23rd Annual Global CEO Survey

Navigating the rising tide of uncertainty

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What a difference two years can make. In 2018, PwC's Annual Global CEO Survey revealed a record level of optimism regarding worldwide economic growth. This year, as CEOs look ahead to 2020, we see a record level of pessimism.

For the first time, more than half of the CEOs we surveyed believe the rate of global GDP growth will decline. This caution has translated into CEOs' low confidence in their own organisation's outlook. Only 27% of CEOs are 'very confident' in their prospects for revenue growth in 2020, a low level not seen since 2009. This finding is compelling because the change in CEOs' revenue confidence has proven to be a reliable indicator of both the direction and the level of global GDP growth in the year ahead, according to our analysis.

What is clouding the view from the top? In a word, uncertainty. PwC's 23rd Annual Global CEO Survey, which involved 1,581 chief executives in 83 territories, explores the sources and manifestations of uncertainty and how CEOs are taking action to address it. Conducted in September and October of 2019, this survey focuses on CEO insights in the following top-of-mind areas: growth, technology regulation, upskilling and climate change.

Four key themes emerged:

Uncertainty undermines outlook

No matter where CEOs look or from where they are looking, the path forward is fraught with uncertainty. And uncertainty weighs on growth. In the past two years, the percentage of CEOs who believe global GDP growth will decline has increased tenfold (from 5% to 53%). In every region, CEOs report increased pessimism. And in almost every region, they show significantly diminished confidence in their own organisation's 12-month revenue growth prospects. CEOs are more sanguine about the prospects for the coming three years; however, confidence levels are still at a low not seen since 2009. Over-regulation remains the top threat, but concern is also rising over uncertain economic growth, in particular, as well as over trade conflicts, climate change and cyber threats. The unknowns on all of these fronts cloud CEOs' outlook on the road ahead.

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Setting up guard rails in cyberspace

The internet — the great global connector and democratiser of information — is now confronting the unintended and dangerous consequences of its promise. With no effective global framework in place that can govern practices or control attacks on digital technology, a majority of CEOs surveyed foresee increasing legislation around online content, data privacy and dominant tech platforms. As a result, it is likely that the internet will become more fractured. The backlash against the internet's dominant model of one global, all-encompassing and all-knowing platform is an expected development — and may lead to a path forward that is at once more distributed and underpinned by certain common standards. If the global economy is to realise the full promise of the Fourth Industrial Revolution, a greater level of coordination on these issues will be necessary.

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To upskill or not to upskill is no longer the question

There are correlations among upskilling progress, economic optimism and revenue confidence. Furthermore, CEOs who have embraced the potential of upskilling are realising the rewards, such as a stronger corporate culture, greater innovation and higher workforce productivity. Those furthest along in the upskilling journey cite employee retention as the primary challenge, whereas those just beginning the process find motivation and lack of resources to be the biggest obstacles. One reality is clear: increases in automation, changes in demographics and new regulations will make it much harder for organisations to attract and retain the skilled talent they need to keep pace with the speed of technological change. They will have to grow their own future workforce.

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Climate change: an opportunity cloaked in crisis

The tide has turned on climate change. Organisations worldwide are starting to recognise its risks and even its potential opportunities. Compared with ten years ago, CEOs today are far more likely to see the benefits of going 'green,' such as reputational advantage, new product and service opportunities, and government or financial incentives. Looking at the results on a regional basis, there are some expected findings and a few concerning ones. Organisations in Western Europe and Asia-Pacific are furthest ahead in assessing the transition risks to a greener economy, which is not surprising, given government commitments to sustainability in these regions. By contrast, in the Middle East, where economies are most exposed to the global progression towards clean energy, organisations are comparatively behind in assessing the changes likely to result from a low-carbon future.

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1. Growth

Uncertainty undermines outlook

“I look at the pace of change; I look at the uncertainty in geopolitics; I look at the massive dislocation and rearrangement of global supply chains — there’s no way anybody can predict what’s going to happen in five years...The uncertainty we see today is unprecedented in the last 40 years. As a result, it’s taking growth out of the global economy.

Spencer Fung
Group CEO of Li & Fung, Hong Kong SAR, China

In the survey, CEOs express a record level of pessimism regarding the global economic outlook in 2020, with 53% projecting a decline in the rate of global economic growth, up sharply from 29% last year. Since 2012, when we began asking about the prospects for growth in the coming year, the share of CEOs projecting a decline has never reached, much less surpassed, 50% (see Exhibit 1). The number of CEOs who believe global economic growth will improve in 2020 dropped by a record share, from 42% to 22%. (To be clear, CEOs are commenting on the rate of economic growth, not whether the global economy will grow or shrink.)

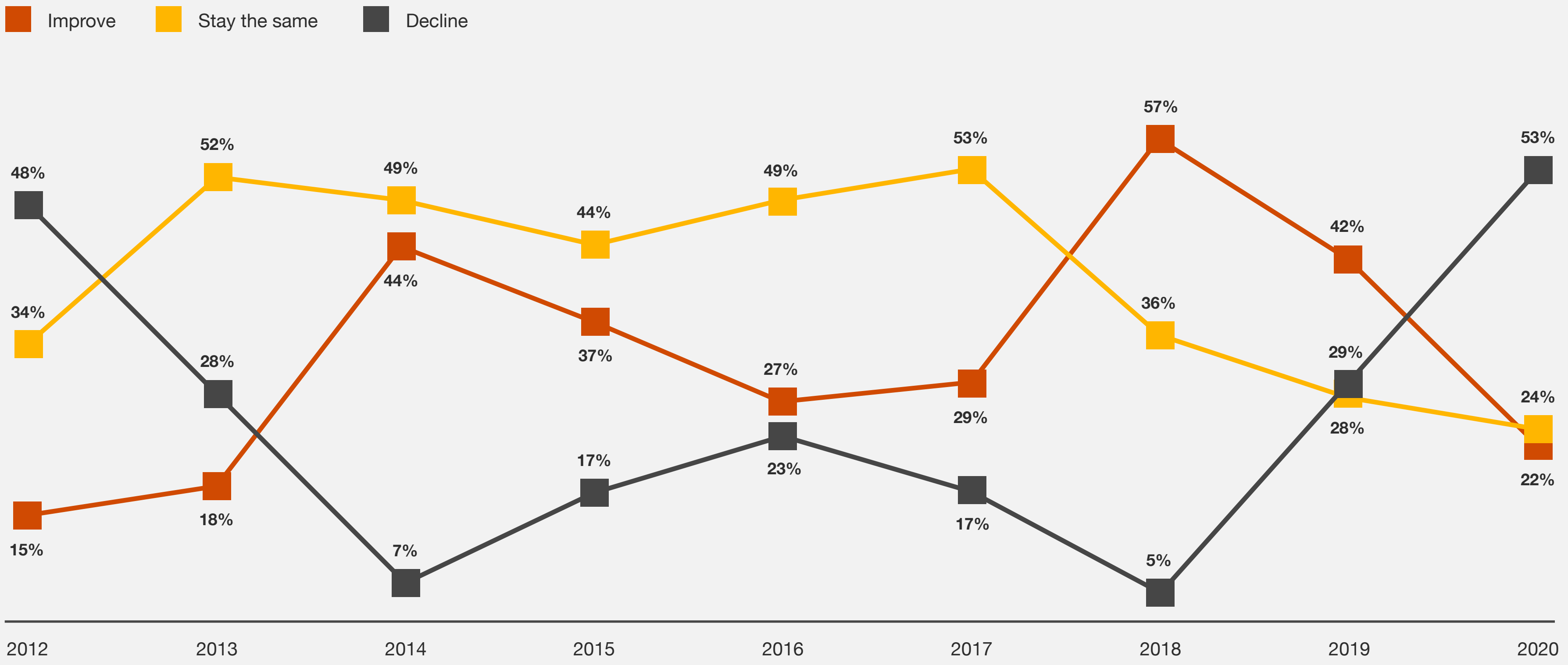
This sober outlook is all the more striking when one considers that CEOs reported a record level of optimism regarding the global economy just two years ago. In 2018, 57% of CEOs believed global GDP growth would improve in the coming year.

Exhibit 1

CEOs have shifted from record optimism to record pessimism over the past two years

Question

Do you believe global economic growth will improve, stay the same or decline over the next 12 months?



Source: PwC, 23rd Annual Global CEO Survey
Note: From 2012 to 2014, respondents were asked, 'Do you believe the global economy will improve, stay the same or decline over the next 12 months?'
Note: Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses
Base: Global respondents (2020=1,581; 2019=1,378; 2018=1,293; 2017=1,379; 2016=1,409; 2015=1,322; 2014=1,344; 2013=1,330; 2012=1,258)

Although the reversal is dramatic, CEOs' outlook is consistent with most economic forecasts as the global economy heads into its 11th year of expansion.

In its October 2019 forecast, the International Monetary Fund noted, "The global economy is in a synchronised slowdown and we are, once again, downgrading growth for 2019 to 3 percent, its slowest pace since the global financial crisis."[1]

To be clear, economic indicators in many markets remain positive. Unemployment in the OECD countries was at a record low 5.1% in 2019,[2] measures of global consumer confidence are elevated[3] and financial markets have been buoyant.[4] But growth has slowed around the world and, as the World Economic Forum reports, the outsized productivity gains promised by the Fourth Industrial Revolution, the collection of technologies that are reshaping the way people live and work, have yet to materialise.[5]

Demographics also weigh on labour markets around the world as the ranks of those retiring substantially outnumber those entering the workforce.[6]

But the principal factor accounting for expectations of declining GDP growth may well be what John Maynard Keynes described as 'animal spirits' — the human instincts, proclivities and emotion that can drive financial decision making in uncertain environments.[7] The uncertainty that looms over decision making on virtually every front can dampen animal spirits. And if there was one theme that rang out loudly in this year's survey responses — and in business headlines — it was a heightened sense of uncertainty.

In every region — Africa, Asia-Pacific, Central and Eastern Europe (CEE), Latin America (including Mexico), the Middle East, North America and Western Europe — the prevailing sentiment is the same: global economic growth will slow in 2020 (see Exhibit 2). The percentage of CEOs citing a decline in the rate of growth exceeds 50% in all but two regions: Asia-Pacific and CEE. Nowhere has the swing been more pronounced than in North America, where a record 63% of chief executives believe the global growth rate will decline. Two years ago, the same record share of North America CEOs (63%) said the opposite, that the global economy would improve (buoyed in the US by the fiscal stimulus of the Tax Cuts and Jobs Act).

63%

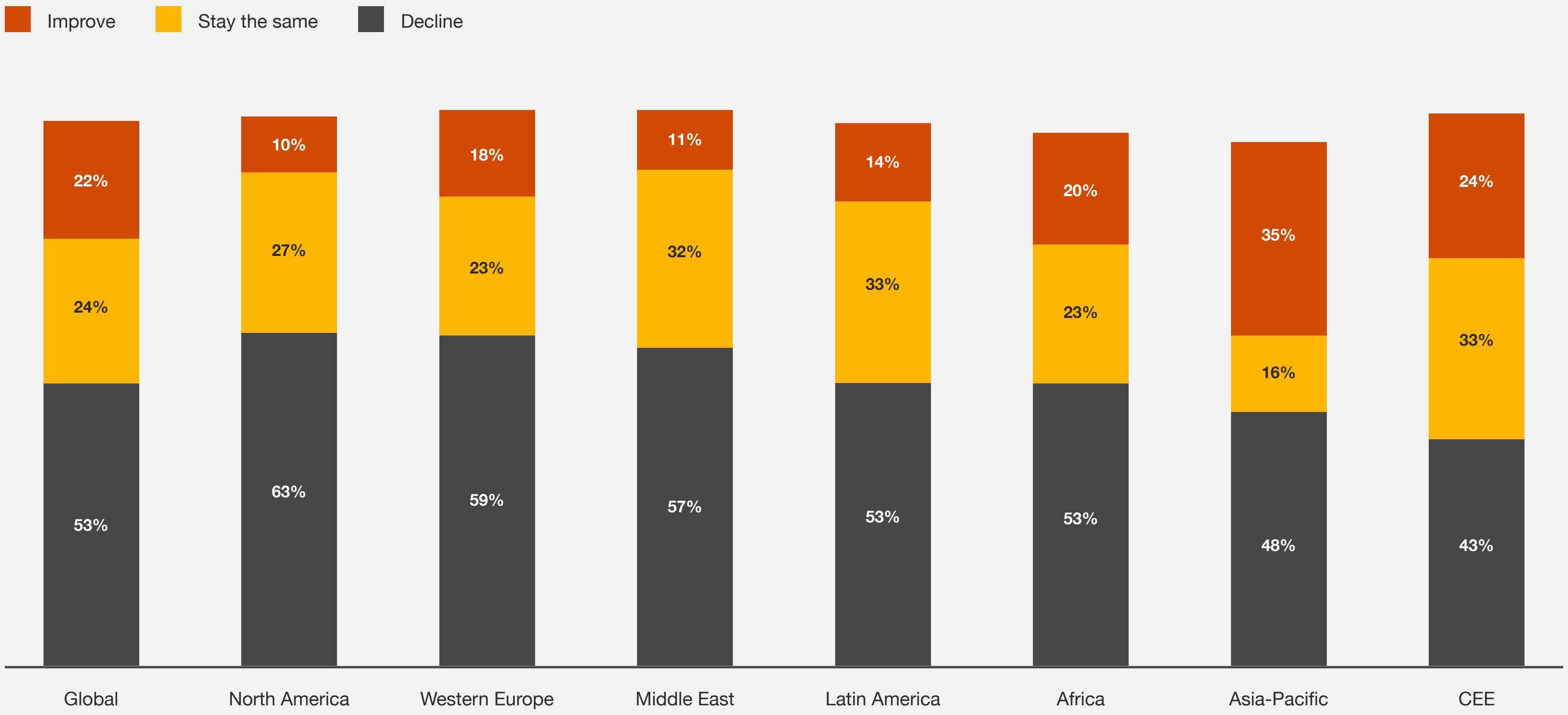
Share of North America CEOs who believe global economic growth will decline over the next 12 months, the largest of any region

Exhibit 2

Pessimism on growth holds across all regions

Question

Do you believe global economic growth will improve, stay the same or decline over the next 12 months?



Source: PwC, 23rd Annual Global CEO Survey
Note: Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses
Base: Global respondents (2020=1,581)

> “Overall, we expect most regions to see a slowdown in growth due to weakened global sentiment. That said, we believe a global recession is unlikely. In particular, we remain optimistic about Asia, which has consistently demonstrated strong growth, almost double that of the Western world. Asian economies are also benefitting from supportive government policies to encourage regional cooperation and to promote growth.
>
> Economies need to brace themselves for the shifts brought about by the technology wave. There is an imminent need to start building ecosystems focused on infrastructure and upskilling the workforce. Those economies which are actively developing their digital technologies and connectivity will find themselves primed to better capitalise on opportunities in the region.

Jenny Sofian
CEO of Fullerton Fund Management, Singapore

Concerns over slower global growth are filtering into CEOs' views of their own progress. Exhibit 3 charts CEOs' confidence in their own organisation's short-term (12-month) and medium-term (three-year) revenue growth prospects against their optimism regarding global economic growth. Not surprisingly, the share of CEOs claiming to be 'very confident' about revenue growth over both time frames is down, sharply so in the near term. In fact, CEOs' confidence in their own organisation's 12-month and three-year revenue growth has dipped to levels not seen since 2009, just as the economy was beginning to recover from the global financial crisis.

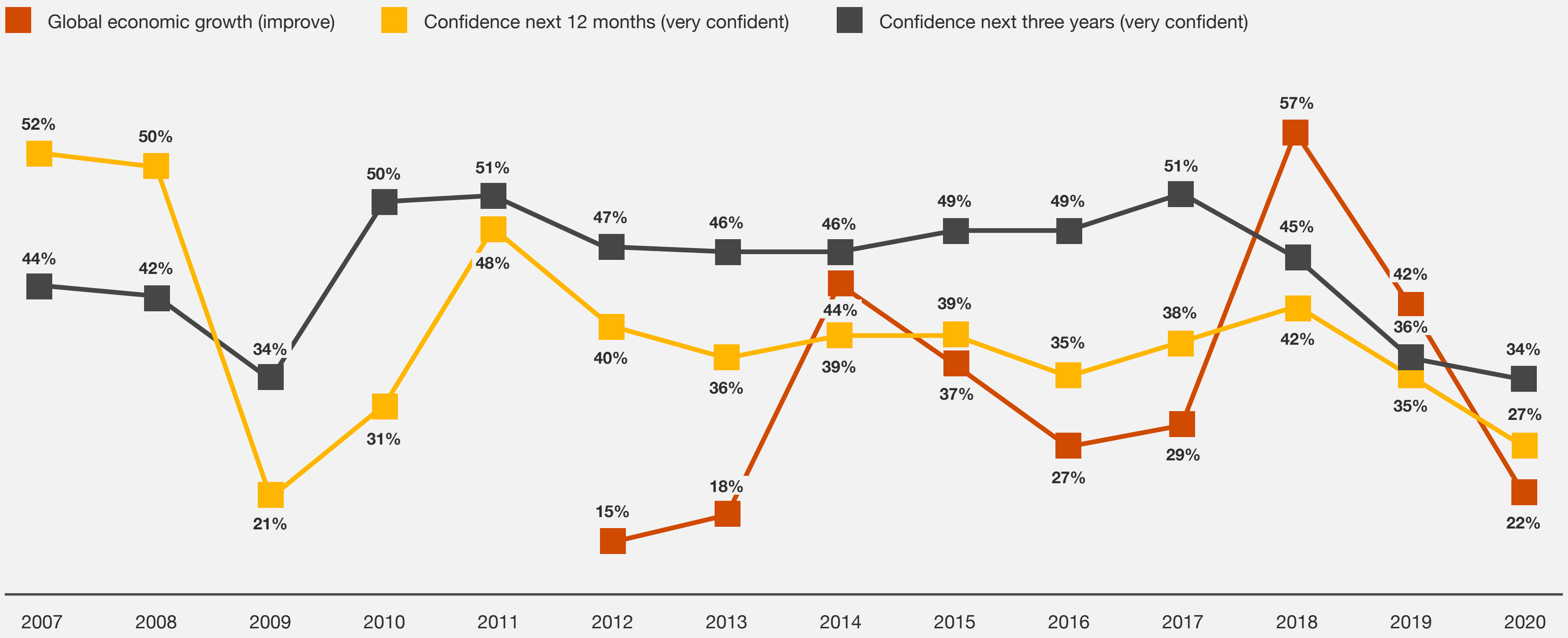
The more subdued outlook is an extension of the mood that characterised last year's report, when CEOs' field of vision was clouded by both mounting trade and geopolitical tensions. Those tensions still linger unresolved, and have even been exacerbated.

Exhibit 3

Twelve-month and three-year revenue confidence fall to levels not seen since 2009

Question

- Do you believe global economic growth will improve, stay the same or decline over the next 12 months? (showing only 'improve')
- How confident are you about your organisation's prospects for revenue growth over the next 12 months/next three years? (showing only 'very confident')



Source: PwC, 23rd Annual Global CEO Survey
Note: From 2012 to 2014, respondents were asked, 'Do you believe the global economy will improve, stay the same or decline over the next 12 months?'
Base: Global respondents (2020=1,581; 2019=1,378; 2018=1,293; 2017=1,379; 2016=1,409; 2015=1,322; 2014=1,344; 2013=1,330; 2012=1,258; 2011=1,201; 2010=1,198; 2009=1,124; 2008=1,150; 2007=1,084)

The predictive power of CEO confidence

When we performed a detailed statistical analysis of survey responses dating back to 2008, we found that CEO attitudes are quite accurate in anticipating both the direction and the strength of the global economy. Specifically, the change in their confidence regarding their own organisation's revenue growth prospects in the year ahead correlates strongly with actual global economic growth. This analysis is captured in Exhibit 4. The orange line shows the change in 12-month CEO confidence based on our survey data, and the yellow line is the expected GDP growth rate we impute from that change.

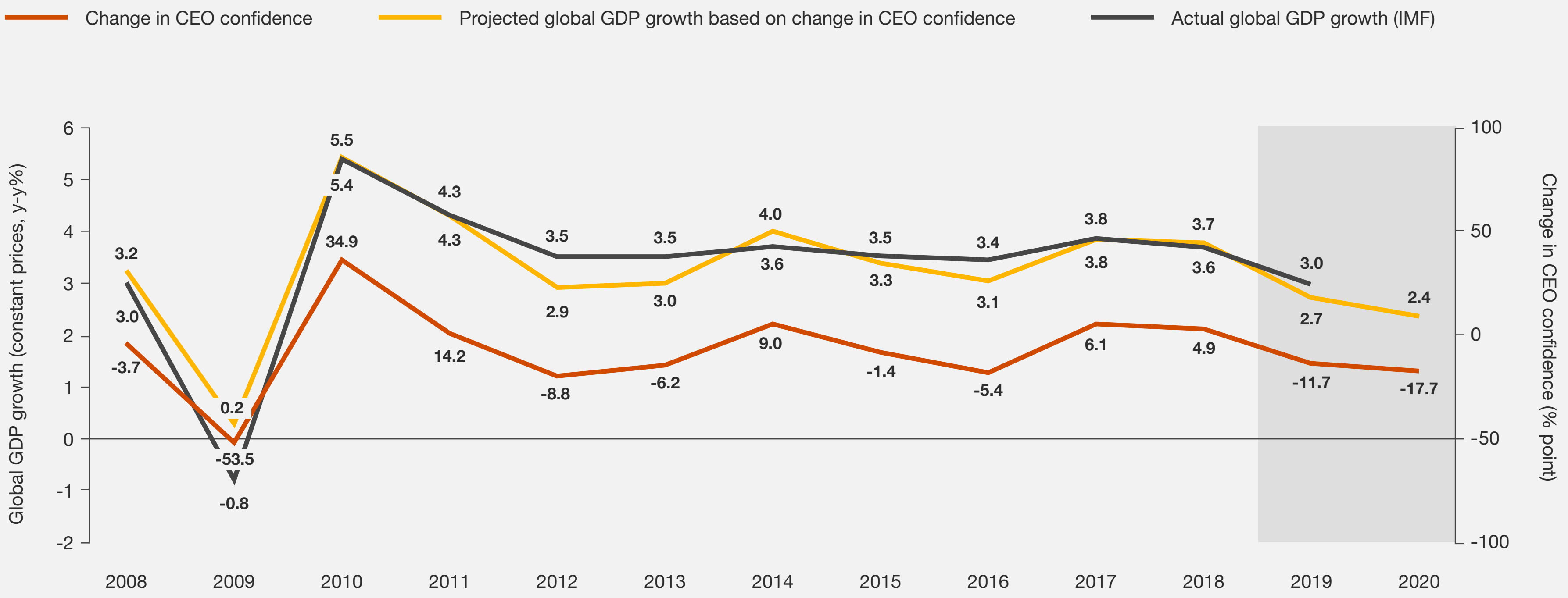
Mapping this projected GDP growth rate (yellow line) against actual GDP growth (black line) recorded a year later reveals just how accurate this analysis has been in predicting global economic growth. Indeed, CEO revenue confidence can be said to be a leading indicator of global economic growth. Using this analysis, we estimate from this year's survey responses that global growth could slow to 2.4% in 2020 — well below the October 2019 IMF forecast of 3.4%.[8]

Exhibit 4

Our regression analysis on the change in CEO confidence implies a continued decline in GDP growth in 2020

Question

How confident are you about your organisation's prospects for revenue growth over the next 12 months? (showing change in CEO confidence[1])



Source: PwC, 23rd Annual Global CEO Survey

1. We calculate change in CEO confidence by taking the change in the net balance percentage of CEOs answering 'very confident' or 'somewhat confident' minus the percentage of respondents answering 'not confident' or 'not confident at all' to the question: 'How confident are you about your organisation's prospects for revenue growth over the next 12 months?'

Note: 2019 global GDP data is from the IMF October 2019 forecast

Base: Global respondents (2020=1,581; 2019=1,378; 2018=1,293; 2017=1,379; 2016=1,409; 2015=1,322; 2014=1,344; 2013=1,330; 2012=1,258; 2011=1,201; 2010=1,198; 2009=1,124; 2008=1,150; 2007=1,084)

Threats: Crossing uncharted territory

The general theme of uncertainty hindering progress moved to the fore in our survey's ranking of threats to organisations' growth prospects. Although over-regulation remained the top threat cited globally, CEO concern over uncertain economic growth surged from number 12 to number three (see Exhibit 5). The other concerns registering prominently on CEOs' radar are trade conflicts, cyber threats and policy uncertainty.

Beyond these top five threats, persistent challenges, such as availability of key skills, geopolitical uncertainty and the speed of technological change, also remain top-of-mind; similar percentages of CEOs as last year cited them as an 'extreme concern.'

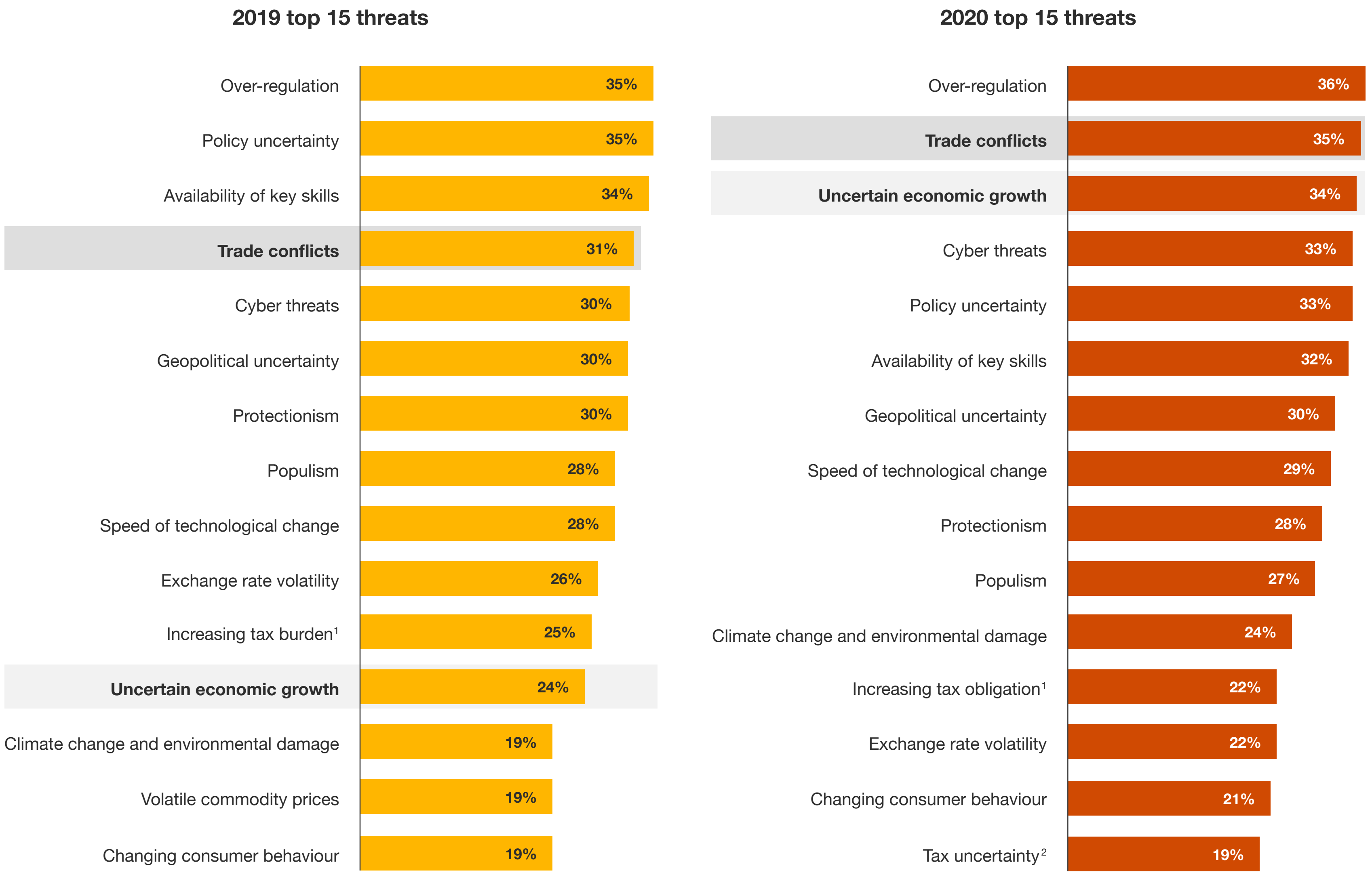
Climate change and environmental damage is another concern worth calling out. Despite it being just outside the survey's ranking of top ten threats, the share of CEOs citing it as an 'extreme concern' rose from 19% to 24%. Climate change is increasingly prominent on CEO agendas, as we discuss later in this report.

Exhibit 5

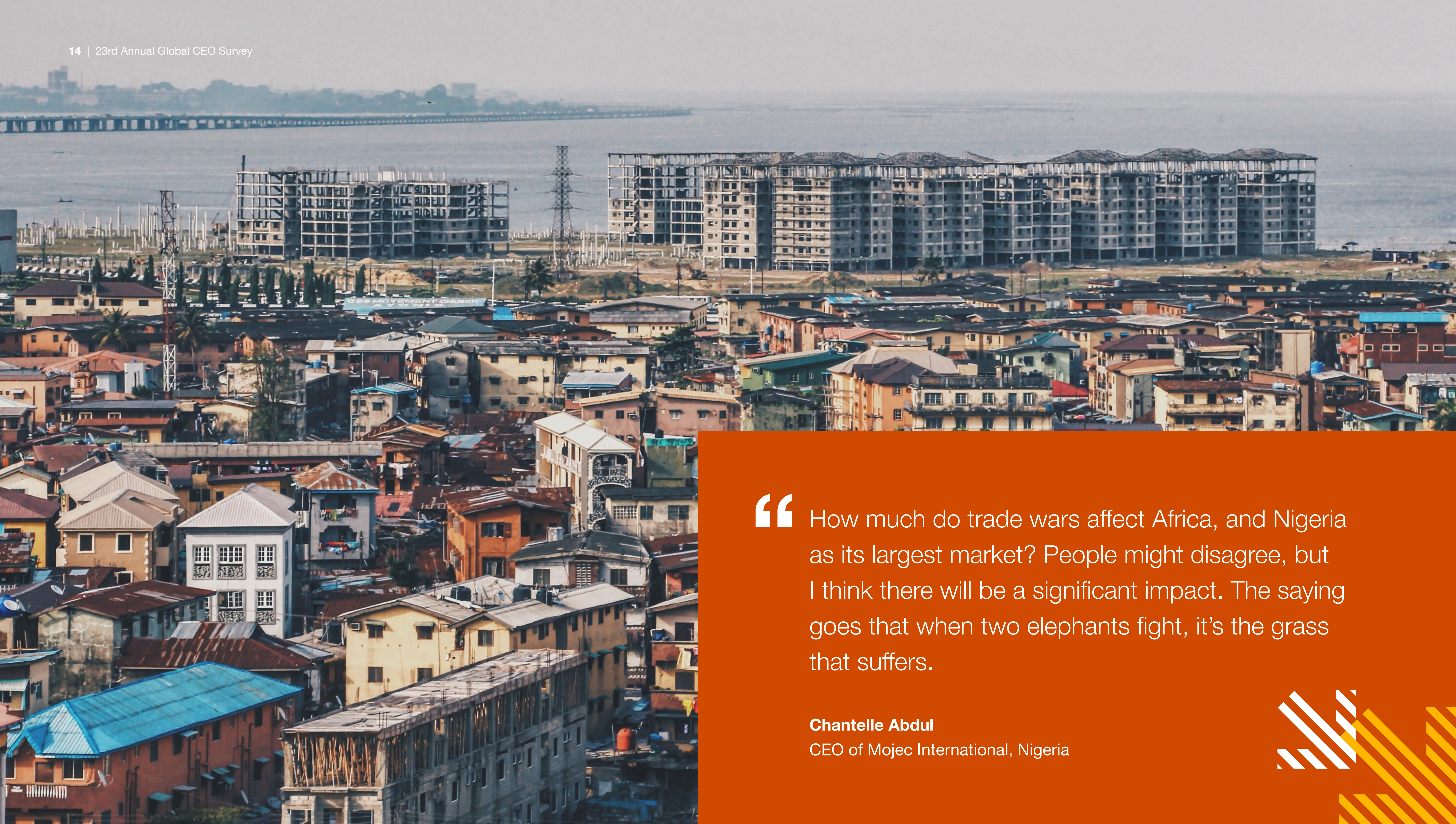
CEOs express increasing concern over uncertain economic growth, trade conflicts and other global disharmonies

Question

How concerned are you, if at all, about each of these potential economic, policy, social, environmental and business threats to your organisation's growth prospects? (showing only 'extremely concerned')



Source: PwC, 23rd Annual Global CEO Survey
1. 'Increasing tax obligation' was worded as 'increasing tax burden' prior to 2020
2. 2020 was the first year CEOs were asked about 'tax uncertainty'
Base: Global respondents (2020=1,581; 2019=1,378)



> How much do trade wars affect Africa, and Nigeria as its largest market? People might disagree, but I think there will be a significant impact. The saying goes that when two elephants fight, it's the grass that suffers.

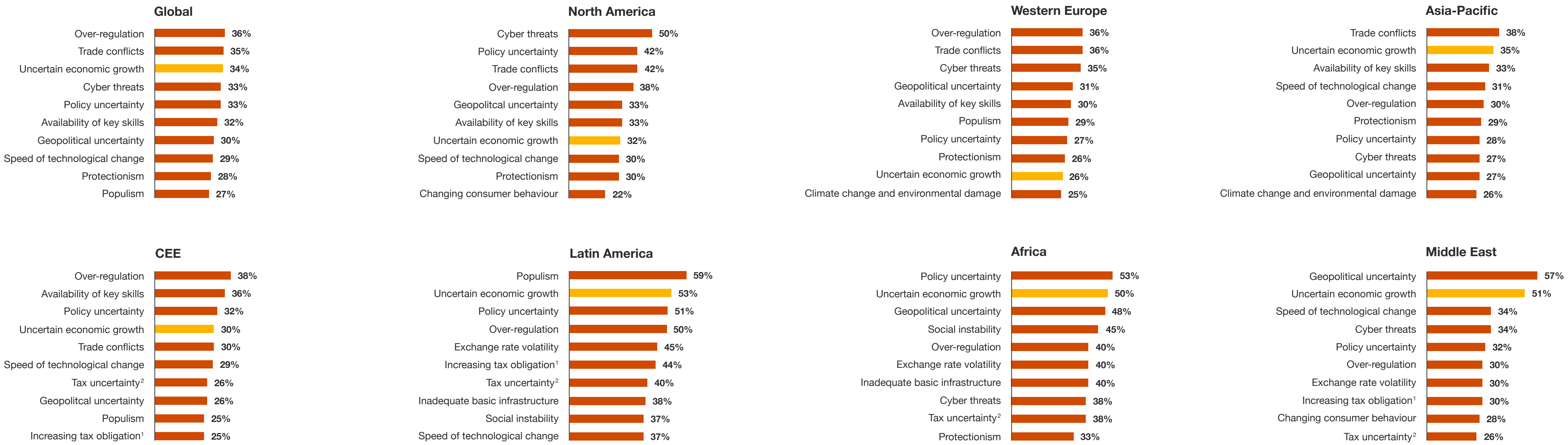
Chantelle Abdul
CEO of Mojec International, Nigeria

Exhibit 6

Uncertain economic growth is a top ten threat around the world

Question

How concerned are you, if at all, about each of these potential economic, policy, social, environmental and business threats to your organisation's growth prospects? (showing only 'extremely concerned')



Source: PwC, 23rd Annual Global CEO Survey
1. 'Increasing tax obligation' was worded as 'increasing tax burden' prior to 2020
2. 2020 was the first year CEOs were asked about 'tax uncertainty'
Base: Global respondents (2020=1,581)

Last year, uncertain economic growth didn't land among the top ten threats in North America, Western Europe and CEE, and barely registered at number ten in Asia-Pacific.

This year, there is universal and mounting consensus on uncertain economic growth as a top ten 'extreme concern' (see Exhibit 6). Policy uncertainty and over-regulation also appear on every region's list, as they did last year.

The top concern in each region remains remarkably consistent with past years' threats. North America CEOs still regard cyber threats as the leading threat to their organisation's growth prospects. In Western Europe, it's over-regulation again. Asia-Pacific business leaders still see trade conflicts as the leading threat, whereas in Latin America, Africa and the Middle East, the top challenges remain populism, policy uncertainty and geopolitical uncertainty, respectively.

In the one departure from last year, CEE CEOs join their counterparts in Western Europe in expressing the most concern about over-regulation, while the availability of key skills — formerly their top concern — falls to number two.

53%

Share of Latin America CEOs who are 'extremely concerned' about uncertain economic growth, the largest of any region

> "On a global level, tensions between the great powers have created uncertainty. There are geopolitical issues too. Some people would say we are in a 'deceleration trend,' especially in terms of demand, which hits us directly. What does this mean? That we must be efficient in order to grow.

Felipe Bayón
CEO of Ecopetrol, Colombia

Insight:

US–China trade conflict: Hurry up and wait

Trade conflicts debuted on our global list of threats last year at number four and climbed to the second-most ‘extreme concern’ weighing on CEO minds this year, particularly in Asia-Pacific, North America and Western Europe. For global trade, the elephant in the room is clearly the ongoing US–China dispute. (Note: the survey was conducted prior to the announcement in December 2019 that China and the US had reached a phase one trade deal that included tariff relief and agriculture purchases).[9]

Of the CEOs in the US and China who express ‘extreme concern’ about trade conflicts, more than half continue to say they are adjusting their supply chain and sourcing strategy. However, US CEO reactions are fairly muted compared with those of last year. The share of US CEOs making ‘no change’ to their operating model and growth strategy has actually grown by 51%, to one-third (see Exhibit 7).

China CEOs, on the other hand, continue to vigorously shift their growth strategy (58%) and, increasingly, their production (63%) to alternative territories. Which is not surprising, given that China exports far more to the US than the US exports to China.[10] This shift in growth strategy has also benefitted a number of nations in Southeast Asia, as well as Australia.

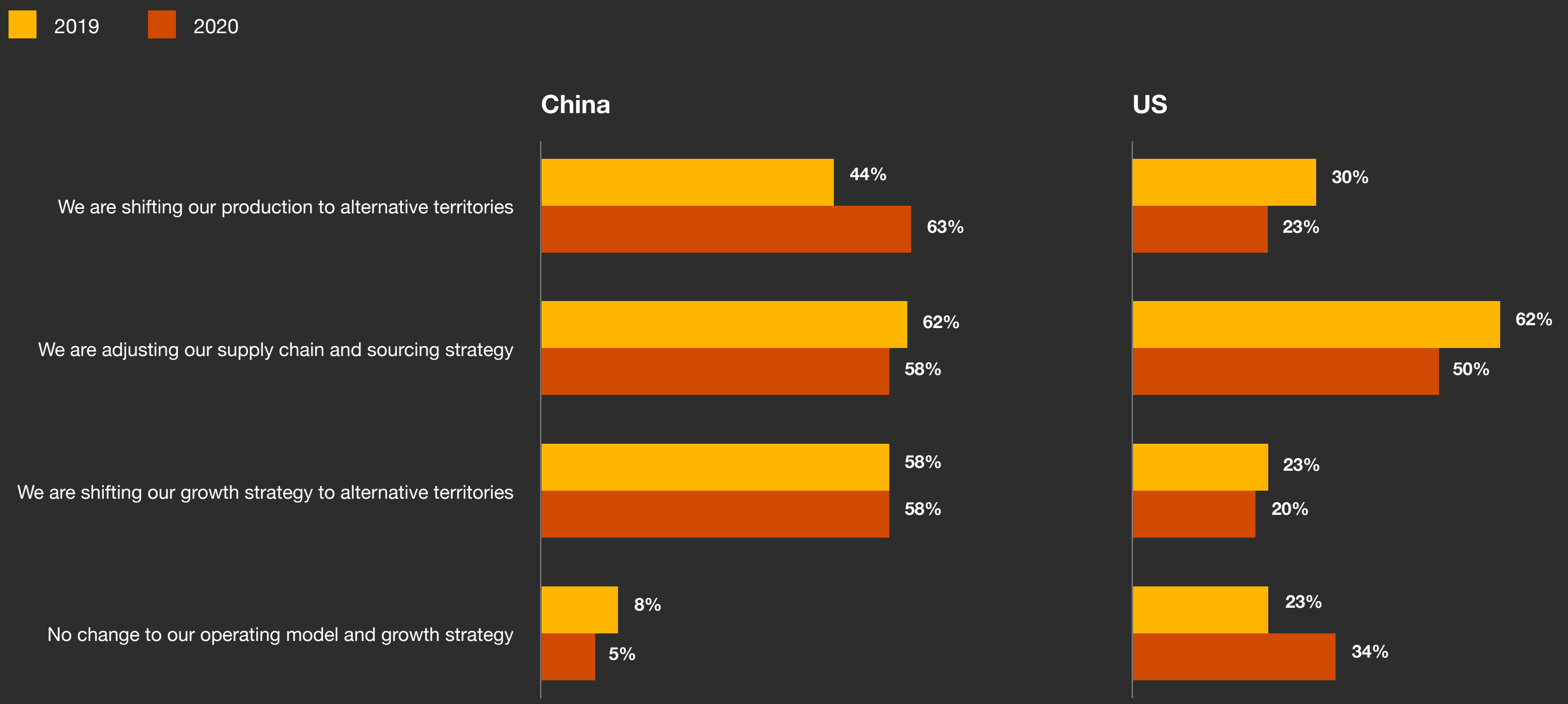
In fact, Australia has leapfrogged France and Brazil in the survey's ranking of top growth territories based on China CEOs' massive shift away from the US (see Exhibit 8). Two years ago, China CEOs regarded the US as their most important growth market by far; 59% of China CEOs listed it as a top three growth destination. That figure has collapsed to 11%, while Australia's attractiveness to China CEOs has increased fivefold.

Exhibit 7

Due to ongoing trade conflicts, China CEOs are continuing their efforts to shift production to alternative territories

Question

How are trade conflicts affecting your operating model and growth strategy? (showing only responses from CEOs 'extremely concerned' about trade conflicts)



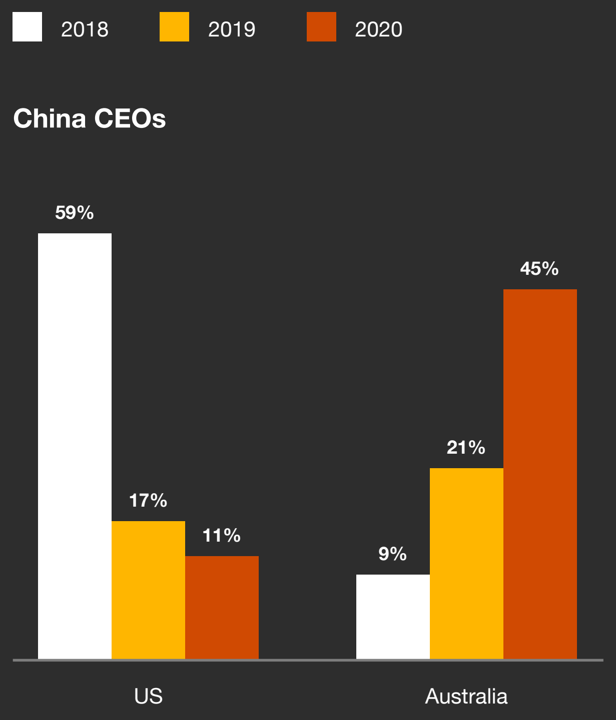
Source: PwC, 23rd Annual Global CEO Survey
Base: Respondents who answered 'extremely concerned' about trade conflicts (China 2020=43; 2019=52; US 2020=70; 2019=53)

Exhibit 8

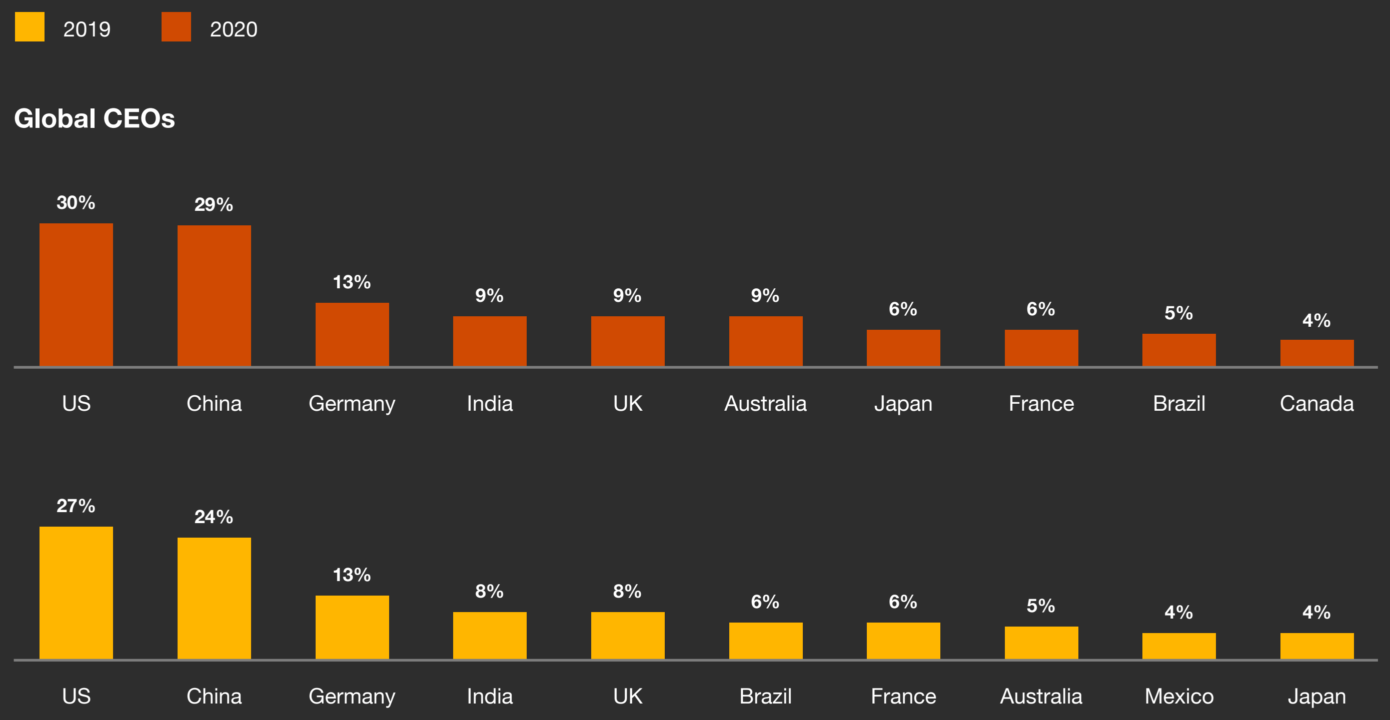
As China CEOs shift away from the US, Australia moves up the survey's global ranking of top growth territories

Question

Which three territories, excluding the territory in which you are based, do you consider most important for your organisation's overall growth prospects over the next 12 months?



Source: PwC, 23rd Annual Global CEO Survey
Base: China respondents (2020=161; 2019=144; 2018=162)



Source: PwC, 23rd Annual Global CEO Survey
Base: Global respondents (2020=1,581; 2019=1,378)

2. Technology regulation

Setting up guard rails in cyberspace

> “Silicon Valley introduced the notion that more data was better, that data was an asset. What we’re saying is that personal data is actually a liability. People are placing it on the wrong side of the balance sheet.

Dylan Collins
CEO of SuperAwesome, UK

Link to full interview with Collins

In every major industrial revolution, a broad new underlying technology has appeared that fundamentally transformed society, and, more specifically, the nature of work. In the first Industrial Revolution, it was the steam engine. In the second, it was mass production. In the third, it was digital tools, especially the semiconductor and personal computer, turbocharged by the internet.

Technologies that leverage big data — artificial intelligence (AI), robotics, the Internet of Things (IoT) — and bring the physical and digital spheres together are now propelling the Fourth Industrial Revolution.[11]

But as with all other industrial revolutions, perils lurk in the promise of these transformative technologies. The private sector's implementation of these innovations is outpacing the development of regulatory systems and standards to mitigate their risks. Organisations interested in global cybersecurity and internet governance are fragmented. No global framework exists that can control attacks on digital technology. And in many areas, digital dominance is increasingly seen as both an economic competitive advantage and a national security imperative.

So the debate rages on as to whether governments should adapt their existing frameworks to emerging standards, or draw new boundaries on data privacy, content moderation, and the size and reach of dominant platforms (e.g., Facebook, Google, Amazon, Apple). If those boundaries are drawn too tightly, they inhibit cross-border data flows, the effectiveness of cybersecurity and, simply put, innovation. The friction between these imperatives sows distrust and division, resulting in the increased fragmentation of societies.

50%

Share of North America CEOs who are 'extremely concerned' about cyber threats, the largest of any region

This year, we asked CEOs to think about the future (2022 and beyond) and select from a series of opposing statements on whether and where they thought governments would intervene in regulating the technology sector. Nearly seven out of ten CEOs see the government increasingly introducing legislation in two areas: (1) to regulate content on the internet (including social media) and (2) to break up dominant tech companies. Interestingly, a majority foresee the government compelling the private sector to financially compensate individuals for the personal data they collect (see Exhibit 9).

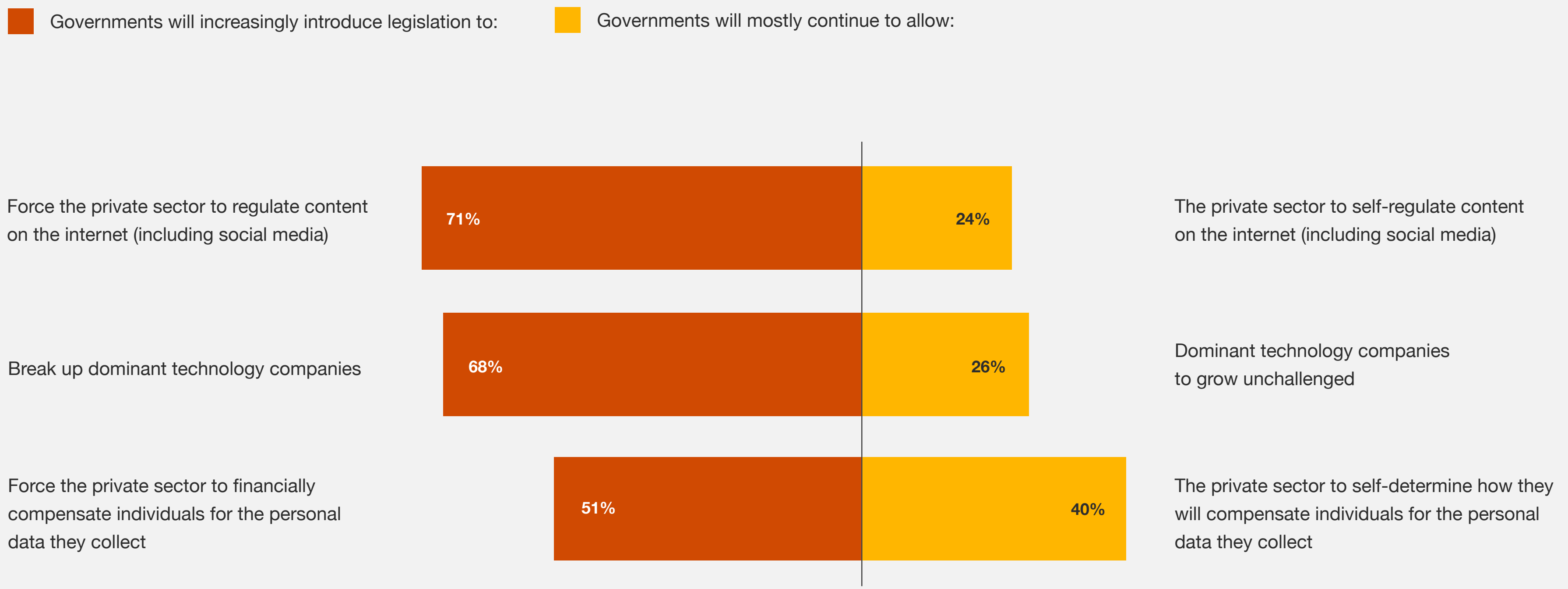
In North America and Western Europe, content on platforms such as Facebook, Twitter and YouTube has largely been self-regulated. But the inadequacies of that approach have become apparent. The European Commission is already drafting a new rulebook designed to overhaul how the EU oversees technology companies. It will be the first legislation of its kind to regulate hate speech, other illegal content and political advertising at scale.[12]

Exhibit 9

Most CEOs foresee legislation on internet content, the breakup of big tech companies and compensation for personal data

Question

Thinking about the future (2022 and beyond), please select the statement that you believe is more likely to occur:



Source: PwC, 23rd Annual Global CEO Survey
Note: Not all figures add up to 100% as a result of rounding percentages and excluding ‘neither/nor’ and ‘don’t know’ responses
Base: Global respondents (2020=1,581)

Similarly, data privacy has been headline news and high on regulators' priority lists. Inspired by the EU's General Data Protection Regulation (GDPR), now close to two years old, governments are formulating their own guidelines on the use and flow of personal data. For example, the California Consumer Privacy Act (CCPA) and Brazil's General Data Protection Law (LGPD) take effect in 2020. And other national and local governments are contemplating their own legislation.[13]

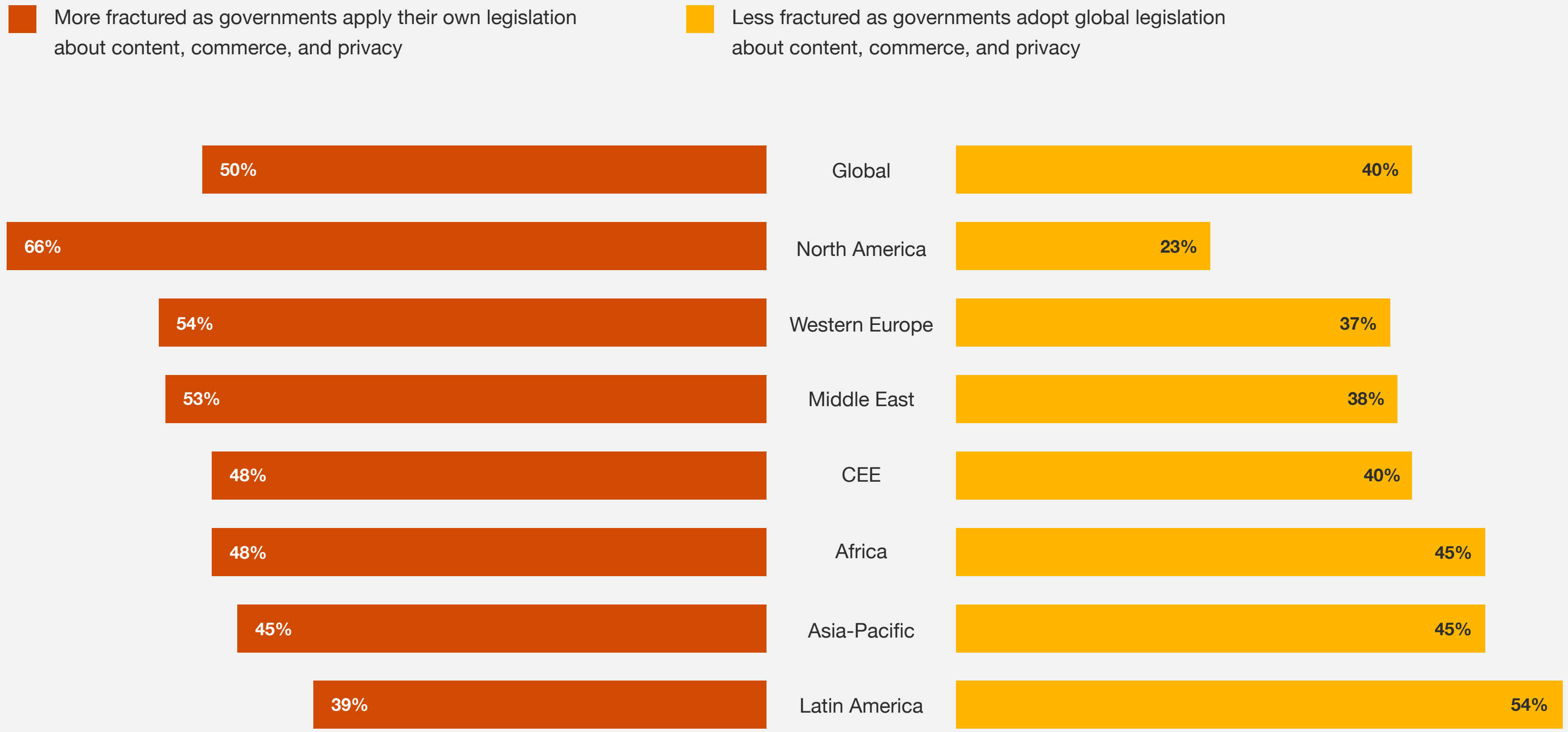
Globally, CEO responses are divided on the subject of whether government legislation on issues such as privacy will exacerbate the splintering of the internet (see Exhibit 10). Not surprisingly, North America CEOs are the most emphatic that it will. US companies pioneered the first global digital platforms and exercised disproportionate influence over its free and open culture in the early years. Consequently, they are the most directly and negatively affected by efforts to regulate the internet in large consumer markets.

Exhibit 10

Two thirds of North America CEOs believe government legislation will splinter the internet

Question

Thinking about the future (2022 and beyond), please select the statement that you believe is more likely to occur. The internet (including social media) will increasingly become:



Source: PwC, 23rd Annual Global CEO Survey
Note: Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses
Base: Global respondents (2020=1,581)

> The notion of privacy, security or trust is very linked to your culture, and there is no one single culture in the world. That's why I do not believe in a one-size-fits-all system. While we share common core values and objectives (expressed in our company's digital charter), local approaches and specifics are increasingly important and we should acknowledge them. Therefore, in a more and more fragmented physical world, I believe splitting up the digital world is probably inevitable.

Jean-Pascal Tricoire
Chairman and CEO of Schneider Electric, France

In this divisive environment, designing regulations that both maintain business competitiveness and bolster consumer trust is a delicate balancing act. And it is one that, to date, has achieved mixed results, at least in the area of data privacy. A clear majority of CEOs in China, Brazil and India believe that governments are successfully striking that balance. But a majority in Germany, the UK, US, Canada and Italy do not share that opinion (see Exhibit 11). The perceived lack of effectiveness in these countries, which have some of the most stringent protections, is worrisome, especially as other nations try to follow in their footsteps.

64%

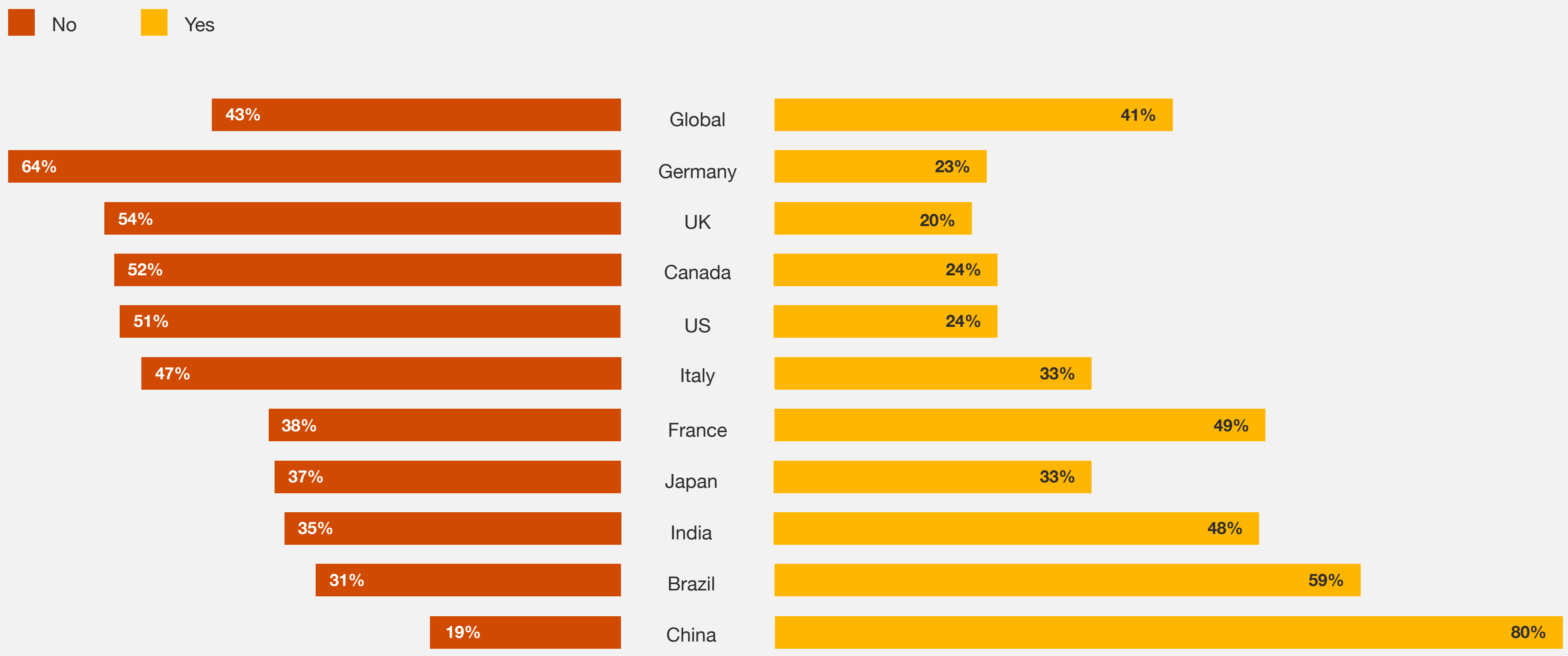
Share of Germany CEOs who do not believe governments are designing privacy regulations that both increase consumer trust and maintain business competitiveness

Exhibit 11

Organisations and governments need to collaborate on data privacy strategies that balance competitiveness with trust

Question

Are governments designing privacy regulations that both increase consumer trust and maintain business competitiveness?



Source: PwC, 23rd Annual Global CEO Survey
Note: Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses
Base: Global respondents (2020=1,581), territory respondents (2020=3,501)

> “I think there’s some tone deafness sometimes, which needs to be addressed. The tech industry has grown in scale and influence probably far beyond what it ever anticipated. Remember, our roots were building products for businesspeople and other techies. And now we build products that everybody uses and that affect their lives every single day. That comes with a whole new set of responsibilities. And I think whether it’s privacy, cybersecurity, dealing with hate speech and walled gardens, or whatever, we’re not yet where we need to be.

John Hennessy
Chairman of Alphabet, US

Link to full interview with Hennessy

It is clear that many societies will no longer tolerate self-regulation. CEOs will increasingly need to collaborate with a diverse range of governments to shape appropriate solutions that deploy technology and leverage data in a safe way — one that protects consumers and respects their values while fostering innovation.

As the Fourth Industrial Revolution rolls out and we trust AI to make more decisions with human consequences (e.g., decisions involving hiring and admissions, medical treatment, access to financial assistance and social services, dating), this balancing act becomes all the more important. The way forward will not be as unfettered as in the gold rush days of the internet. But it must be sufficiently enabling to unlock the enormous productivity and other benefits of these technologies. Like blockchain — a digital ledger that exists simultaneously in millions of places so it can’t be falsified or hacked — the path forward will be distributed but collective.

3. Upskilling

To upskill or not to upskill is no longer the question

"If you look at our known history, since the invention of agriculture, we've been trapped in repetitive work. And I think now we are on the verge of reversing this cycle. Automation technology will free people from doing work they don't enjoy, because nobody likes to plow the fields, and nobody likes to do the jobs that we can automate. My biggest concern is what are people going to do if they don't have work to do? Because work has a fantastic positive effect on people; it gives us a sense of purpose.

Daniel Dines
CEO of UiPath, US

[Link to full interview with Dines]

In 2013, two young Oxford University researchers published a paper stating that roughly half of US jobs were "at risk of computerisation,"[14] igniting a debate that has steadily climbed up the CEO agenda. PwC's own analysis of more than 200,000 jobs in 29 countries[15] — although less foreboding — confirms that 30% of jobs are potentially subject to automation by the mid-2030s, and that workers with lower education levels will be hardest hit initially.

Blue-collar jobs will be replaced by 'new collar' jobs that require a combination of digital, technical and soft skills that are going unfilled in today's tight global labour market. Unemployment rates continue to fall in OECD countries (see Exhibit 12).[16] And the supply of people possessing STEM (science, technology, engineering, math) skills and the uniquely human skills (e.g., creativity, empathy, collaboration) increasingly prized in today's job market cannot keep up with demand.

This worldwide skills shortage is exacerbated by the barriers to talent mobility being erected around the world.

Indeed, this year's survey saw a pronounced increase (from 45% to 52%), compared with five years ago, in the percentage of CEOs responding 'no' to the question, 'Is cooperation among governments and businesses leading to greater movement of skilled labour between markets?' (see Exhibit 12). Finally, employers and workers alike confront a profound demographic dilemma — a rapidly ageing labour force in many markets. The pool from which to recruit new talent is drying up.

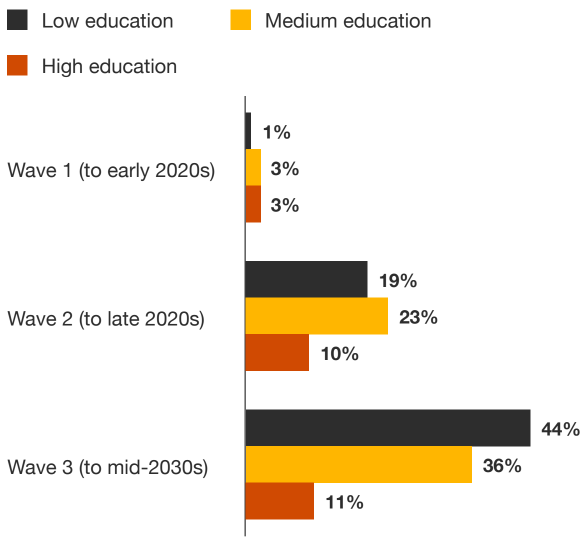
The Fourth Industrial Revolution has ushered in new business models and new ways of working that require critical new technical, digital and soft skills. Those skills are in very short supply. Indeed, the availability of key skills has been a top ten 'extreme concern' for the last decade, impeding innovation and prompting higher people costs.[17] Businesses cannot hire their way over this skills gap at a price they can pay, so the imperative is clear. Employers and employees must join hands and invest in upskilling or risk irrelevance.

Exhibit 12

Four key forces are driving the upskilling imperative

1. Increasing job automation

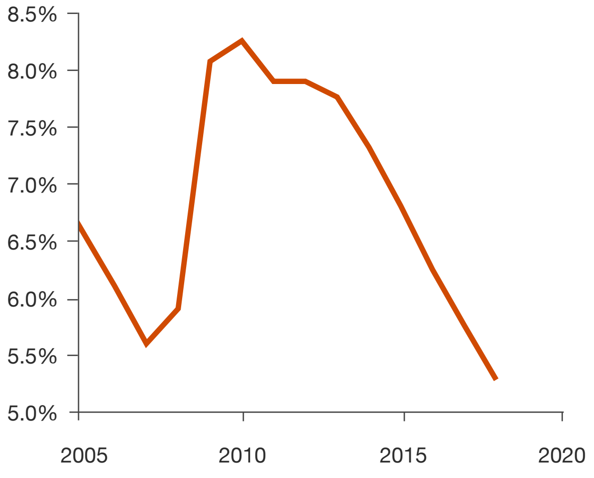
Percentage of existing jobs at potential risk of automation by education level across waves



Source: PwC, *Will robots really steal our jobs? An international analysis of the potential long term-impact of automation*

2. Decreasing talent availability

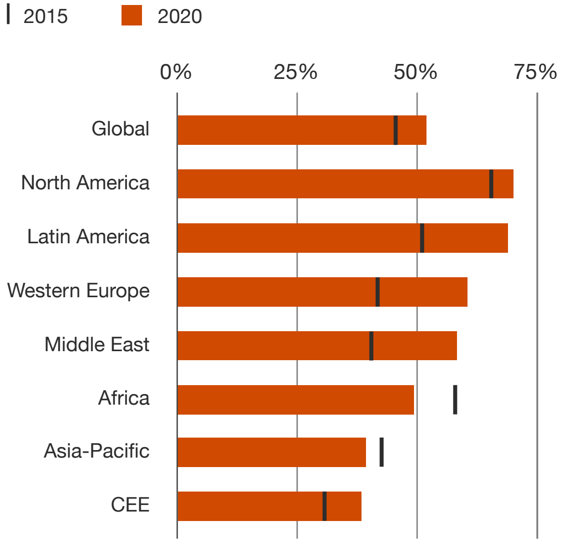
OECD unemployment rate (% of total labour force)



Source: OECD

3. Decreasing mobility of skilled labour

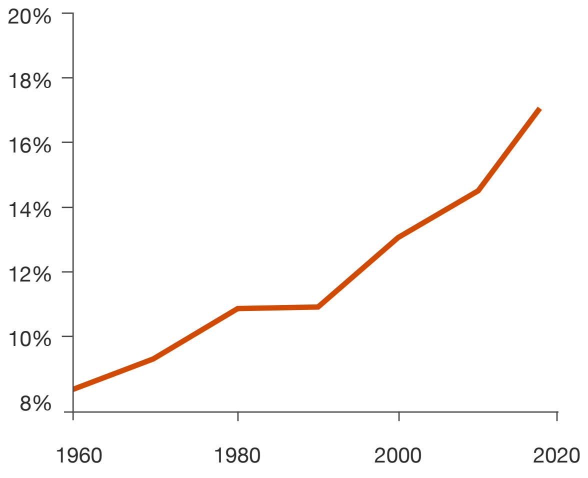
Is cooperation among gov'ts and businesses leading to greater movement of skilled labour between markets? (showing only 'no')



Source: PwC, 23rd Annual Global CEO Survey
Base: Global respondents (2020=1,581; 2015=1,322)

4. Ageing talent

OECD population ages 65 and above (% of total population)



Source: World Bank Group

In last year's survey, the majority of CEOs agreed that significant retraining/upskilling was the most important way to close a potential skills gap in their organisation. Yet this year's survey reveals that globally, fewer than one in five leaders (18%) believe their organisation has made 'significant progress' in establishing an upskilling programme.

Of course, 'upskilling' can mean different things in different territories or industries. For the purposes of this survey, upskilling was defined as follows: "An organisation's clear intent to develop its employees' capabilities and employability, and to advance and progress their technical, soft and digital skills."

18%

Share of global CEOs who cite 'significant progress' in establishing an upskilling programme

"We're making the human–machine interface more fluid and intuitive, because our current approach can't continue. We have more than 1,500 open job requisitions in the US alone, and sometimes 100 applications for every opening. But we don't have nearly enough qualified applicants to hire because of the technical knowledge required. So we're going to be training a lot of non-engineers to do jobs engineers would have done in the past.

Barbara Humpton
CEO of Siemens US

Link to full interview with Humpton

We also compared the extent to which CEOs in each region reported ‘significant progress’ in establishing an upskilling programme (shown in Exhibit 13 by the position on the x-axis) with CEOs’ belief in their ability to close a potential skills gap in their organisation using a range of external sources such as hiring from outside their industry, from competitors or directly from education. And a simple but strong correlation emerged: CEOs in regions with more mature talent pools (e.g., developed education systems and high talent mobility) are less likely to have made ‘significant progress’ in establishing upskilling programmes (see Exhibit 13).

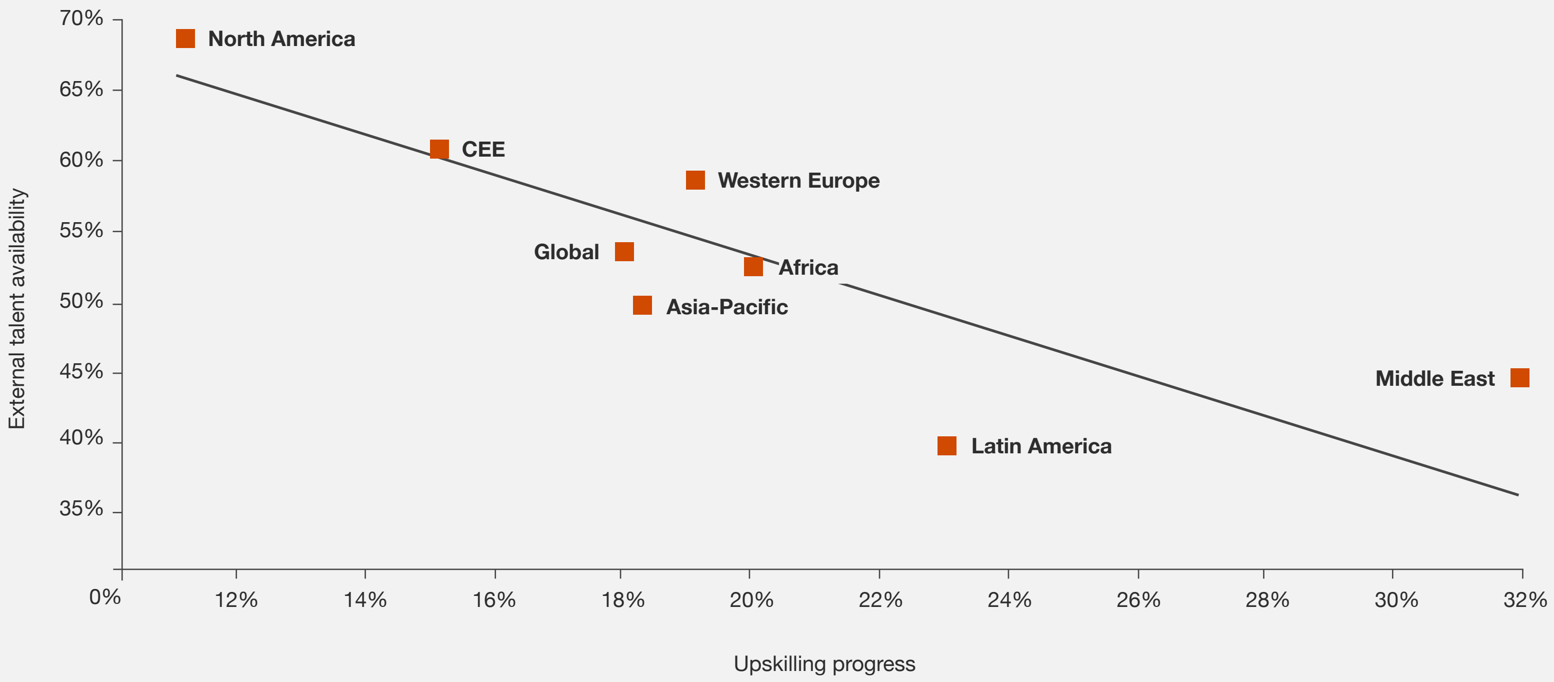
We next looked at the key challenges inhibiting the development of upskilling programmes. To perform that analysis, we divided the sample into regionally adjusted quartiles based on CEOs’ responses to six questions about upskilling progress and looked at the aggregated responses of the top and bottom quartiles. Those just beginning the journey ranked motivating employees and a lack of resources as their top challenges. Those with more advanced programmes cited retaining upskilled employees as their primary challenge (see Exhibit 14).

Exhibit 13

CEOs in regions with more mature talent pools report less progress in establishing upskilling programmes

Question

- How much progress has your organisation made in establishing an upskilling programme that develops a mix of soft, technical and digital skills? (showing only ‘significant progress’)
- Which of these is the most important to close a potential skills gap in your organisation? [showing aggregated percentage of external sources (e.g., hiring from outside my industry, establishing a strong pipeline from education)]



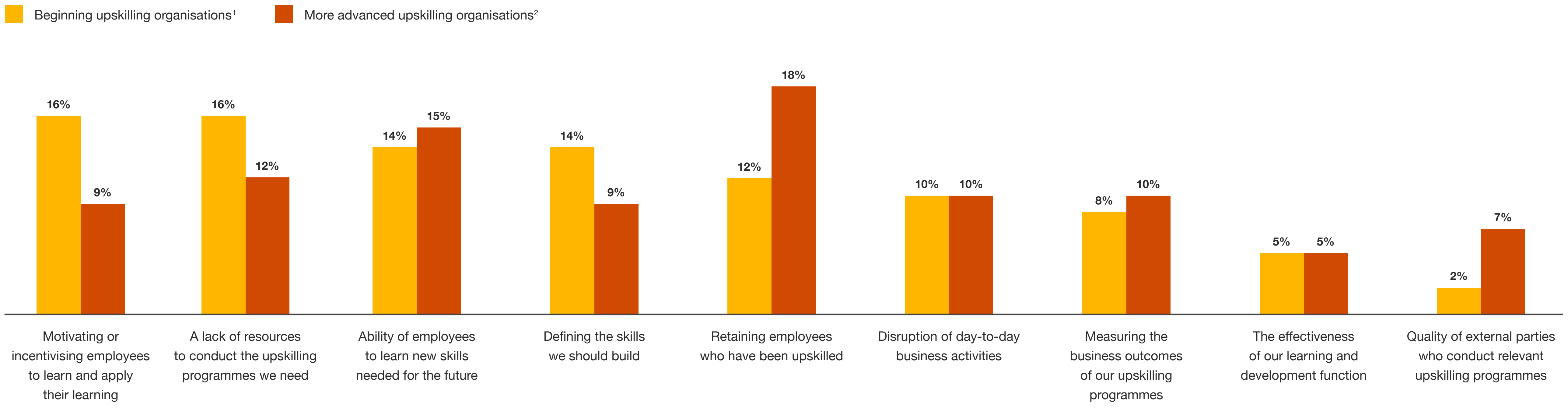
Source: PwC, 23rd Annual Global CEO Survey
Note: The question, ‘Which of these is the most important to close a potential skills gap in your organisation?’ was asked in the 22nd Annual Global CEO Survey
Base: Global respondents (2020=1,581; 2019=1,378)

Exhibit 14

At the beginning of an upskilling programme, the biggest challenges are to motivate and align resources

Question

Please rank the three greatest challenges your organisation currently faces in its upskilling efforts. (showing percentage ranked first)



Source: PwC, 23rd Annual Global CEO Survey

1. 'Beginning upskilling organisations' refers to the bottom quartile of CEOs regionally who have reported the least progress in upskilling
2. 'More advanced upskilling organisations' refers to the top quartile of CEOs regionally who have reported the most progress in upskilling

Note: Upskilling relates to an organisation's clear intent to develop its employees' capabilities and employability, and to advance and progress their technical, soft and digital skills.

Base: 'Beginning' and 'more advanced' upskilling organisations (beginning=411; more advanced=353)

There is an intriguing disconnect between what employers perceive and what employees express about their employment future. According to PwC's survey of 22,000 workers around the world, more than half (53%) believe that automation will significantly change their job or make it obsolete within the next ten years.[18] And more than three-quarters of adults (77%) say they would learn new skills or completely retrain to improve their future employability. But only a third (33%) feel they have been given opportunities to develop digital skills outside their normal duties. Workers need to be convinced that companies are engaging in upskilling efforts to improve their employability, not just to improve the bottom line.

Regarding the retention challenge, employers may well ask, "What if I spend money upskilling my employees, and they leave?" The reply is simple: What if you don't, and they stay? To retain employees, companies must do more than go through the motions of upskilling; they need to give their talent the opportunity to do 'good work.'[19]

> "First, you have to create a culture of learning. Investing in people and helping them continually develop their skills, that should be embedded in a company's culture. That doesn't just mean training people in what the company decides is important to them. At least a portion of the learning agenda should be based on what the individual chooses to learn about. The role of the company is to continually challenge and develop its people, starting at the top. In fact, I think the company has an obligation to do so.

Jim Keane
CEO of Steelcase, US

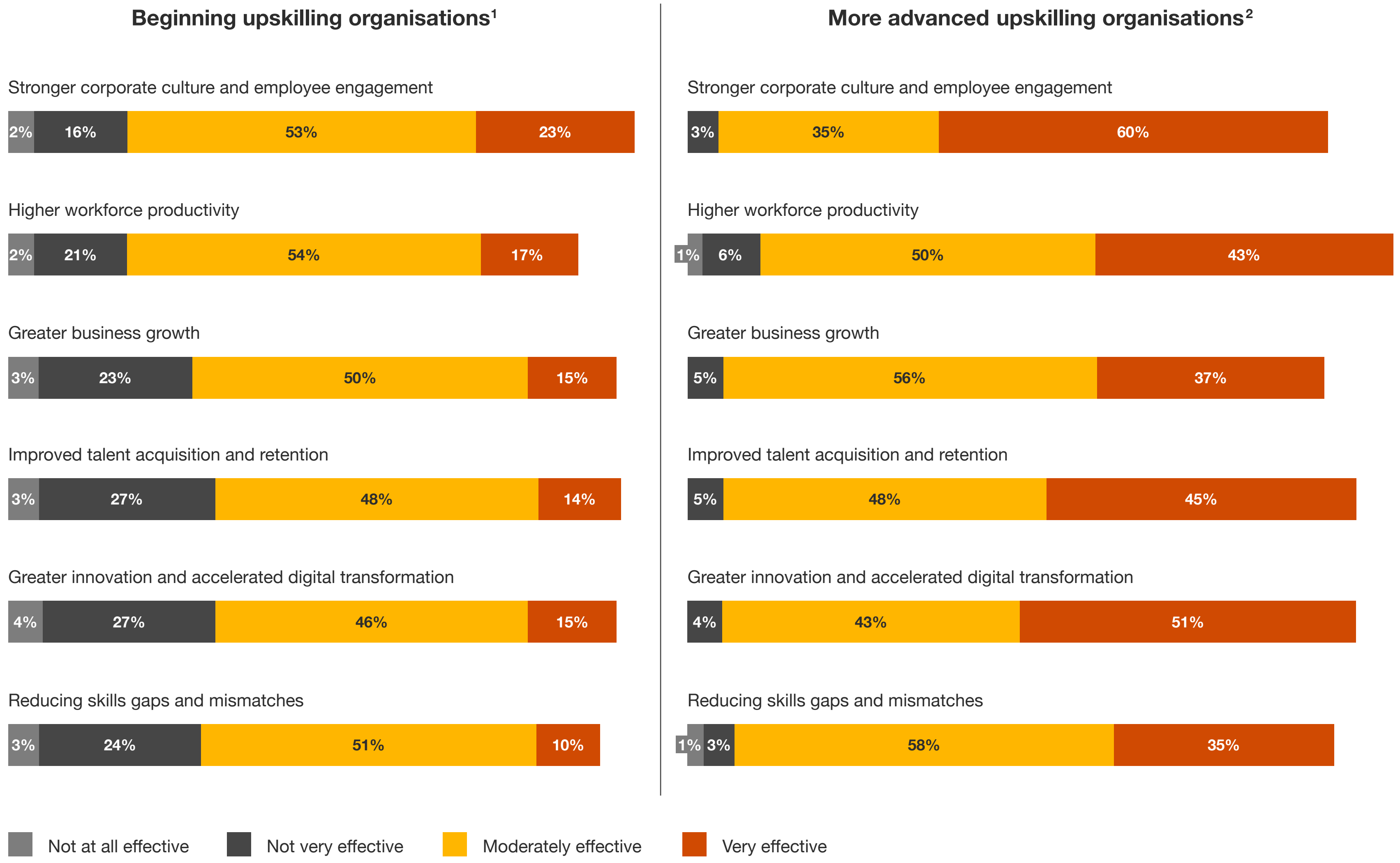
[Link to full interview with Keane]

Exhibit 15

CEOs with more advanced upskilling programmes cite improved engagement, innovation and ability to attract and retain talent

Question

How effective are your upskilling programmes in achieving the following outcomes?



Source: PwC, 23rd Annual Global CEO Survey

1. 'Beginning upskilling organisations' refers to the bottom quartile of CEOs regionally who have reported the least progress in upskilling
2. 'More advanced upskilling organisations' refers to the top quartile of CEOs regionally who have reported the most progress in upskilling

Note: Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses

Note: Upskilling relates to an organisation's clear intent to develop its employees' capabilities and employability, and to advance and progress their technical, soft and digital skills.

Base: 'Beginning' and 'more advanced' upskilling organisations (beginning=411; more advanced=353)

There's good news.

Across the board, organisations that have made the most progress in upskilling are achieving better business outcomes, including a stronger corporate culture, higher workforce productivity, greater business growth, improved talent acquisition and retention, greater innovation, and reduced skills gaps and mismatches (see Exhibit 15).

A real correlation exists between progress in upskilling and CEO optimism and confidence. CEOs of more advanced upskilling organisations are far more optimistic about global economic growth — 34% expect improvement versus 15% of CEOs of beginning upskilling organisations. And the 'advanced' CEOs express greater confidence in their revenue growth over the next 12 months — 38% are 'very confident' versus 20% of 'beginning' CEOs.

This correlation suggests that employers who make good-faith efforts to upskill their employees build trust, and that, in turn, can enhance returns in a world where trust is an increasingly valuable commodity.

But business leaders alone cannot solve the global talent and skills crisis the world now confronts. It will take the concerted efforts of educators; national, regional and local governments; technology innovators; and the business community to ensure that people around the world stay productively engaged in meaningful work. For now, though, the 2019 Edelman Trust Barometer showed that in these uncertain times, when people have lost trust in institutions, 'my employer' is emerging as the most trusted entity of all.[20]

4. Climate change

An opportunity cloaked in crisis

“How do you create financial growth without waste growth? That’s the real question. To achieve this idea of growth, people need to buy less and at much higher prices. How do you achieve that? By making them enjoy the actual experience more. You don’t go to Louis Vuitton to pay US$2,000 for a bag — you go there for the experience. That experience can be luxury, or it can be storytelling, but it doesn’t necessarily need to lead to more waste.

Arthur Huang
CEO of Miniwiz, Taiwan

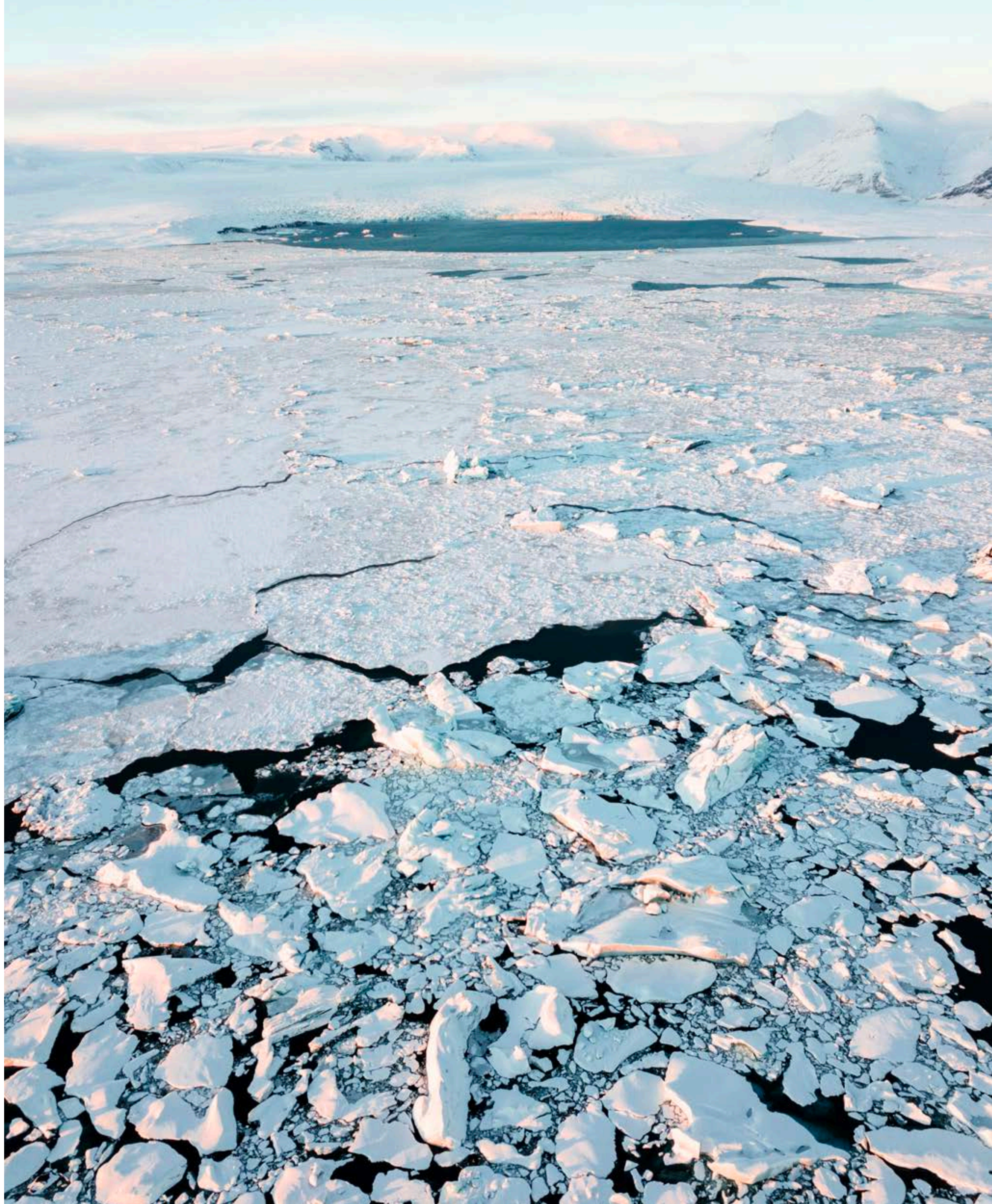
Through the 1950s, scientists believed that the CO_2 emitted by human industry would be largely absorbed by the oceans. In other words, they believed that CO_2 levels would not rise appreciably as a result of anthropogenic activity.[21] Today, there is general consensus among climate scientists that human activity, in addition to natural factors, contributes to climate change.[22] The Intergovernmental Panel on Climate Change (IPCC) estimates that the Earth's mean surface temperature is now 1°C above what it was in the pre-industrial world and is rising by about 0.2°C a decade.[23] We are seeing more frequent and intense extreme weather events, changing patterns of rainfall and drought, damaged communities and ecosystems, and rising sea levels.

In 2015, government leaders pledged to hold further increases to "well below" 2°C as part of the Paris Agreement. There has been moderate progress in achieving its stated goals — the global economy is becoming more energy efficient, and de-carbonisation technologies are moving beyond the drawing board — but the pace of change has seemingly stalled, according to PwC's own research.[24]

As CEOs try to navigate disruptive weather impacts, fractured climate policy, rising expectations from the public and the demands of remaining competitive, they are facing a higher level of climate-induced uncertainty.

24%

Share of global CEOs who are 'extremely concerned' about climate change and environmental damage, a 25% increase compared to 2019



Our survey shows that CEOs express a growing, if still subdued, appreciation of the upside of taking action to reduce their carbon footprint. Compared with a decade ago, when we last asked the same question, global chief executives are twice as likely to 'strongly agree' that investing in climate change initiatives will boost reputational advantage among key stakeholders, including employees (30% strongly agreed in 2020 compared with 16% in 2010), and afford significant new product and service opportunities (25% in 2020 compared with 13% in 2010). And nearly three times as many (14% in 2020 compared with 5% in 2010) agree they will benefit from government funds or financial incentives for 'green' investments (see Exhibit 16).

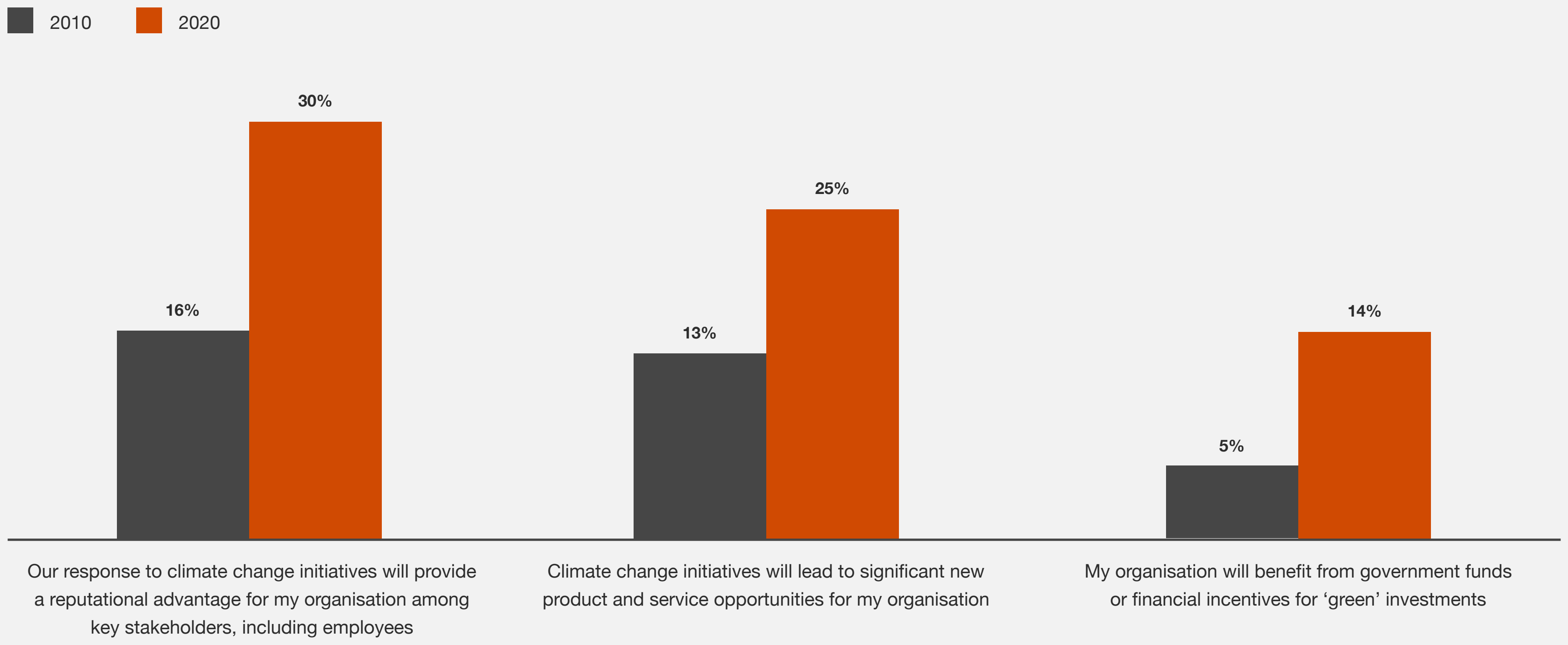
In the world's largest economies, where the need to reduce carbon emissions is greatest, CEOs broadly recognise the silver lining in the climate change cloud: new product and service opportunities (see Exhibit 17). China's growing embrace is the most pronounced; in 2010, only 2% of China CEOs saw opportunity in the climate change crisis for new products and services. Now, nearly half (47%) do.

Exhibit 16

Compared to ten years ago, CEOs are more likely to recognise the benefits of investing in climate change initiatives

Question

How strongly do you agree or disagree with the following statements regarding climate change? (showing only 'strongly agree')



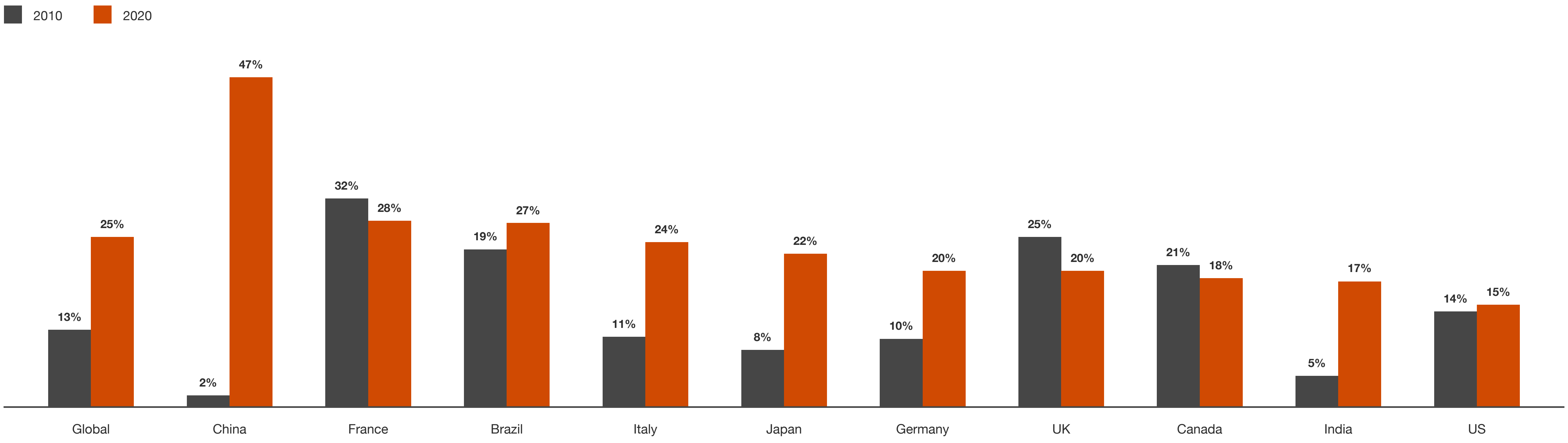
Source: PwC, 23rd Annual Global CEO Survey
Base: Global respondents (2020=1,581; 2010=1,198)

Exhibit 17

Climate change opportunities are increasingly embraced among most of the world's largest economies, especially China

Question

How strongly do you agree or disagree that: 'climate change initiatives will lead to significant new product and service opportunities for my organisation'? (showing only 'strongly agree')



Source: PwC, 23rd Annual Global CEO Survey
Base: Global respondents (2020=1,581; 2010=1,198), territory respondents (2020=3,501; 2010=1,596)

“From 2006 to now, we have reduced our water consumption in Mexico by 50%, and we’re continuing that progress by investing in some very modern technologies. One is aeroponics, in which plants basically grow in the air, rather than in the earth. This allows us to consume a mere 10% of the amount of water compared to traditional agriculture.

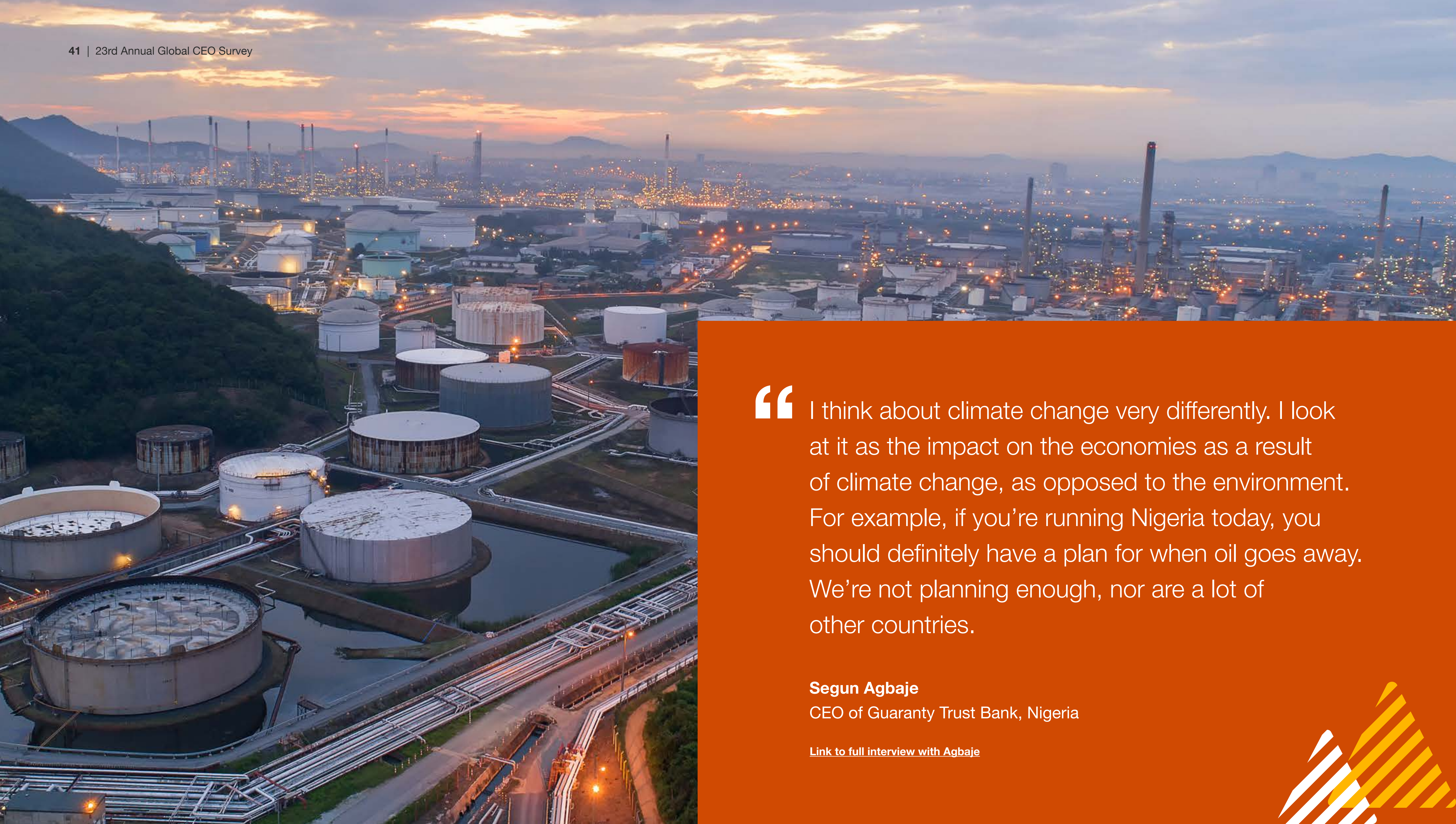
Roberto Martínez
CEO of PepsiCo Foods Mexico

Link to full interview with Martínez

China is an interesting case study because it is both the largest market for green products and the most polluting country, from a carbon perspective.[25] China burns about half the coal used globally each year, and its annual carbon emissions account for about 30% of the world’s total. Yet it’s also the leading market for solar panels, wind turbines and electric vehicles, and it manufactures about two-thirds of solar cells installed worldwide.[26]

Meanwhile, some of the CEOs whose nations were at the forefront of the campaign to arrest climate change ten years ago — France, the UK, Canada — are slightly less enthusiastic about new product and service opportunities. In 2009, when they were surveyed, they might have been looking ahead to the United Nations Climate Change Conference in Copenhagen, which committed for the first time since the Kyoto Protocol to setting new emission reduction targets and deadlines.[27] Ten years, and many underwhelming climate change conferences and national commitments later, their optimism has waned.

In the US, where CEOs are the most sceptical about the opportunities climate change can bring among major economies, attitudes have hardly budged. A possible explanation lies in the success of the shale revolution over the past decade. Having unleashed massive supplies of natural gas and oil, fracking has propelled the US into the position of a world leader in fossil fuel production. This development may be tamping down the urgency to shift to ‘green’ energy technologies.[28]



"I think about climate change very differently. I look at it as the impact on the economies as a result of climate change, as opposed to the environment. For example, if you're running Nigeria today, you should definitely have a plan for when oil goes away. We're not planning enough, nor are a lot of other countries.

Segun Agbaje
CEO of Guaranty Trust Bank, Nigeria

Link to full interview with Agbaje

In general, CEOs in Western Europe and Asia-Pacific report being furthest ahead in assessing the risks of climate change initiatives, which is not surprising given that many governments that have committed to net-zero emissions by 2050 are located in these regions.[29] However, other regions show more limited progress. One concerning discrepancy is the substantial share of Middle East CEOs who report that they have not assessed the potential transition risks to a 'greener' economy, despite the fact that they are disproportionately exposed to those risks given their economies' reliance on oil revenues to finance their budgets (see Exhibit 18).[30]

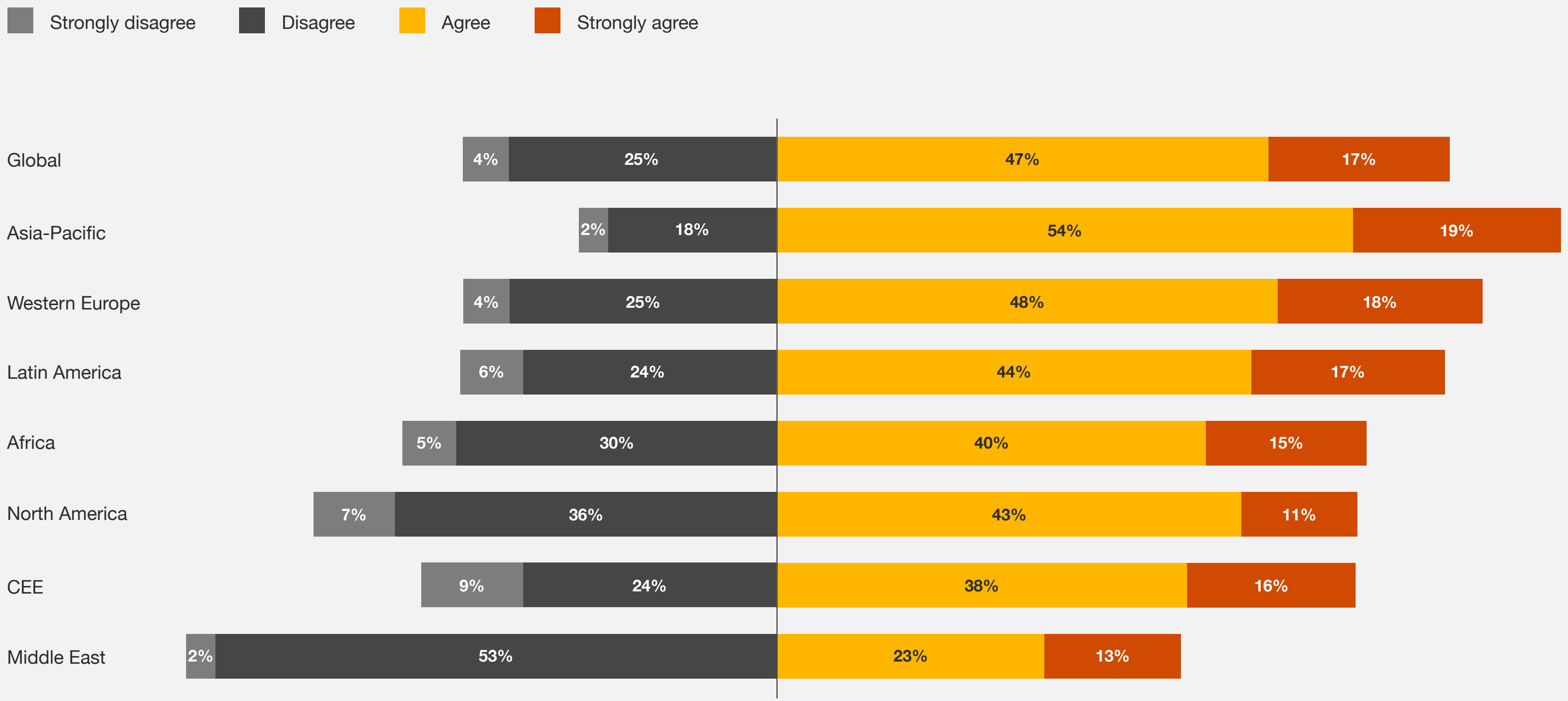
One of the frustrations of dealing with climate change is the long time horizon before any real environmental results become evident. It is true that those in a position to set and implement policy may not see the fruits of these initiatives during their tenure. At the same time, young people — the consumers and workers of the future — are becoming more impatient and ratcheting up their demands for stakeholders to act.

Exhibit 18

Progress towards a 'greener' economy is slowest in regions where it is needed most

Question

How strongly do you agree or disagree that: "my organisation assessed the potential transition risks (e.g., carbon regulation and technology shifts) to a 'greener' economy?"



Source: PwC, 23rd Annual Global CEO Survey
Note: Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses
Base: Global respondents (2020=1,581)

Succeeding in uncertainty

A message from Bob Moritz
Chairman of the PwC Network

[Link to profile]

As our survey shows, there is no shortage of factors inspiring uncertainty, whether those factors are structural, economic or technological. This presents a tough challenge for business leaders.

Uncertainty can be an excuse to take essentially defensive actions that may make tactical sense but are strategically counterproductive in both the short term and the long term — reducing investment in people, pulling back from new technologies, shying away from big challenges.

In order to act as stakeholders who build a cohesive and sustainable world (the theme of this year's World Economic Forum Annual Meeting[31]), companies have to lean into changes in the precise moments when it is uncomfortable to do so, and communicate openly about the challenges they face and the actions they're taking.

Confronting uncertainty, leaders must act — and act quickly. Instead of narrowing their focus and looking inward, they should expand their field of vision and strive to create a wider range of options to pursue. Making decisions in a way that is both more dynamic and more resilient — a subject we have covered in detail elsewhere[32] — will enable organisations to thrive in the full spectrum of uncertain outcomes.

At root, all of this means changing how we think about many of the ways we have conducted business for years, if not decades. Leaders today can harness the power of technology to reimagine the way they plot strategy. They can use AI to consider a wide range of scenarios, test and scale options, and feed the knowledge gained back into the system. Understanding how a company can succeed under different sets of conditions increases confidence.

But companies can act on opportunities only if they have the organisational agility that allows them to execute rather than simply react. Building on foundations that are strong but not rigid, leaders must learn to make decisions and allocate resources and capital more nimbly.

It is especially important that leaders consider the pressing and evolving needs of all their stakeholders and demonstrate their ability to confront significant challenges. Companies don't have much control over the broad demographic trends that make it difficult to attract and retain talent. But they can take action to upskill their employees. Those that do so will solidify long-term relationships with employees while building a more agile workforce. As an example, we at PwC are committing US$3bn over the next four years to upskilling initiatives both to train our own people and to develop technologies for our people and our clients.[33]

Climate change poses a significant challenge. As conditions evolve, many organisations are rethinking the vulnerability of their operations and considering the potential for new products and services. At the same time, societal expectations for how business can engage with the climate issue are increasing. One result: it is now imperative for CEOs to develop and integrate a detailed sustainability vision into their long-term strategic plan. At PwC, we are taking such steps as offsetting air travel emissions.

We have also joined RE100, a global coalition of businesses committed to transitioning to 100% renewable usage, and are on a path to source 70% of our electricity needs from renewable sources by fiscal year 2022.[34]

On all these fronts, leaders must ensure that their efforts create lasting value while also building trust with the communities and stakeholders they serve.

We hope that PwC's 23rd Annual Global CEO Survey has provided some food for thought as you chart a course through the uncertain economic and business environment.

As we look ahead, there's one thing of which we are certain: when it comes to the most pressing topics confronting CEOs, collaboration between and among organisations, individuals and governments can meaningfully enhance not only their own prospects but the prosperity and vitality of society as a whole.

Survey methodology

PwC surveyed 3,501 CEOs in 83 territories in September and October 2019. The sample of 1,581 CEOs used for the global and regional figures in this report are weighted by national GDP to ensure that CEOs' views are fairly represented across all major regions. Further details by region and industry are available on request. Seven percent of the interviews were conducted by telephone, 88% online, and 5% by post or face-to-face. All quantitative interviews were conducted on a confidential basis.

Of the 1,581 CEOs whose responses were used for the global and regional figures:

- 46% of their organisations had revenues of US$1bn or more.
- 35% of their organisations had revenues between US$100m and US$1bn.
- 15% of their organisations had revenues of up to US$100m.
- 55% of their organisations were privately owned.

Notes:

- Not all figures add up to 100% as a result of rounding percentages and excluding 'neither/nor' and 'don't know' responses from exhibits.
- The base for global figures is 1,581 (global respondents) unless otherwise stated.

We also conducted in-depth, face-to-face interviews with CEOs from six regions. Some of these interviews are quoted in this report, and more extensive transcripts can be found on our website at https://www.strategy-business.com/inside-the-mind-of-the-ceo.

The research was undertaken by PwC Research, our global centre of excellence for primary research and evidence-based consulting services.

https://www.pwc.co.uk/pwcresearch

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