to technologies that have yet to be fully commercialized, including hydrogen applications in transportation and carbon-capture technology. While these patents do not provide a guarantee of future revenue, a look at Air Products’ current revenue stream may undervalue its potential contribution to low-carbon solutions.

In fact, embedded among the 1,614 companies in the “Transition” categories are those that filed for nearly as many patents as those we classified as “Solutions” companies, which averaged 36 patents each. Among the top 50 filers of low-carbon patents, 48% were in the “Transition” categories, including Daimler AG, Royal Dutch Shell PLC and Toray Industries Inc. **These quiet innovators may be the “sleeping giants” of a greener future.**

WHO WILL KEEP THE GOOSE THAT LAYS THE GOLDEN EGGS?

There is much uncertainty over the ultimate value of any one low-carbon patent — and over the timelines in which inventors, companies and investors can expect any return. Decades of academic research into patents and their relationship to innovation and corporate value indicate that many market and operational factors determine whether companies will ultimately reap financial value from their patents.⁹ Further, research on the diffusion rate for renewable and clean technology has shown a lag time of up to several decades between when patents are filed and when innovations reach the market.¹⁰ Conversely, companies do not themselves have to invent new solutions in order to bring to market scalable innovations for which they, or their investors, ultimately reap financial rewards (think, for example, of Apple’s iPhone, or companies that license technologies developed by universities). And in some industries, such as power utilities that generate renewable energy, their ability to generate future green revenue depends less on their own inventive capacity than on others’.

Nevertheless, our analysis suggests two lessons. First, **sourcing potential winners may be enhanced by exploring alternative data sources.** Patent filings is only one such source. Second, **the competitive landscape in low-carbon technologies is highly dynamic, and only some companies will succeed in harnessing innovation** to mitigate the downside risks of future climate-policy evolution.

In 2020, we anticipate that a scramble continues to invent new solutions to mitigate our climate crisis. Investors may benefit from access to new sources of data and intelligence, as they try to spot the companies plotting for the future domination of the low-carbon market.

New terms for capital: ready or not, here comes ESG

Banks have stepped away from some gun makers, and investors have been keen to channel money toward green energy projects. But for the average, middle-of-the-road company, ESG has mostly been relegated to the corporate social responsibility office or used to prettify annual reports.

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A growing body of academic and industry research has indicated that companies with better-managed ESG risks tended to enjoy lower cost of capital — typically an indication that the market saw them as less risky.¹¹ This makes sense, given that we have also found that a set of developed market companies with stronger ESG quality tended to be less volatile and more resilient compared with their peers. For example, among companies in the MSCI World Index, those with the highest MSCI ESG Ratings experienced three times fewer incidents of dramatically sharp falls in share price than companies with the lowest ESG ratings (between January 2007 and May 2017).¹²

REAL MONEY ON THE LINE

Now companies and their bankers are putting this link to the test by **tying loan terms to ESG performance**. These ESG-linked loans totaled USD 71.3 billion from the first of the year through the end of the third quarter for 2019,¹³ more than double the volume raised in the same period in 2018. Examples include the Schuldschein market in Austria, where the margin paid by cellulose-fiber maker Lenzing Group steps up or down by 2.5 basis points (bps) if its ESG rating changes;¹⁴ and utility company Iberdrola, which signed a five-year syndicated credit facility that linked the credit margin to its targeted greenhouse-gas emissions.¹⁵

While it is still very early days, these loans are significant for two reasons:

1. There is a **direct, dollar-value payoff** for companies to better manage their ESG risks or meet stated sustainability commitments. These efforts no longer need to be justified on the grounds of loosely contributing to intangibles like reputation or brand value.

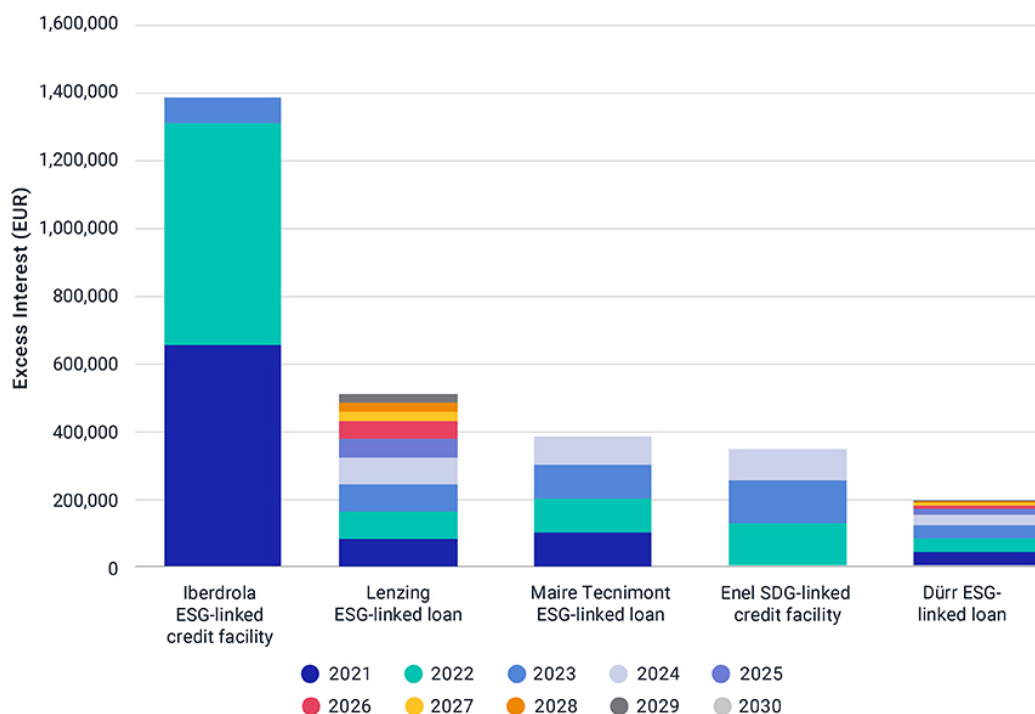
Our analysis of the few cases of publicly disclosed loan terms found that meeting or missing the stated ESG target — whether that is an ESG rating or carbon-emission reduction — ranged from a difference of approximately EUR 220,000 for a EUR 200

million loan over an eight-year term to approximately EUR 1,380,000 over three years, assuming that the firm uses 50% of a EUR 5 billion credit facility (see Exhibit 4 below).

2. **Any company can pursue these types of deals**, regardless of industry or core business activities. The ESG-linked loans we reviewed tie the entire issuer's operations to specified ESG targets such as carbon-emission reduction or ESG ratings that can be independently assessed.

Unlike green or sustainability bonds, these loans are tied to a company's ESG performance as a whole rather than to a specific qualifying green or social project for which the funds raised need to be ringfenced. Applying the ESG criteria to the issuer's overall operations maintains the transparency for the capital providers (lenders) while allowing a larger group of companies to access capital based on their ESG performance.

Exhibit 4: Step-up in excess interest for ESG-linked loans and credit facilities










We assume that if ESG-linked criteria were not met as of Dec. 31, 2020, for Lenzing, Dürr AG and Maire Tecnimont S.p.A., each of the above issues will incur a one-time margin step-up of 2.5 bps, 2 bps and 10 bps, respectively, which are stated publicly. We assume the credit facilities related to Iberdrola and Enel are each 50% drawn throughout their term. We assume Enel SpA incurs a 2.5-bp one-time margin step-up, similar to Iberdrola. We assume Iberdrola incurs a one-time margin step-up if the ESG-linked criteria are not met by Dec. 31, 2020. Enel will incur a step-up if SDG-linked criteria are not met by Dec. 31, 2021, which is stated publicly, as with its bond.

Sources: MSCI ESG Research; Thomson Reuters; "Lenzing Investor Presentation." Lenzing Group, Nov. 6, 2019; "Inexpensive, innovative and sustainable: Dürr issuing a Sustainability Schuldschein in the amount of € 200 million" Dürr AG, Jun. 19, 2019; "Maire Tecnimont confirms its commitment to Sustainability by finalizing an Esg-Linked Schuldschein Loan (Non Price Sensitive)" Maire Tecnimont, Dec. 13, 2019; "Iberdrola extends two multicurrency syndicated loans for €5.3 billion with the best conditions since 2007" Iberdrola, Jan. 29, 2018.

Providers of capital come with a range of motivations, with some that primarily care about leveraging ESG performance to reduce financial risk and others that primarily care about funding a measurable positive social or environmental impact that may or may not in fact bear any relationship to a company's financial quality. The beauty of

the loans is that the terms can, at least in theory, be specified to accommodate a range of different motivations.

Exhibit 5: What is an ESG-linked loan?

	Purpose	Create a time-bound financial link (via the interest rate) between a borrower's ESG target and its achievement.
	Use of proceeds	General-purpose use
	Interest rate	Interest rate changes based on success or failure in achieving ESG-linked target
	Borrower industry	Across industries
	Benefits to issuer/borrower	Potential for lower interest rate if target is achieved
	Benefits to investor/lender	Potential for higher interest rate if borrower does not meet target
	Size of market	~USD 100 billion*

**Total for 2019 Source: MSCI ESG Research*

NO ESCAPE?

Motivations for seeking and providing sustainability-linked financing may differ, but reputation matters to everyone — investors, bankers and companies. Even for companies not actively seeking a financing advantage or sustainability halo through these innovative funding mechanisms, their **access to capital may be increasingly filtered through an ESG lens** in ways they're not prepared for.

For example, heightened scrutiny of banks and the entities they fund has led some to pull back from reputationally fraught businesses. In the U.S., all the publicly known banks that provided credit facilities and term loans to private prison companies CoreCivic and GEO Group Inc. cut ties to the companies over the course of 2019.¹⁶

This occurred after these banks appeared on an activist list¹⁷ and faced high-profile protests outside their banks that linked their funding to their role in immigrant

detentions. In November 2019, American Outdoor Brands Corp. announced it would split its gun-manufacturing business from the rest of its outdoor-gear business, citing changes in the “economic, investing and insurance markets;” the many banks declining to do business with civilian gun manufacturers were making it difficult to finance the rest of the business.¹⁸

But the bulk of this new trend is unlikely to emerge in such cut-and-dried terms. Global asset managers such as DWS and BlackRock Inc. are moving to offer ESG money market funds.¹⁹ Each ESG money-market fund may aim to integrate different ESG criteria, from engagement with issuers on diversity to donating a portion of proceeds to carbon offsets.²⁰ **Companies relying on commercial paper for short-term borrowing could find themselves ineligible for fund inclusion**, even if they operate relatively non-controversial businesses.²¹

THE TIES THAT BOND

What’s next? For companies ready to capitalize on these new financing propositions, ESG performance could make a tangible difference to their bottom line. Creative juices are just beginning to flow among bankers, investors and companies who are collectively experimenting with novel ways to align business finance with longer-term risk management and sustainability goals. Even equities could be affected: Could companies issue not only green bonds, but green or sustainability shares? Are there equity structures that could enable share issuances aimed at funding certain qualifying business activities? For the modern-day CFO at any kind of company, 2020 may be the year when ESG becomes an inescapable part of the financing conversation.

Re-valuing real estate: investing in the eye of the hurricane

Wildfires, storms, floods, droughts, heat waves.... Just as real estate investors and managers begin to grapple with what climate change might do to their assets physically, now they have to contend with accelerating regulation. Location matters in real estate, and vast portions of the global property stock are in cities and regions marching toward zero-carbon building standards.

In 2020, greening the property portfolio moves from a nice-to-have reputation booster to an imperative in the face of a looming “brown discount” if real estate investors don’t kickstart their journey to zero carbon.

In 2019, raging fires threatened homes in Australia²² and California;²³ floods ravaged properties in the U.K.;²⁴ and Mexico City continued to sink as groundwater withdrawal from underlying aquifers surged.²⁵ Such weather-related risks are becoming a constant for real estate investors. For the real estate market, squaring off against physical risks to property value was the first major front they were fighting in the battle against climate change.

As the new decade kicks off, we expect a second front to noticeably expand in 2020. **Real estate investors may have to contend with a more-relevant “brown discount” hitting their portfolios as regulators and physical risk act as dual stressors on the market.** This brown discount would penalize properties not transitioning toward zero-carbon emissions — the type of market shift aligned with tightening standards in key property markets around the world.

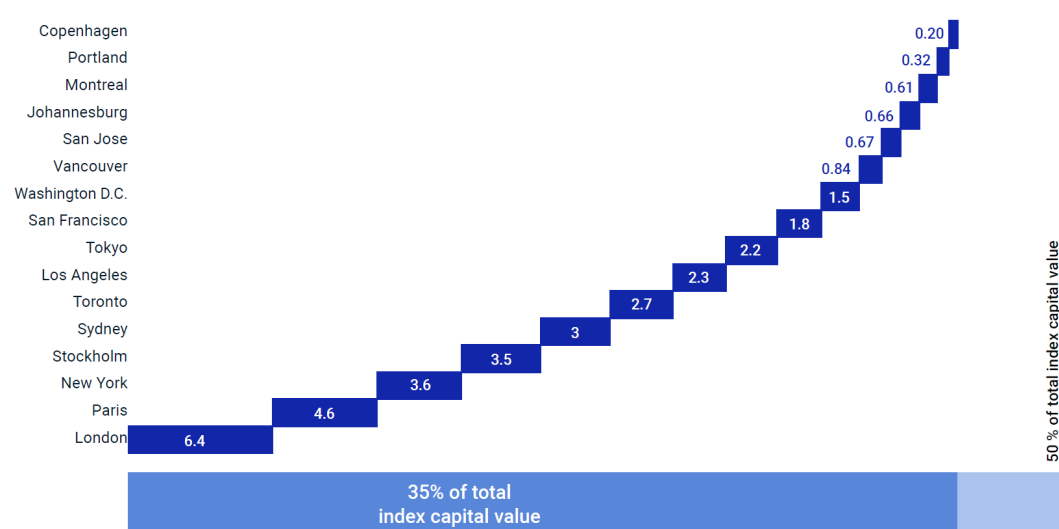
THINK GLOBALLY, REGULATE LOCALLY

When it comes to carbon reduction, global or regional commitments such as the Paris Agreement and the EU’s resolution to decarbonize all buildings by 2050, alongside country-level commitments, dominate policy discussions and command media attention. But for real estate investors, often what happens at the local level can matter most. **Nineteen cities globally have committed to achieve net-zero carbon emissions in new buildings by 2030, and for all existing buildings by 2050.**²⁶ Together, these cities represent a total population of 130 million and approximately 35% — an estimated USD 622 billion — of the total capital value of all the properties in MSCI’s Global Annual Property Index, as of Dec. 31, 2018.²⁷

MSCI's Global Annual Property Index tracks the performance of professionally managed real estate by weighing real estate investment returns across 25 countries according to their estimated market sizes.

By the end of 2018, the value of these directly measured real estate investment portfolios was USD 2.1 trillion.²⁸

Exhibit 6: Cities with net-zero-carbon commitments



The chart shows the individual and cumulative weight in the MSCI Global Annual Property Index as of Dec. 31, 2018, for the global cities that have committed to net-zero carbon emissions in new properties by 2030 and in all buildings by 2050. Source: MSCI Real Estate, MSCI ESG Research

This attention to local initiatives is especially notable for properties in the U.S., the largest real estate market in our coverage by capital value.²⁹ Investors might be lulled by the withdrawal of the U.S. from the Paris Agreement, but four of the 19 cities that committed to meet net-zero-carbon targets for their buildings are U.S. cities.³⁰ In addition to these commitments, New York City – the largest market in the U.S. by capital value³¹ – enacted a plan in 2019 to significantly slash emissions³² that would affect about 50,000 buildings and cost an estimated USD 20 billion in retrofit costs over the next decade, according to the Urban Green Council.³³

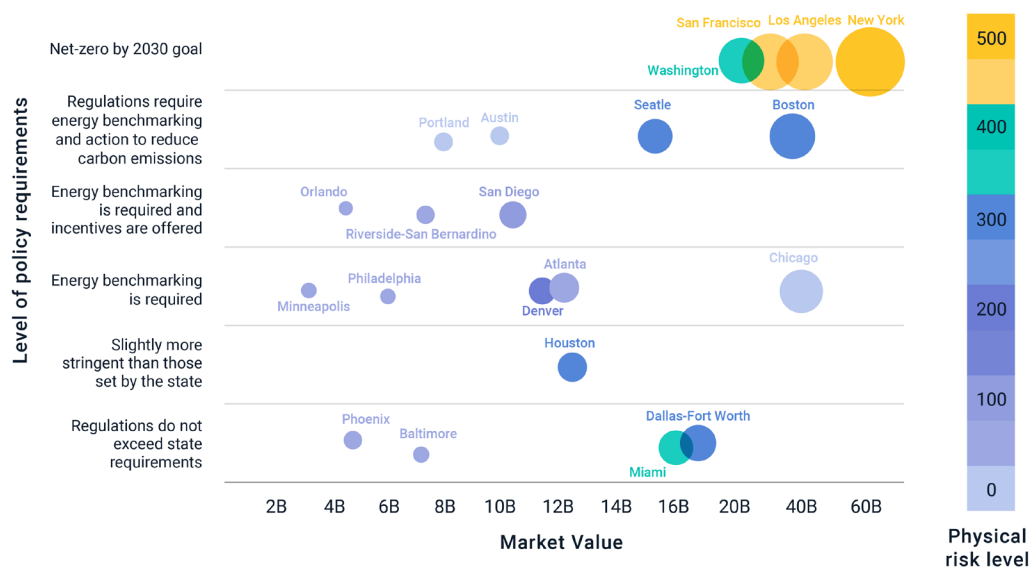
THE BATTLE OF THE BULGING CLIMATE-CHANGE RISKS

When combined, the two battlefronts – physical and regulatory risks – could stretch U.S. portfolios thin, given the variation of climate hazards and energy standards that exist across the distinct U.S. property markets.

We analyzed the exposure of the 4,354 U.S. properties within 21 cities represented in the MSCI Global Property Index to hurricanes, water stress and wildfire — three hazards projected to increase in frequency and intensity due to climate change. Additionally, we categorized these cities based on the stringency of local efficiency standards that have been enacted that, at times, exceeds those at the state level.

We found that 68% of the total capital value of U.S. properties in the MSCI Global Annual Property Index was exposed to at least one of the three climate hazards noted above. And 84% of the total capital value was in cities where building standards were more stringent than those imposed by the state (see Exhibit 7 below). Washington, Los Angeles and New York City — which, alone, represented an aggregate 37% of total capital value that we measured — were exposed to at least one of the climate hazards analyzed and also have committed to net-zero carbon emissions for new buildings by 2030.

Exhibit 7: Exposure to regulations and climate hazards, by real estate market



The chart shows the top 21 U.S. cities represented in the MSCI Global Property Index (those with at least 60 geocoded assets covered in the index), classified by the type of regulatory requirements adopted by each and the level of physical risk to which the cities are exposed. The following physical risks were assessed: hurricanes, water stress, and wildfire.

Sources: MSCI Real Estate, MSCI ESG Research LLC, American Council for Energy-Efficient Economy, World Resources Institute (WRI), U.S. Department of Agriculture, U.S. Forest Service, MunichRe. Data as of Dec. 31, 2018.

THE GREEN-PREMIUM CARROT BECOMES THE BROWN-DISCOUNT STICK

Initial indications of how decarbonization efforts have affected the real estate market have been seen for years in what some have referred to as a “green premium.”³⁴ That is, properties built to high energy standards appeared to command a rent premium in some markets.³⁵ Evidence for the competitiveness of buildings based on energy efficiency can be seen in Australia, where mandatory disclosure of the energy rating of each property has been in effect since 2010. Our analysis of Australian office properties in The Property Council/MSCI Australia Green Property Investment Digest³⁶ found that high-rated properties (a 4- to 6-star National Australian Built Environment Rating System, or NABERS, rating) had cumulative income returns over the past five years that were 40 to 60 bps higher, on average, than the low-rated properties, a differential that held across market segments.

As the market continues to mature in 2020, **green buildings may become the new normal, compressing the market into one where a brown discount is put onto buildings struggling to meet new energy standards.** A brown discount works like this: Property values are significantly driven by the present value of future expected rental cash flow — net costs — over the anticipated life of the property. So anything that affects a property’s ability to generate profit from rental income will ultimately impact its value. Much of the current building stock could face escalating capital and operating costs to meet increased carbon-emission standards and shore up defenses against climate hazards. At the same time, they may lag in attracting commercial tenants who seek more efficient properties with lower utility costs, higher comfort levels and increased climate resiliency, and offer the potential for commercial tenants to improve their own green credentials.³⁷

Unfortunately, the analytics to model the potential impact that emerging weather hazards and escalating regulatory standards will have on asset values remain nascent. As a result, few investors have undertaken a rigorous exercise to understand them. The good news is that a coalition of 12 institutional investors convened by the United Nations Environment Programme Finance Initiative recently took the first step.³⁸

This coalition conducted 1.5°C, 2°C and 3°C scenario-based analyses of their direct property investment portfolios, test-driving a state-of-the-art Climate Value-at-Risk (Climate VaR) Model developed by Carbon Delta AG (now the Climate Risk Center of MSCI ESG Research)³⁹ to assess the impact of carbon-related policy changes and physical climate-related risks on property market value.⁴⁰ The modeling was applied to a single portfolio of pooled assets from participating institutions, composed of nearly 1,000 anonymized assets with a total gross asset value of USD 78 billion and total floor area of 180 million square feet. The model found that — if policymakers

aimed for a 2°C climate transition and there was only average (rather than extreme) weather-related damage to the assets — the test portfolio faced an aggregated Climate VaR of -1.9% of gross asset value (USD 1.5 billion).

As hazard projections and the Climate VaR Model improve, these estimates may change — most likely in the direction of a more negative Climate VaR, as additional hazards and pass-through costs are better accounted for in the analytics.⁴¹ But one takeaway is that **while in the near term, valuations may be more significantly affected by physical risks than policy risks, potential costs were highly sensitive to policy changes**. Over 80% of the aggregate Climate VaR of -1.9% came from costs associated with physical risks already baked in over the next decade. But potential costs from policies double if policies shifted from targeting a 3°C to a 2°C world, and double again from targeting a 2°C to a 1.5°C world.

THE SIGNALS BECOME LOUDER

In a changing world, real estate investors can take solace in one constant — location still matters. Across markets, the physical effects of climate change and climate-related policies on a portfolio could vary markedly. In 2020, we estimate that the broad shape of climate risk for real estate will be further sketched out as climate-conscious investors steel themselves for battle on two fronts.

The new human capital paradox: juggling layoffs against shortages

It's time to retire old skills and bring new ones in, and fast. The pressure is on for companies to transform their workforces as competitors go digital, automated and everything in between. The trick is "How?" Workers aren't the only ones needing disparate new skills – HR and management do too.

In 2020, many more companies will have to become human capital multi-taskers, laying off some workers while simultaneously recruiting scarce new kinds of talent that may seem alien to management. Like a high-wire juggling act, any lapse could prove disastrous.

There are a lot of ways a juggling act can go wrong. A slip in timing, a touch too much ambition or a momentary distraction and it all comes tumbling down. Provident Financial PLC became an unwitting case study in what that could look like. In 2017, the U.K. provider of doorstep loans began eliminating its longstanding workforce of independent door-to-door salespeople-cum-debt collectors and replacing them with analytics software and a smaller number of permanent staff. The old hands left at a faster rate than the company could phase in the new systems,⁴² leaving the firm with a 50% hit to profits.⁴³

FEAST AND FAMINE

While Provident Financial was temporarily left with too few of the right kind of workers to get the job done, a lot of **human resources departments are dealing with shortages and gluts at the same time.**

This tension is starkly visible in the automobiles & components industry. Report after report of large-scale layoffs at industry stalwarts such as Ford Motor Co., Daimler AG and Nissan Motor Co. Ltd. in 2019 drew media attention and union protests.⁴⁴ The core of the issue was the move to electric cars, which are simpler to assemble: fewer parts; fewer complications; fewer workers.⁴⁵ Companies can use robots to do more of the work, and they can do it 24 hours a day without complaints, breaks or errors.⁴⁶ Yet while the engine technology is becoming less complex, the actual vehicles are shifting from hardware machines to more complicated software-driven electronics. By 2030, software is expected to make up 30% of the value of the typical vehicle.⁴⁷

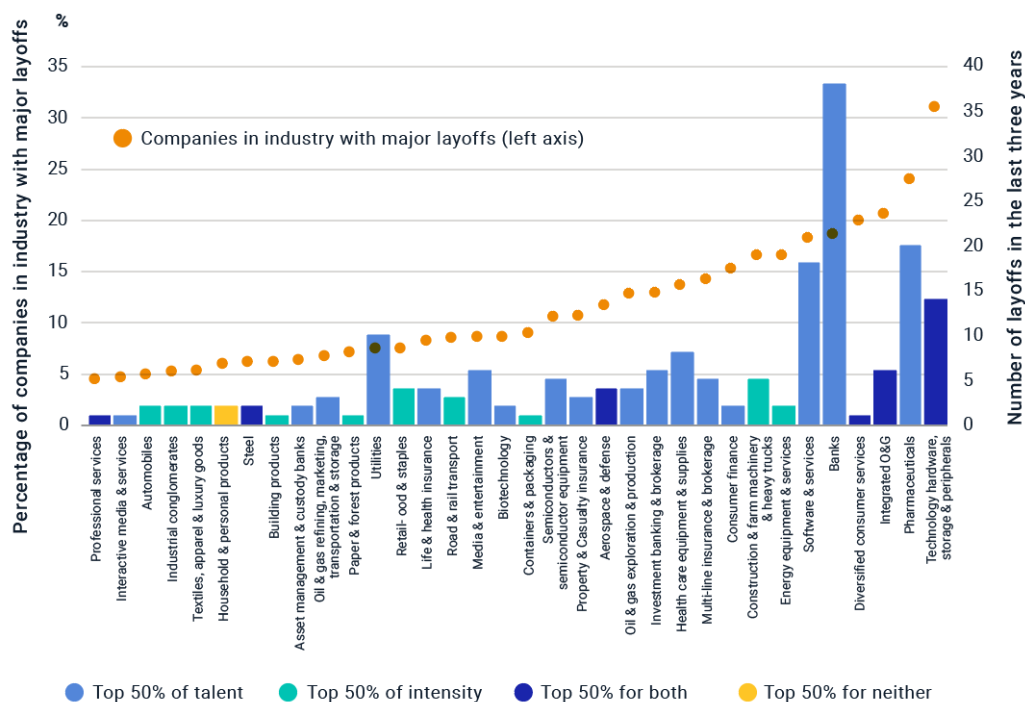
Despite layoffs, this change has led to reports of talent shortages around the globe^{48,49} as automakers struggle to meet new demands. Volkswagen, for example,

has said that it “urgently need[s] more engineers with competence in software development.”⁵⁰

It is not hard to find other examples. For instance, in years past, Hon Hai Precision Industry Co. Ltd., frequently referred to as Foxconn, was synonymous with grueling labor practices in the minds of some labor advocates and investors, most notably after a series of worker suicides in 2010.⁵¹ Foxconn still employs hundreds of thousands assembling electronics, but the company has nearly halved its workforce in just seven years, in part through ongoing automation.⁵² It has also announced substantial investments in artificial intelligence and related technologies, including adding staff with these skills; and subsidiaries like Foxconn Industrial Internet (which went public in 2018) have been pushing in-house technology development as the market for outsourced electronics manufacturing has diminished.⁵³

Exhibit 8 illustrates just how common these types of scenarios may prove to be. Among the 65 MSCI ESG industries, there were 33 in which at least 5% of companies had undergone major layoffs in the previous three years.⁵⁴ Of these, 25 were found among the top half of all industries by average talent requirements.

Exhibit 8: Layoffs were frequent in industries with high talent needs and labor intensity



The chart shows the number (bars) and percentage (dots) of companies per industry with major layoff events in the past three years (defined as ≥ 10% of the workforce or 1,000 workers). Only industries where at

least 5% of companies underwent layoffs are displayed on the chart. Average talent requirements are based on U.S. Bureau of Labor Statistics data on business segments' average employee salary and education level; labor intensity is based on revenue per employee. Color coding in the chart identifies industries in the top 50% of all industries by average talent requirements (green) and by labor intensity (light blue); some industries met both criteria (dark blue) and only household & personal products met neither criterion (yellow). Data is for constituents of the MSCI ACWI Index as of June 30, 2019.

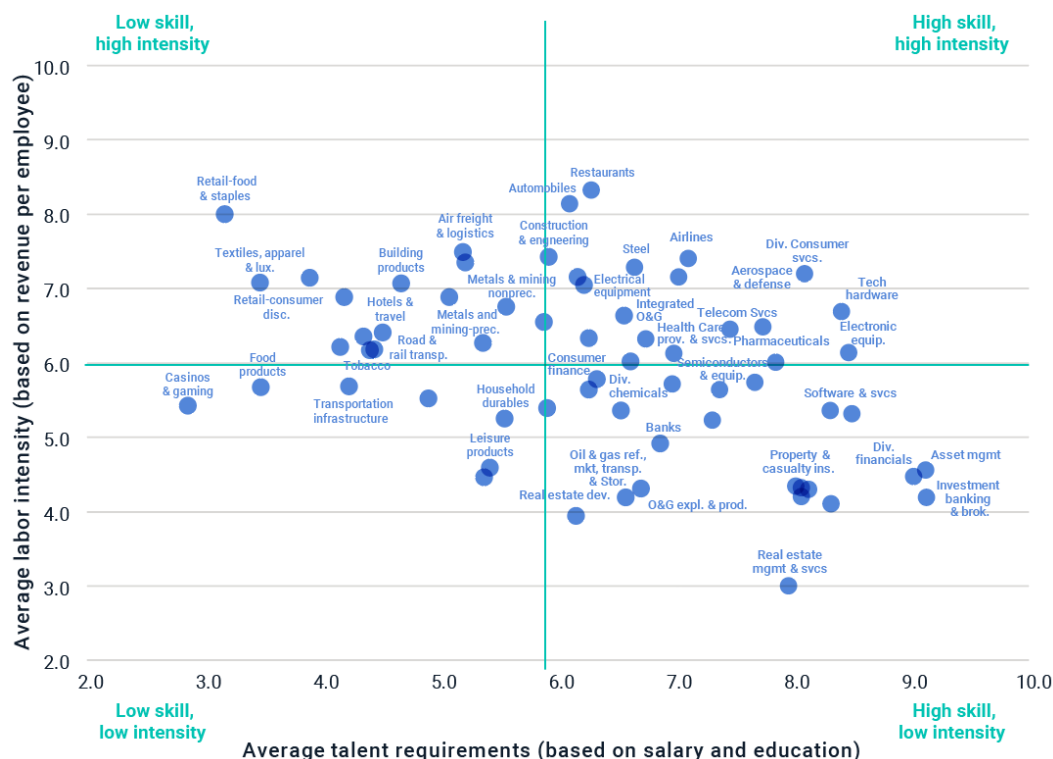
BEYOND THE USUAL SUSPECTS

The old understandings about which industries need what kinds of workers are being upended. Today the race to find talent with the right capabilities is drawing in not only companies in tech, health care and finance, but also energy companies, utilities, steelmakers and restaurants more.⁵⁵ **Companies likely to feel the pinch most acutely are those dealing with both kinds of transformation — simultaneously automating away one part of their workforce and building up a new part to compete effectively.**

Exhibit 9 plots a snapshot of the 65 MSCI ESG industries by their typical labor intensity (i.e., how much labor is needed to generate a unit of revenue) and skill requirements, as of June 30, 2019. Industries in the upper-right, “high-skill, high-intensity” quadrant may be under the greatest pressure today, but those in the upper-left “low-skill, high-intensity” quadrant may find their position shifting to the right over time as they work through the metamorphosis of their operations.

Additionally, this talent matrix itself is shifting, with the “average talent requirements” continually upping the ante. The financials industries that have traditionally been in the “high-skill, low-intensity” quadrant, for example, feel some of the same pressures to unload out-of-date skills on the one end,⁵⁶ and at the other to grasp at the scarce talent needed to reposition their companies to the cutting edge of data science.⁵⁷

Exhibit 9: MSCI ESG industries by average talent requirements and labor intensity



The chart shows MSCI ESG industries plotted by their average talent requirements (from U.S. Bureau of Labor Statistics data on business segments' average employee salary and education level) and average labor intensity (revenue per employee). Data is for constituents of the MSCI ACWI Index as of June 30, 2019.

DEVELOPING AMBIDEXTERITY

As we step onto the high-wire of 2020, we expect to see companies across the economy engaged in a delicate balancing act, trying to minimize disruptions from their existing workforce even as they purposefully create a new one. Some will be more successful than others. Institutional investors and the U.S. Securities and Exchange Commission are already watching, and the stakes are high.⁵⁸ With so many balls in the air, sure hands and a keen eye could make all the difference.

Keeping score on stakeholder capitalism: Looking for accountability in all the new places

Stakeholders are hot right now. But glossy mission statements have done little to shift the enduring power dynamic between companies, shareholders and other stakeholders. Until now, only shareholders have had clear channels for holding companies to account.

In 2020, stakeholders without proxy cards will work to evolve their activism, joining forces with willing shareholders, and using increasingly sophisticated means to size up whether companies really “walk the talk” when it comes to their stakeholder commitments.

Stakeholder capitalism is in vogue. A recent pair of grand statements from the U.S. Business Roundtable (BRT) and the World Economic Forum (WEF) have made this clear. In August 2019, the Business Roundtable asserted that “while each of our individual companies serves its own corporate purpose, we share a fundamental commitment to all of our stakeholders.”⁵⁹ The emphasis was theirs. The World Economic Forum followed in November with the “Davos Manifesto 2020,” proclaiming that “the purpose of a company is to engage all its stakeholders in shared and sustained value creation.”⁶⁰

In issuing the statements, this collective force of 600+ so-called purpose pledgers tilted away from the idea of shareholder primacy among stakeholders⁶¹ and back toward a more “equitable” realm of accountability to all. In both instances they even went so far as to list shareholders last. But before other stakeholders start celebrating, there is the question of accountability: How will we measure success? Who can hold the pledgers to their word and how? How much has truly changed?






ESTABLISHING A BASELINE

Measuring how companies serve their stakeholders today might be a good place to begin discussing accountability. Our analysis of the 500+ publicly listed purpose pledgers⁶² found that they start from a baseline not drastically different from their global peers (as represented by constituents of the MSCI World Index as of Dec. 19, 2019).

Interestingly, the pledgers were a bit more likely to have faced consumer-protection complaints or allegations of ethical misconduct than the broader universe of their peers,⁶³ but they tended to have suffered fewer worker injuries and forged more partnerships with their suppliers against corruption. On average, their CEOs were

paid around 20% more than their peers, and they received minimal negative votes against their directors. But few of the differences were stark. It seems **their explicitly stated intention to be purpose-driven set them apart more than their track record.**

Exhibit 10 : Measuring the “purpose pledgers” against their peers

STAKEHOLDERS	“PURPOSE PLEDGERS”	RELEVANT CRITERIA	MSCI WORLD INDEX PEERS
 CUSTOMERS	9.8%	Socially beneficial products/services	10.5%
	0.9%	Data privacy breaches	0.4%
	4.7%	Product quality problems	2.5%
	3.3%	Consumer protection violations	2.4%
 EMPLOYEES	33.1	Average 3-yr annual employee training hours	35.7
	33.0%	Average % women employees	34.6%
	2.8	Average injury rate	5.6
	7.8%	Employee discrimination allegations	3.8%
 SUPPLIERS	82.8%	Anti-corruption collaboration	68.9%
	73.2%	Product safety/quality training	56.1%
	1.6%	Anti-competitive allegations	0.7%
 COMMUNITIES	0.9%	Low tax payment	1.4%
	6.7%	Local community criticism / protests	2.0%
	335.9	Average 3-yr carbon emissions intensity	268.9
 SHAREHOLDERS	25.4%	Average % women on board	24.8%
	USD 12.0 mil	Average total CEO pay realized	USD 9.8 mil
	26.7%	Votes against directors	32.6%
	5.8%	CEO pay/performance misalignment	3.7%
	235.3%	Average 10-year total shareholder return	346.3%
	17.4%	Shareholders can nominate directors	18.3%

Measurements are based on data available for the publicly listed signatories of the World Economic Forum and Business Roundtable statements — the “purpose pledgers”— and the constituents of the MSCI World Index, as of Dec. 19, 2019. See appendix for more detailed descriptions of each criterion and sample sizes.

Source: MSCI ESG Research

But that’s merely a group snapshot from a high level. What about individual companies? Fortunately, there now exists a rich ecosystem of frameworks and guidelines⁶⁴ to help companies identify their key stakeholders and develop metrics to measure progress. One way for companies to articulate their intentions to

shareholders and other stakeholders could be an annual “Statement of Significant Audiences and Materiality” letter from the board of directors, as Bob Eccles and Tim Youmans proposed some years ago.⁶⁵

WHO HOLDS COMPANIES RESPONSIBLE, AND HOW

Measurement is only one piece of the accountability equation, however. There are also the enforcement mechanisms to ensure fulfillment of a pledge. Of all the stakeholders listed in the grand statements, **only shareholders have formal mechanisms to hold companies directly to account**. That doesn’t mean the others are powerless, but the formal power they hold is unequal.

Customers come first, as they are in the strongest position after shareholders. Beyond the longstanding power of the purse, social-media platforms have gained so much traction as an informal channel of accountability that companies maintain their own active online presence to respond to the running commentary, and a whole industry has been spawned to manipulate how companies are perceived online: fake reviews, fake re-tweets and fake followers.⁶⁶ The online effort for companies is worthwhile, as the internet economy is worth trillions,⁶⁷ partly due to the direct connection with customers to sell their goods over the platform. But this has created a unique space for the **growing power of customers to register dissent, not only as individual purchasers but as a collective social force**. If you want evidence, take a look at the 10.5% drop, over two days of trading in December 2019, in Peloton’s stock price after it aired a commercial that customers deemed sexist.

Employees are next; and while they have some recourse through the courts in most markets, the decline of union representation — trade-union membership has fallen to 16% from 30% in 1986 in OECD countries⁶⁸ — and the rise of contingent work,⁶⁹ their options have seemingly dwindled. Yet in the past two years, 2018 and 2019, a **handful of companies have been disrupted by a spontaneous wave of self-organizing among their employees**, many using internal company chatrooms and other digital forums. Google LLC had 20,000 employees walk out to protest the company’s handling of sexual-harassment allegations and workplace abuse,⁷⁰ and 500 Wayfair Inc. employees walked out after they discovered the company was selling mattresses to immigrant detention centers in the U.S.⁷¹ This new wave isn’t limited to workers in the West. The Anti-996 movement in China by Chinese tech workers — named after the common 9:00 a.m. to 9:00 p.m. shifts, six days a week — gained such traction that authorities in Beijing had to react to the growing discontent.⁷²

At the same time, these mostly digital channels for collective organizing may not have the direct influence employees are seeking, as we have seen them starting to

use their status as shareholders to try to effect change through more formal mechanisms.⁷³ Amazon.com Inc. saw its first employee-backed resolution in its 2019 proxy statement. The resolution asked the company to report publicly on how it plans to reduce reliance on fossil fuels and manage the risks posed by climate change. (The measure did not pass.) While this option is open to only the privileged few who own company shares, the point is still well-taken that these employees took a page out of shareholders' playbook. What's more, they have appealed to the broader shareholder group to join their fight, suggesting that the **new channels for holding companies accountable have allowed for louder voices, but aren't yet providing leverage comparable to formal governance mechanisms.**

Suppliers and *communities* are closer to the bottom of the list and are in a tougher spot. The former are engaged in a zero-sum game with each other vis-à-vis the company, while the latter (as classified by the BRT and WEF statements) is an amorphous hodgepodge encompassing all of the biosphere and society at large, where constituents surface from time to time mainly as the recipients of collateral damage in the context of our larger economic system. As with employees, only when shareholders have stepped in to lay claim to the interests of suppliers and communities — such as through voting policies and engagement campaigns for corporate disclosure of country-by-country tax payments⁷⁴ or carbon emissions⁷⁵ — have these normally faceless stakeholders gained some measure of corporate accountability.

If *shareholders* are at the bottom of the list, it's not because they are last in terms of importance, influence or ability to hold companies to account. With growing awareness that the well-being of their fellow stakeholders can matter to their own long-term results,⁷⁶ **shareholders are increasingly logical partners and amplifiers of fellow stakeholders' concerns.** Rejecting a CEO's pay package after a rash of product safety problems, demanding workforce diversity statistics or voting to require reporting on climate risk management may be part of a larger agenda or simply actions of enlightened self-interest with an eye toward more-resilient portfolios. Either way, they represent a convergence of interests — and they might just help show a joint path forward in 2020 and beyond.

Appendix

The table below provides details regarding the criteria used in Exhibit 10 to measure the “purpose pledgers” against their peers and the sample size for which data was available for each criterion. All data as of Dec. 19, 2019.

Stakeholder	Criterion	Description	Sample size (Purpose pledgers)	Sample size (MSCI World Index)
Customers	Socially beneficial products/services	Percentage of companies with social impact revenue as defined by MSCI ESG Research Sustainable Impact Metrics	439 companies	1,637 companies
	Data privacy breaches	Percentage of companies with severe or very severe controversies regarding data privacy and security, per MSCI ESG Controversies	451	1,640
	Product quality problems	Percentage of companies with severe or very severe controversies regarding product quality or safety, per MSCI ESG Controversies	451	1,640
	Consumer protection violations	Percentage of companies with severe or very severe controversies regarding customer fraud or related issues, per MSCI ESG Controversies	451	1,640

Employees	Average 3-year annual employee training hours	Average number of training hours provided per employee in the last reported year, as reported by the company	93	282
	Average % women employees	Average percentage of women among all employees in the most recent year for which the company reported data	152	487
	Average injury rate	Average total recordable injury rate (TRIR) per million hours worked, for the most recent year reported by the company	61	161
	Employee discrimination allegations	Percentage of companies with severe or very severe controversies regarding workforce diversity or discrimination, per MSCI ESG Controversies	476	1,642
Suppliers	Anti-corruption collaboration	Percentage of companies reporting that they collaborate with suppliers in anti-corruption initiatives	384	1,608
	Product safety/quality training	Percentage of companies reporting that they provide product safety/quality training to suppliers	71	278
	Anti-competitive allegations	Percentage of companies with severe or very severe controversies	451	1,640

		regarding anti-competitive behavior, per MSCI ESG Controversies		
Communities	Low tax payment	Percentage of companies with an average gap of >20% between statutory tax rate and effective tax rate over the last 5 years	454	1,640
	Local community criticism/protests	Percentage of companies with severe or very severe controversies regarding impacts on communities, per MSCI ESG Controversies	451	1,640
	Average 3yr carbon emissions intensity	Average 3-year carbon intensity (Scope 1+2 tCO2e/USD million sales)	361	1,241
Shareholders	Average % women on board	Average percentage of women on the board of directors	447	1,640
	Average total CEO pay realized	Average annual total realized pay for the CEO (USD million)	395	1,394
	Votes against directors	Percentage of companies that faced significant negative or withheld shareholder votes against one or more directors in the last year	465	1,643
	CEO pay/performance misalignment	Percentage of companies where the CEO's equity pay failed to reflect the company's total	465	1,643

		shareholder return (TSR) performance of the last three and five years, per MSCI ESG Ratings methodology		
	Average 10-year total shareholder return	Equal weighted, as of Dec. 21, 2019, for those companies in each group for which 10 years of history was available	321	1,332
	Shareholders can nominate directors	Percentage of companies that had a provision where qualified shareholders can place director nominees on the annual meeting agenda	465	1,643



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² "Transforming the Energy System — and holding the line on the rise of global temperatures." International Renewable Energy Agency, Sept. 20, 2019.

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⁵ Of the more than 1 million carbon-mitigation patents families (hereinafter "patents") that have been filed and were still effective as of Nov. 30, 2019, we found that 33% were held by constituents of the MSCI ACWI Investable Market Index (IMI), as of that date. Because of a lag in the reporting of patent data from the various authorities, the latest complete year of patents filed was 2017.

⁶ The top 10% of low-carbon patent filers in our survey had an average market capitalization of USD 47 billion, versus USD 11 billion for the bottom 10%.

⁷ Data and analysis based on the MSCI ESG Sustainable Impact Metrics, which are designed to identify companies that derive revenue from products or services that address at least one of the major social and environmental challenges defined by the U.N.'s Sustainable Development Goals, as of Dec. 16, 2019. The categories referred to as "green revenues" are revenue associated with products and services that address the environmental themes of alternative energy, energy efficiency, green building, sustainable water and pollution prevention. MSCI's taxonomy for environmental technologies is also used for assessing eligibility for the Bloomberg Barclays MSCI Green Bond Index. For more detail, see: "Bloomberg Barclays MSCI Green Bond Indices: Bringing clarity to the green bond market through benchmark indices." Barclays and MSCI, December 2019.

⁸ Based on MSCI ESG Research's Low Carbon Transition Risk Assessment for companies. MSCI's classification distinguishes between companies that are in "Product Transition" and "Operational Transition." Companies in the "Product Transition" category face the risks of reduced demand for carbon-intensive products and services. Winners and losers are defined by the ability to shift product portfolio to low-carbon products. Companies in the "Process Transition" category face the risks of potential increased operational and capital cost due to carbon taxes and investment in carbon-emissions mitigation measures, leading to lower profitability. See: Sasarean, D. "Resilient carbon-transition portfolios: a road map." MSCI Blog, June 19, 2019.

⁹ Such factors include the importance of the patents, which can be measured by their number of forward and backward citations, as well as the countries they are filed in and the industries they are applicable to.

¹⁰ Using forward citations of the top 30 low-carbon patents as a proxy, Chatham House about a decade ago found that the average age of these "foundational" patents ranges between 19 years for wind-energy-related patents and 30 years for concentrated solar power. See: Lee, B., Iliev, I., and Preston, F. "Who Owns Our Low Carbon Future? Intellectual Property and Energy Technologies." Chatham House, September 2009.

¹¹ For example: Eccles, R., Ioannou, I., and Serafeim, G. 2014. "The Impact of Corporate Sustainability on Organizational Processes and Performance." *Management Science* 60 (11): 2835–2857; El Ghoul, S., Guedhami, O., Kwok, C., and Mishra, R. 2011. "Does Corporate Social Responsibility Affect the Cost of Capital?" *Journal of Banking and Finance* 35 (9): 2388–2406; Gregory, A., Tharyan, R., and Whittaker, J. 2014. "Corporate Social Responsibility and Firm Value: Disaggregating the Effects on Cash Flow, Risk and Growth." *Journal of Business Ethics* 124 (4): 633–657.

¹² Giese, G., Lee, L., Melas, D., Nagy, Z., and Nishikawa, L. 2019. "Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance" *Journal of Portfolio Management* 45 (5).

¹³ Guzman, D. "Growth in sustainability-linked loans boosts ESG ratings firms." Reuters, Oct. 21, 2019.

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¹⁸ Miller, K. and Mosendz, P. "American Outdoor to Split Into Two Firms, Separating Its Gun Business." Bloomberg, Nov. 13, 2019.

¹⁹ Nauman, Billy. "ESG money market funds grow by 15% in first half of 2019." *Financial Times*, July 14, 2019.

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²¹ Transparency into money market funds' holdings is difficult due to their high-turnover and short-duration characteristics, although the largest issuers of commercial paper tend to remain relatively stable year to year and consist of some of the largest publicly listed global companies. While the largest known issuers from the financial and nonfinancial sectors tend to have mostly average or higher ESG ratings, many have also been involved in recent ESG controversies ranging from ethics violations to labor litigation. In the past, problematic corporate behavior might have triggered investors to engage with the company; going forward, it could also more directly weigh on companies' access to capital, as ESG criteria are more widely applied across lending and investment activities. See, for example: Nauman, B. "ESG money market funds grow 15% in first half of 2019." *Financial Times*, July 14, 2019.

²² "Australia fires worsen as every state hits 40C." BBC, Dec. 30, 2019.

²³ "Wildfires cause turmoil in California property insurance market." Associated Press. Dec. 26, 2019.

²⁴ Temple-West, P. "Climate change increases flooding risk to homes, study shows." *Financial Times*, Oct. 28, 2019.

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²⁸ MSCI captures a large amount of information on individual real estate investment portfolios around the world, which forms the foundation of our market information products (Global Intel) and Enterprise Analytics for direct real estate holdings at the asset level. Teuben, B. and Bothra, H. 2019. "Real Estate Market Size 2018." MSCI Research Insight.

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³² "Climate Mobilization Act." New York City Council, April 18, 2019.

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