

Strategy & Corporate Finance Practice

# The state of internal carbon pricing

More and more companies are experimenting with internal carbon charges—but are their pricing thresholds correct?

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**Business leaders know that** sustainable growth is possible only when they anticipate inevitable shifts in policy, social norms, and technology that could affect their companies. One of the most prominent of these so-called transition risks is in the area of carbon emissions and the potential introduction of a universal price on carbon.

Given impending policy changes in this area, and with an eye toward protecting the health and livelihoods of customers and employees, some companies are experimenting with internal carbon pricing. That is, some companies are setting an internal charge on the amount of carbon dioxide emitted from assets and investment projects so they can see how, where, and when their emissions could affect their profit-and-loss (P&L) statements and investment choices. Internal carbon pricing was a key factor, for instance, in a European energy company's decision to close

several power plants, as the internal charge on increased carbon emissions cut into the expected profitability of those plants. Meanwhile, some US financial-services companies are using internal carbon pricing to identify low-carbon, high-return investment opportunities.

To better understand who is using internal carbon pricing and in which industries, we looked at data from companies that have disclosed information from their internal carbon-pricing programs.<sup>1</sup> Our research reveals growing interest and high variability in companies' use of these internal charges. Specifically, 23 percent of the approximately 2,600 companies in our data set indicated they are using an internal carbon charge, and another 22 percent plan to do so in the next two years. Of the top 100 companies in our global data set (based on 2019 revenue), the ones that most frequently reported using internal

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<sup>1</sup> Disclosures on internal carbon-pricing policy are documented by the CDP (Carbon Disclosure Project), a global organization focused on promoting corporate disclosure of environmental risks and impacts.

carbon pricing were those in the energy, materials, and financial industries. They were followed closely by the technology and industrial sectors (Exhibit 1).

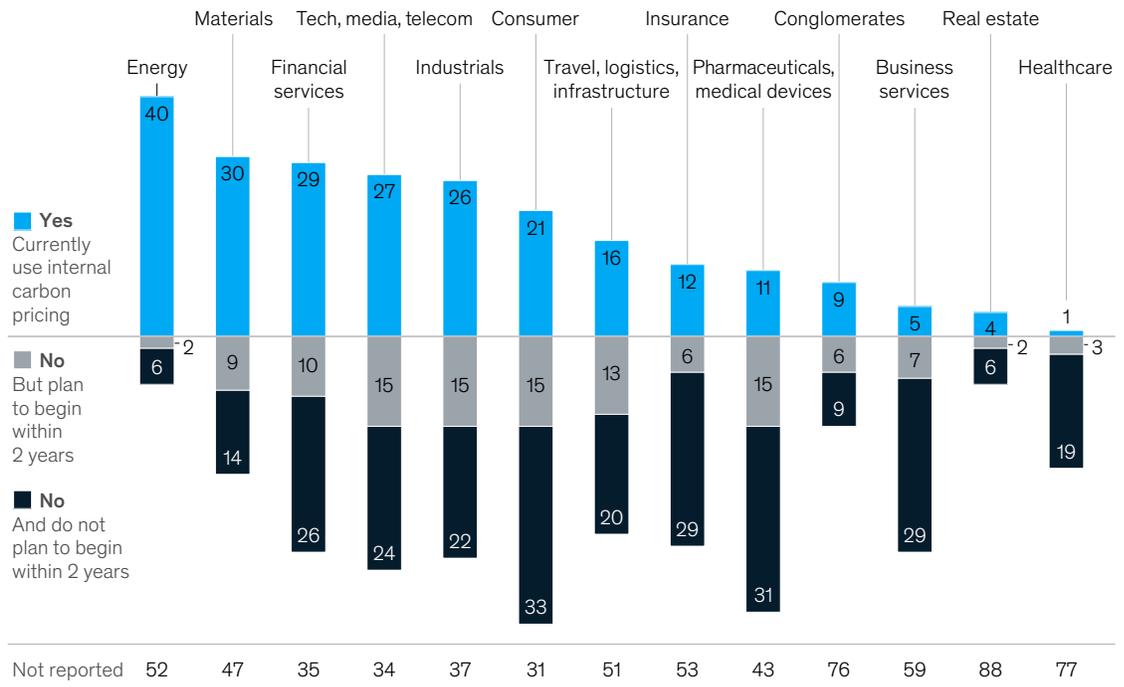
A geographic breakdown shows that 28 percent of companies in Europe are using internal carbon pricing. Japan, the United Kingdom, and the United States have the highest percentage of companies using this mechanism—with 24 percent, 20 percent, and 15 percent, respectively, of companies in those countries tallied.

A closer look at the data also shows that companies' thresholds for the price per metric ton of carbon used vary widely by region and industry. In Europe, for instance, the median internal charge is \$27 per metric ton, while in Asia it's \$18. This is not necessarily surprising, as there are currently no formal, defined global standards for pricing of carbon emissions. Companies are therefore selecting values that are most useful within their own business contexts and regions (Exhibit 2).

Exhibit 1

### Internal carbon pricing is most prevalent in energy, materials, and financial-services industries.

Use of carbon pricing by industry sector,<sup>1</sup>%

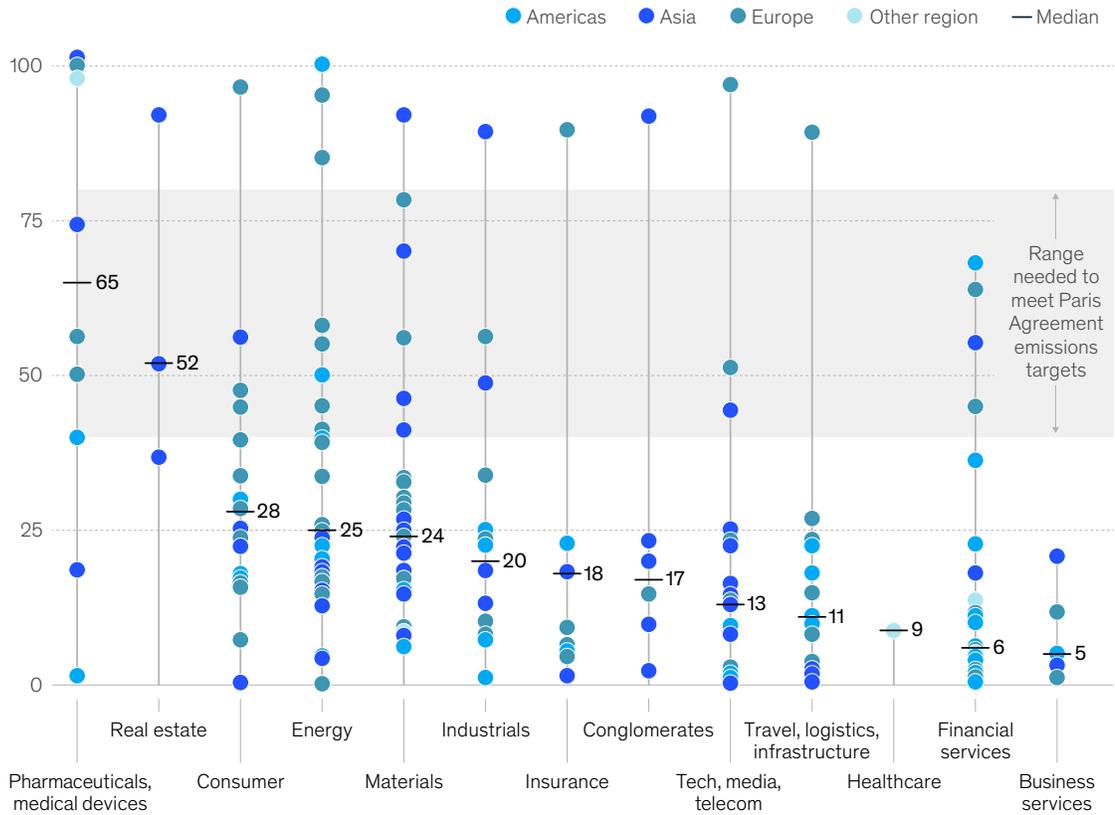


<sup>1</sup>Determined by a sampling of the top 100 companies ranked by 2019 revenue.  
Source: Responses from 2,600 companies reporting to the Carbon Disclosure Project (2019)

Exhibit 2

## The internal pricing of carbon emissions varies within and between industries and regions.

Distribution of internal carbon prices in 2019, \$



Source: Responses from 2,600 companies reporting to the Carbon Disclosure Project (2019)

Attempts to help companies identify optimal pricing standards are underway. Economists and advocacy groups have posited a broad range of potential pricing levels—from a few dollars to well over \$100 per metric ton, depending on the discount rate used, but the topic remains a point of contention.<sup>2</sup> For instance, the Environmental

Defense Fund (EDF), a nonprofit environmental-advocacy group, has estimated that the societal cost of carbon is greater than \$50 per metric ton emitted. But it also recognizes that, as others argue, this figure could be low because it does not yet factor in all potential externalities from the impact of climate change.<sup>3</sup>

<sup>2</sup> The choice of a discount rate is made by considering the trade-off between a known payment for carbon today and the potential negative impact of carbon in the future. There are different frameworks for evaluating which discount rates to use—for example, internal carbon pricing based on market-discount rates (which result in lower charges), ethics-driven discount rates (which result in higher charges), “descriptive” approaches determined by economic price, and “prescriptive” approaches that conform to an ideal. See Lawrence H. Goulder and Robertson C. Williams III, *The choice of discount rate for climate change policy evaluation*, *Climate Change Economics*, 2012, Volume 3, Number 4, [worldscientific.com](http://worldscientific.com); William Nordhaus, “Critical assumptions in the Stern Review on climate change,” *Science*, July 2007, [science.sciencemag.org](http://science.sciencemag.org).

<sup>3</sup> “The true cost of carbon pollution,” Environmental Defense Fund, EDF.org.

Meanwhile, the High-Level Commission on Carbon Prices has estimated that companies would need to set internal carbon pricing between \$40 and \$80 per metric ton in 2020 and between \$50 and \$100 per metric ton by 2030 to reduce emissions so they are in line with standards set in the Paris Agreement.<sup>4</sup> By contrast, most of the companies that report using internal carbon pricing have set their thresholds at around \$40 per metric ton. French company Danone, for instance, publicly reports its carbon-adjusted earnings per share (EPS) using an internal carbon pricing of €35 per metric ton emitted. Danone's adjusted EPS has grown faster than its regular EPS because of the company's reduced carbon intensity—for instance, in 2019, Danone's carbon-adjusted EPS grew 12 percent compared with the company's headline EPS growth of 8.3 percent.<sup>5</sup>

Corporate carbon accounting is just one means by which business leaders can manage transition risk, support corporate values, and improve their investment decision making—but it's a good step to take. Already, companies' internal carbon-pricing initiatives are affecting 22 percent of global greenhouse-gas emissions, up from 15 percent in 2017.<sup>6</sup> But as the research shows, the pricing thresholds currently being used are lower than they need to be to account for possible negative externalities from carbon emissions. If companies want their strategic decisions to fully reflect the risks and opportunities inherent in carbon emissions, they should take another look at internal carbon-pricing programs and recalibrate.

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<sup>4</sup> *Report of the High-Level Commission on Carbon Prices*, Carbon Pricing Leadership Coalition, May 2017, [carbonpricingleadership.org](https://www.carbonpricingleadership.org).

<sup>5</sup> "2019 full-year results," Danone, February 2020, [danone.com](https://www.danone.com).

<sup>6</sup> "State and trends of carbon pricing 2020," World Bank Group, May 2020, [openknowledge.worldbank.org](https://openknowledge.worldbank.org).