Navigating short-term volatility in the semiconductor industry

Makers of vital tech are ready to overcome today's obstacles

2023 KPMG Global Semiconductor Industry Outlook

February 2023

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This is the 18th annual KPMG Global Semiconductor Industry Outlook with key findings from a survey of 151 senior executives from global semiconductor companies conducted in the fourth quarter of 2022 by KPMG and the Global Semiconductor Alliance (GSA).The publication is designed for semiconductor CEOs, COOs, CFOs, controllers, finance leaders, and strategic and corporate development personnel. This report is equally relevant for executives of companies whose products are heavily reliant on semiconductor components, including products for telecommunications, telecommunication infrastructure, cloud services, platform providers, Internet of Things (IoT) applications, and automotive electronic applications.

Foreword

No one doubts that the world runs on small but powerful semiconductors inside all things digital and connected. Despite supply chain, talent, and political-economic challenges, the 2023 KPMG Global Semiconductor Outlook shows the industry future is looking bright.

In the fourth quarter of 2022, KPMG LLP and the Global Semiconductor Alliance (GSA) surveyed 151 semiconductor executives about the financial, strategic, and operational trends, issues, and agenda items across the industry and ecosystem. The research shows that despite headwinds, global semiconductor executives maintain an overall positive outlook for the industry in 2023 and beyond.

Forward-looking perspectives on a range of topics demonstrate this optimistic view. Eighty-one percent of respondents expect their company's revenue to grow year over year. Eighty percent expect to soon see an end to the chip shortage that has been burdening OEM and other manufacturers and frustrating end customers in search of all sorts of everyday items that were in short or limited supply. And—using government funds in certain geographies—companies plan to invest in chip production, research, innovation, and talent to meet demand from expanding end markets, such as automotive, wireless communications, and cloud computing. Taken together, we see the criticality of semiconductor technologies to the world's economy, infrastructure, products, and services continuing to be dominant.

Macro economic factors, supply/demand imbalance, talent, and political risks are major forces of pressure on today's global semiconductor market. However, industry executives see growth potential in their own companies and know that long term, the industry is viable and growing, even if a normal cyclical correction is underway. Strategic plans, actions, and investments through 2023 will allow chipmakers to power through these uncertainties with resilience.

Lincoln Clark
Leader, Global Semiconductor Practice
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Key findings

Financial expectations

81% expect their company's revenue to increase in 2023.

Expectations for annual operating profitability of the industry going up or down are evenly split.

64% expect industry revenue to increase in 2023.

The majority plan to increase spending on Capex, workforce and R&D.

Growth products

#1 Automotive is the most important application driving semiconductor companies' revenue streams.

Sensors/MEMS are the most important growth product for the industry.

#2 Wireless ranks as the second most-critical end market, followed by cloud, IoT, and AI.

Operational expectations

52% think the chip supply shortage will ease by mid-2023.

46% will increase geographical diversity of the supply chain in the next 12 months.

24% believe there is already an inventory excess and the chip supply shortage is over.

Strategic and industry issues

#1 A global talent shortage is the top issue in the semiconductor ecosystem.

Nationalization of semiconductor technology is a top geopolitical concern.

67% say talent risk is the top strategic priority over the next three years.

Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

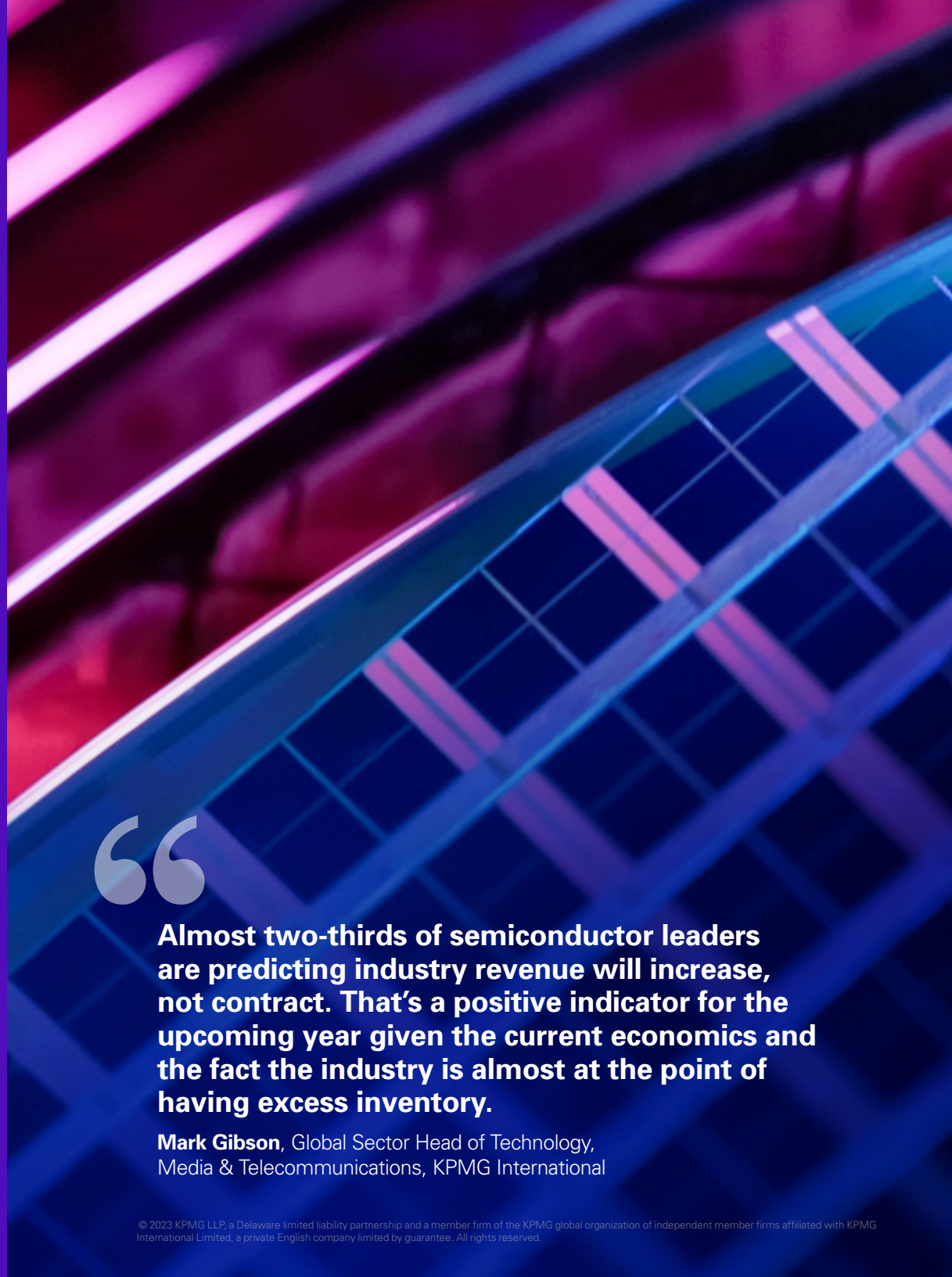
Financial expectations

Key takeaways

— 81% expect their company's revenue to increase in 2023, and 64% expect industry revenue to increase.

— Expectations for annual operating profitability of the industry going up or down are evenly split.

— The majority plan to increase spending on Capex, workforce and R&D.



Almost two-thirds of semiconductor leaders are predicting industry revenue will increase, not contract. That's a positive indicator for the upcoming year given the current economics and the fact the industry is almost at the point of having excess inventory.

Mark Gibson, Global Sector Head of Technology, Media & Telecommunications, KPMG International

Financial expectations

Leaders remain optimistic about revenue growth, though slower rates expected

Semiconductor executives' views on their own company's growth are somewhat more bullish than anticipated, given that the industry is in the midst of a normal correction cycle and many economists around the world are predicting a recession. More than 8 in 10 respondents (81 percent) expect their company's revenue to increase over the coming year. Almost one-quarter (23 percent) expect growth of more than 20 percent.

Although generally optimistic, expectations are lower than those expressed in last year's survey, when nearly all respondents (95 percent)[1] predicted their company's revenue to increase. New factors in play in the semiconductor ecosystem—fears of a downturn, increased geopolitical focus, risks to the supply chain, and rising global inflation—are understandably hampering leaders' outlook, though, as a general trend, most remain positive.

Stressors in the ecosystem are having a more significant impact on this year's industrywide outlook, with cost pressures the key underlying factor driving down sentiment. Facing increased prices for capital, materials, and labor, industry growth and profitability projections are somewhat uncertain.

Company growth expectations outpace those for the broad industry, as reflected in this research and other industry forecasts. In last year's survey, 97 percent forecasted industry revenue would grow in 2022.[2] This year, 64 percent of respondents forecast the industry's revenue will grow in 2023. Nearly half (45 percent) predict industry growth of 10 percent or less. The forecast from the World Semiconductor Trade Statistics is also in the single digits, predicting growth of 4.1 percent in 2023.[3]

Further, there is an even split among those who think industry operating profitability will increase (44 percent) versus decrease (43 percent). This research indicates revenue growth is not all being passed through to the bottom line, largely because inflation in supply chains is being absorbed by chipmakers and not all being passed on to customers.

What is your outlook for your company's revenue growth over the next year compared to the current year? (select one)

What is your outlook for the annual revenue growth of the global semiconductor industry over the next year? (select one)

What is your estimate for the change in the annual operating profitability of the global semiconductor industry over the next year? (select one)

Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

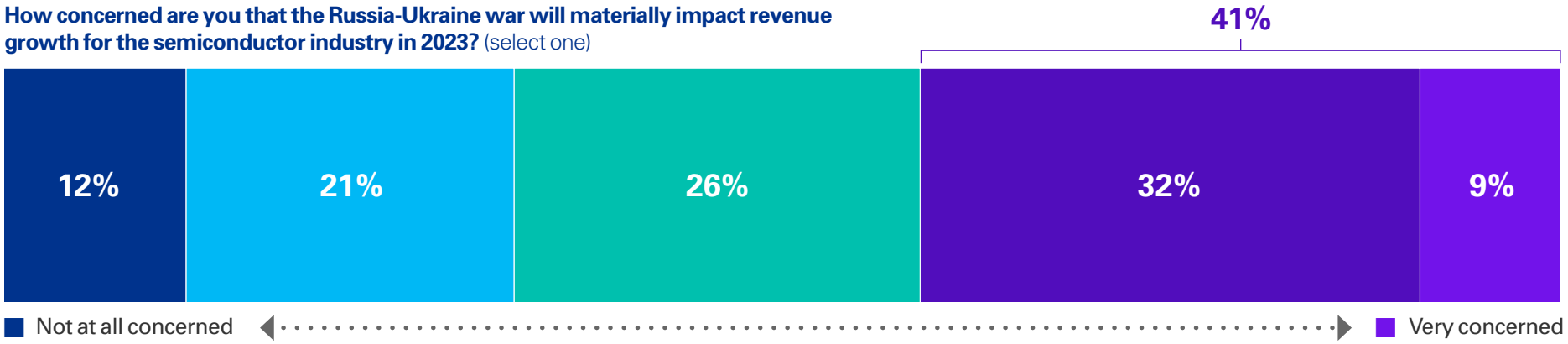
Financial expectations

Indirect impacts of the Russia-Ukraine War lower growth projections

Geopolitical issues also seem to have a notable influence on industry revenue projections. Forty-one percent of semiconductor executives are concerned the Russia-Ukraine war will materially impact industry revenue growth in 2023, a substantial increase from prior KPMG research conducted in May 2022, when a smaller minority (25 percent) expressed that view.[4]

The indirect impact of the war is manifested in several different ways, with some parties blaming it for the high cost of energy, which is a factor that has driven up inflation and interest rates and slowed demand. The 2023 outlook published by KPMG Economics predicts a shallow recession in 2023.[5]

How concerned are you that the Russia-Ukraine war will materially impact revenue growth for the semiconductor industry in 2023? (select one)



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Financial expectations

Spending to increase as inflationary pressure builds

When it comes to spending plans for 2023, rising global inflation and interest rates are the big story. Sixty-two percent of semiconductor leaders expect their company's capital spending (CapEx) on equipment and software to increase from last year. Only 15 percent plan to make CapEx reductions. Three-quarters also say their R&D spending will go up. While companies need to invest to meet future demand, they will be hesitant to borrow at the same levels as they would in a lower-interest-rate environment.[6, 7]

More than 7 in 10 respondents (71 percent) also expect their company's global workforce to expand. Contributing to this view are the strategic commitments being made around the world to increase chip output, including in the U.S., the E.U., and China. To boost capacity, each country is likely to create manufacturing-related jobs to build new foundries and higher-paying specialized jobs to staff new facilities.[8]

Further, while workforce expansion would drive up the cost of doing business in any economic environment, it could reach new levels when we factor in current wage inflation and the competitive talent marketplace.[9] It is also notable that, while major players in the broader technology sector made headline-grabbing cuts and layoffs in 2022,[10] the semiconductor industry has been slower so far in enacting headcount cuts.

What is your outlook for semiconductor-related capital spending by your company (both equipment and software) over the next year compared with your company's current year spending? (select one)

During the next year, do you expect your company's global workforce to increase or decrease? (select one)

What is your expectation for the change in R&D spending by your company for the next year over the current year? (select one)

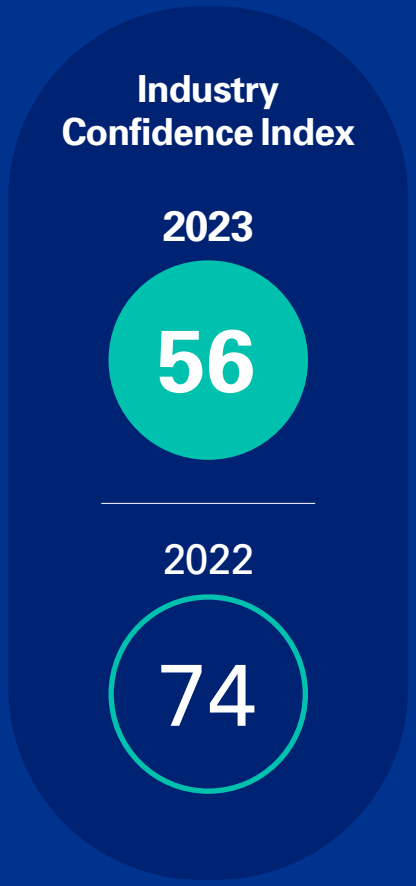
Increase Decrease No change

Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Financial expectations

2023 Semiconductor Industry Confidence Index

Near-term challenges across the global semiconductor industry and ecosystem have arisen in the past year, impacting leader confidence. The 2023 Semiconductor Confidence Index score of 56 represents a steep decline from the all-time high of 74 in 2022 and the lowest level in half a decade. Every individual input of the 2023 Semiconductor Confidence Index is down from the previous year. Demand has been negatively impacted by the macro economic environment, including increasing inflation and interest rates, and semiconductor companies are slowing down 2023 investments. Nevertheless, the long-term viability of this essential industry remains strong, with respondents expressing an overall positive outlook despite near-term obstacles.



*An index value above 50 indicates a more positive (rather than negative) outlook about the industry and its prospects.

Source: KPMG Global Semiconductor Industry Outlook Survey 2023, n=151
KPMG Global Semiconductor Industry Outlook Survey 2022, n=152

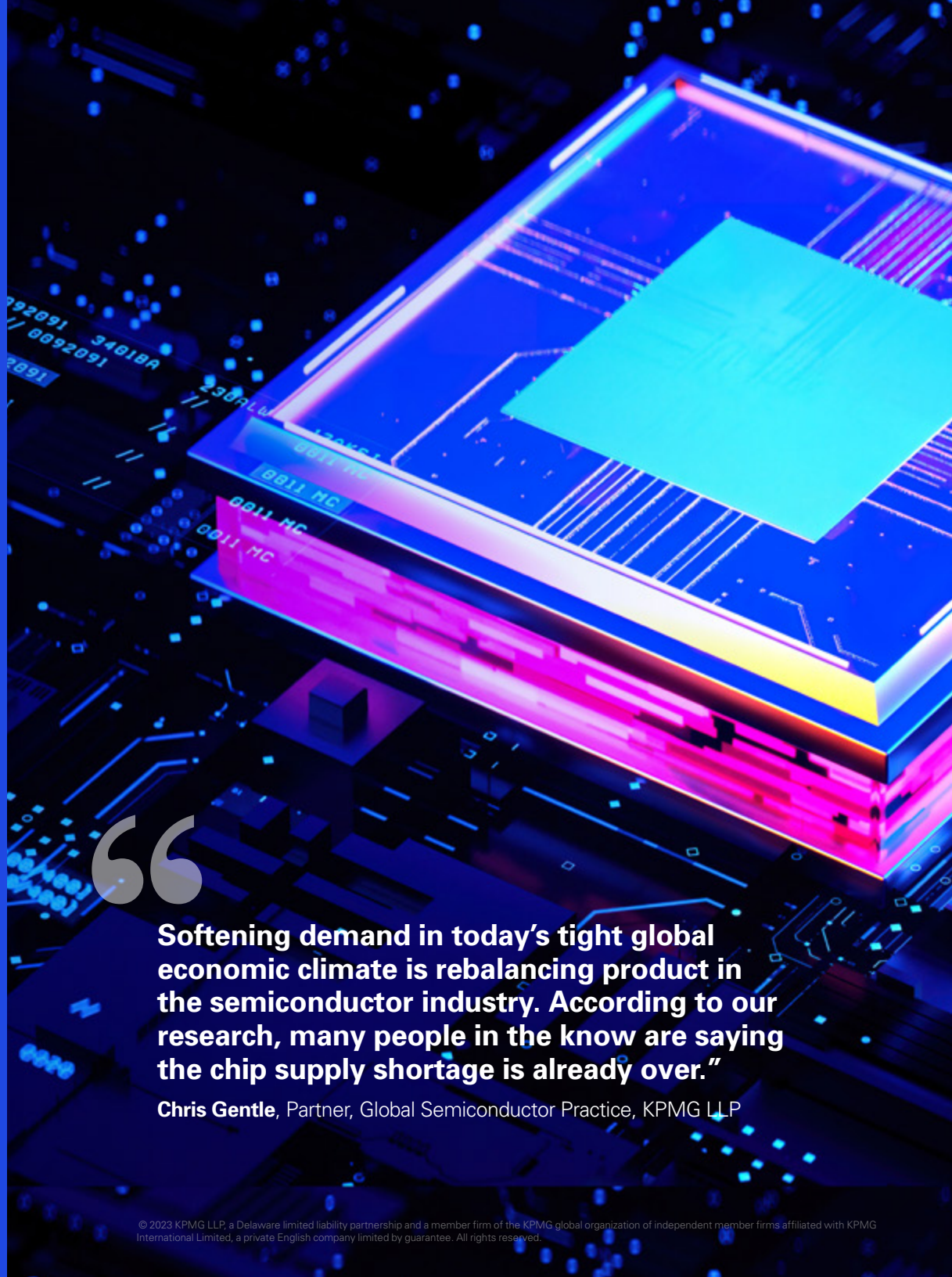
Operational expectations

Key takeaways

— 52% think the chip supply shortage will ease by mid-2023.

— 24% believe there is already an inventory excess and the chip supply shortage is over.

— 46% will increase geographical diversity of the supply chain in the next 12 months.



Softening demand in today's tight global economic climate is rebalancing product in the semiconductor industry. According to our research, many people in the know are saying the chip supply shortage is already over."

Chris Gentle, Partner, Global Semiconductor Practice, KPMG LLP

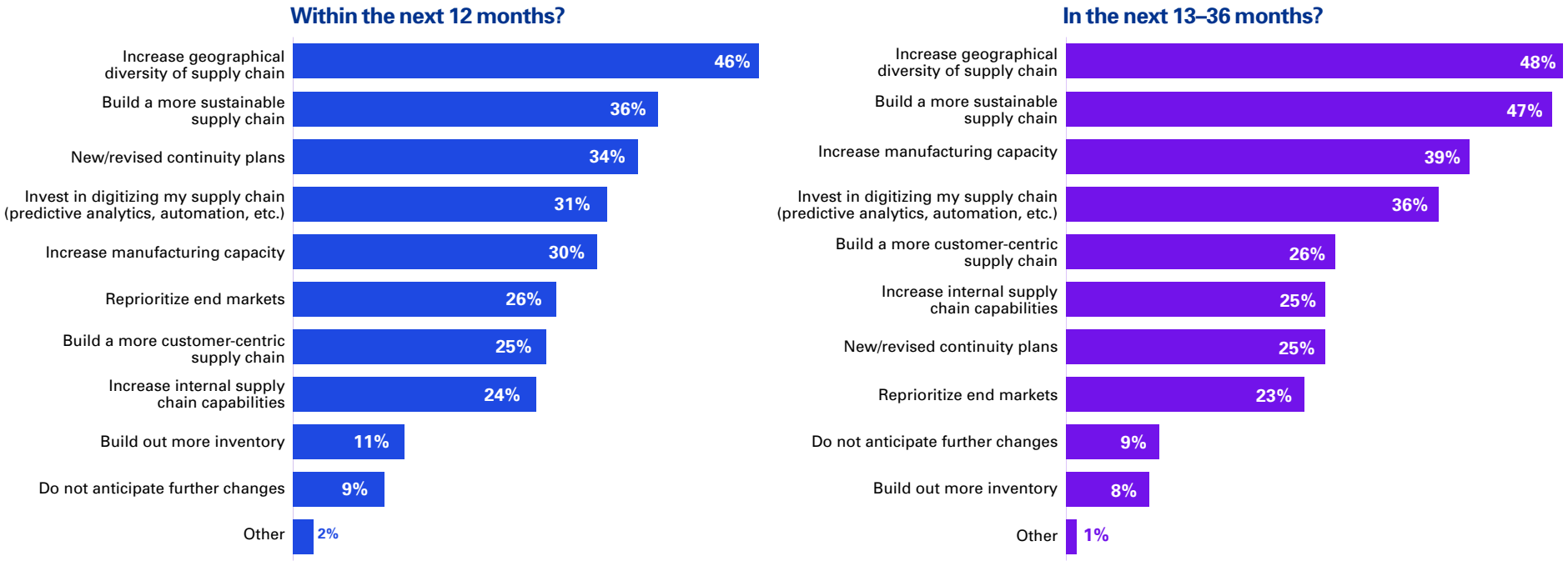
Operational expectations

Supply chain diversification tops the operational agenda

As international conflicts give rise to more nationalization of technology and restrictive trade policies in key regions, the resilience of semiconductor supply chains is under threat.

To improve agility and resiliency, nearly half of semiconductor executives will increase geographic diversity of their supply chain. It is the leading change planned for the next 12 months (46 percent) as well as 13 to 36 months into the future (48 percent).

What changes do you expect to make to improve supply chain agility and resiliency in your company? (select all that apply)



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

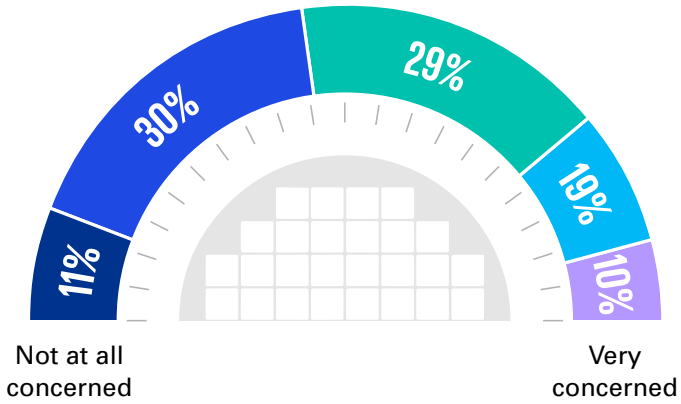
Operational expectations

At a regional level, U.S. companies are particularly focused on supply chain diversification due to trade restrictions with China, making it difficult to source components or assemblies from Asia.[11] The influence of the CHIPS and Science Act—U.S. federal statute signed into law in August 2022—is also playing a key role. The act provides roughly $280 billion in new funding to strengthen domestic semiconductor manufacturing, design, and research.[12]

In the APAC region, making the supply chain more flexible and adaptable to geopolitical changes and other disruptions is the highest priority. With the U.S. government expanding trade restrictions on technology products, Chinese semiconductor companies are scrambling to figure out where to buy the equipment to continue making advanced node products or whether to expand to where restrictions are less debilitating. Further, these trade restrictions are impacting China's ability to import advanced chips for their own manufacturing and end products.

In addition, Asian chip players in Taiwan, Japan, South Korea, Singapore, and Malaysia are much more dependent on China-based imports for components than U.S. chip manufacturers, and the gap looks set to further widen as the CHIPS and Science Act bolsters domestic manufacturing in the U.S.

How concerned are you that the Russia-Ukraine war will materially impact the semiconductor supply chain in 2023? (select one)

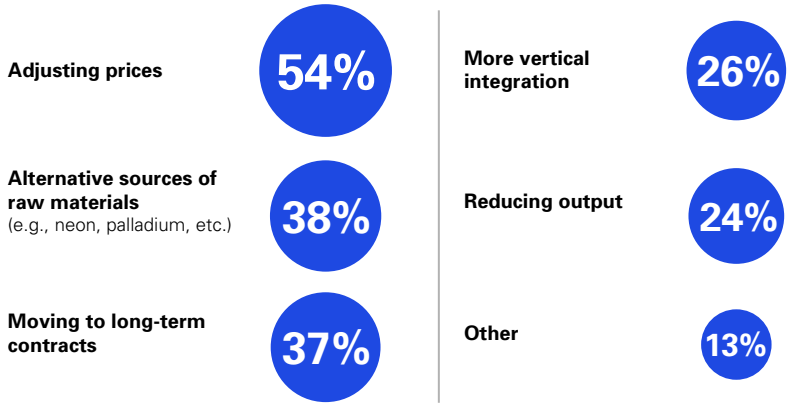


Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

More than half (55 percent) of respondents also selected the long-term impacts of the Russia-Ukraine war as a significant geopolitical issue for their businesses. Semiconductor companies have been dealing with the operational impacts of the Russia-Ukraine war for approximately one year, putting contingencies in place to source neon and palladium and other raw chip materials outside of Ukraine. (And, many companies had already divested away from the region after the Crimea invasion by the Russian military in 2014.) Yet, nearly one in three respondents (29 percent) are still concerned or very concerned about the war materially impacting the semiconductor supply chain. Among those who expressed concern, the leading action planned will be adjusting prices, selected by 54 percent of respondents.

Finally, supply chain sustainability is also an operational focus area for global chipmakers. Thirty-six percent of respondents will make changes to build a more flexible and resilient supply chain in the coming year. That percentages jumps to 47 percent when looking over a two- to three-year time span.

What are you doing to address your organization's concerns?
(select all that apply)



Source: KPMG Global Semiconductor Industry Outlook Survey, among those who are concerned the Russia-Ukraine war will materially impact the semiconductor industry, n=68.

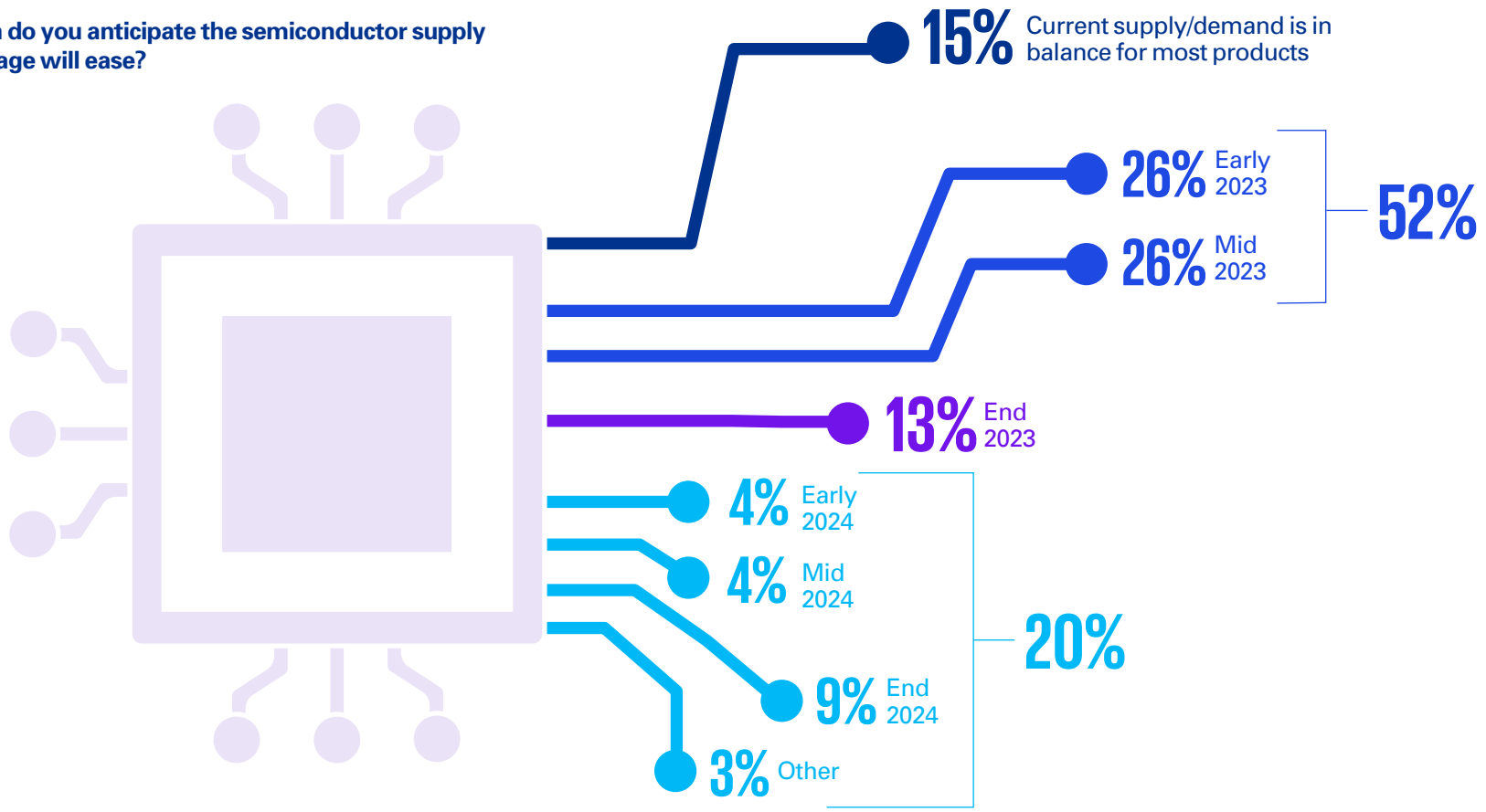
Operational expectations

End of the semiconductor shortage is in sight

Our research indicates that the supply-demand imbalance in the industry has lessened and stabilization of the global chip shortage is fast approaching or already here. In fact, the industry could be shifting from a constrained environment, where it was difficult to get product, to one of abundance driven by excess inventory and weakened demand, as recently seen in memory.

More than two-thirds of respondents (52 percent) think that by mid-2023, the supply shortage with have eased. Fifteen percent think supply and demand is already in balance for most products, while only 20 percent think the shortage will last into 2024 or later.

When do you anticipate the semiconductor supply shortage will ease?



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Operational expectations

Since the semiconductor industry is cyclical, the survey also asked respondents when they think the next excess supply of semiconductor inventory will occur. On this question, predictions vary significantly.

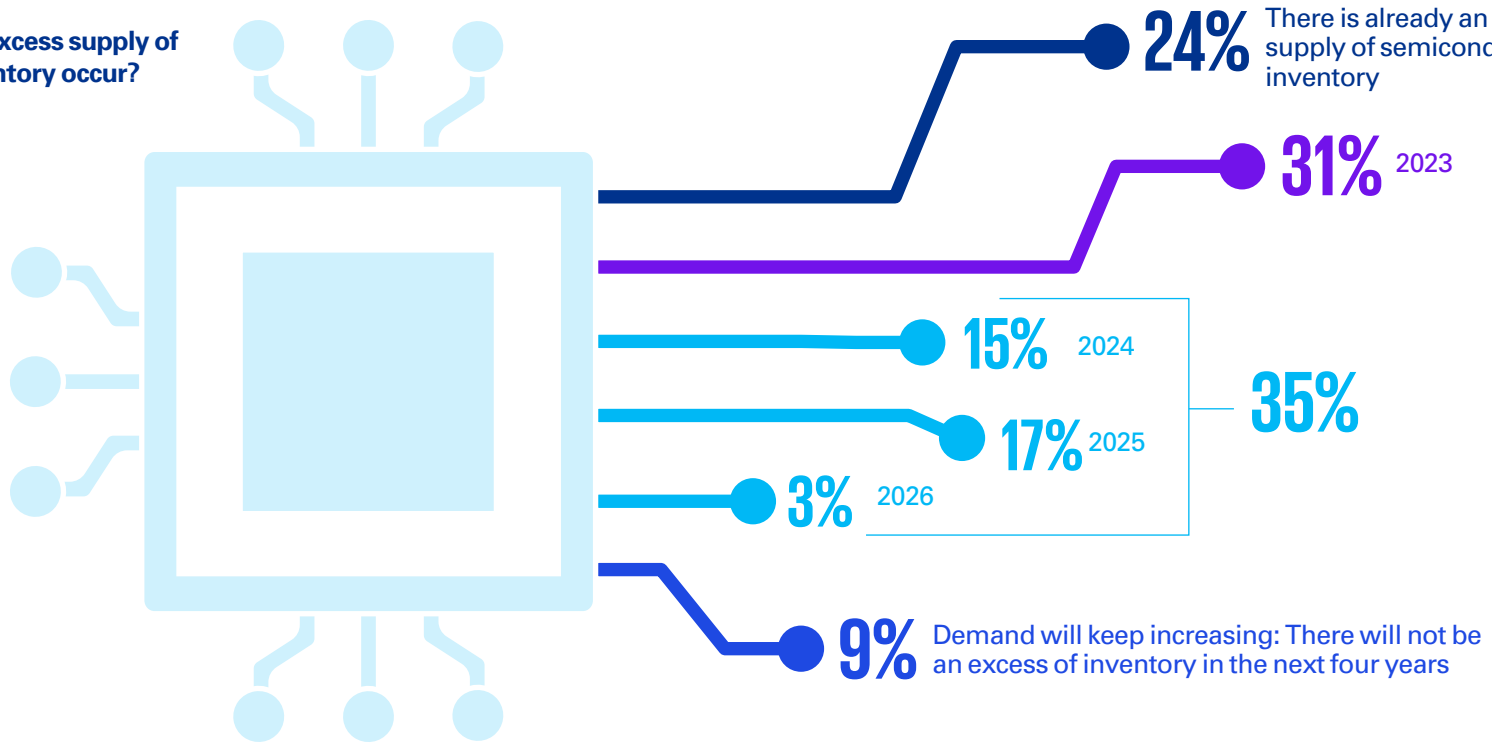
One quarter (24 percent) believe there is already an excess while another 31 percent think the excess will occur in 2023. Another 35 percent feel the surplus will happen between 2024 and 2026, while 9 percent believe demand will keep increasing and there will not be an inventory excess in the next four years.

Similarly, semiconductor executives rank excess semiconductor capacity as a far more important industry issue than semiconductor production constraints (25 percent versus 14 percent). *See the Strategic and industry issues chart on page 18 for more.*

We believe these findings reflect multiple factors: the need for new chips softening after an extended period of high demand, inflation driving production costs up, and new foundries being created outside of Asia adding capacity.

The inconsistencies also reflect the fact that this research presents a broad industry view, but expectations for supply deficits or excesses will most likely vary by product line, sector, and application. Pockets of the ecosystem have a huge oversupply, like memory, while other sectors, if they are feeding a still growing end market like automotive, are still climbing out of supply deficit.[13]

When will the next excess supply of semiconductor inventory occur?



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

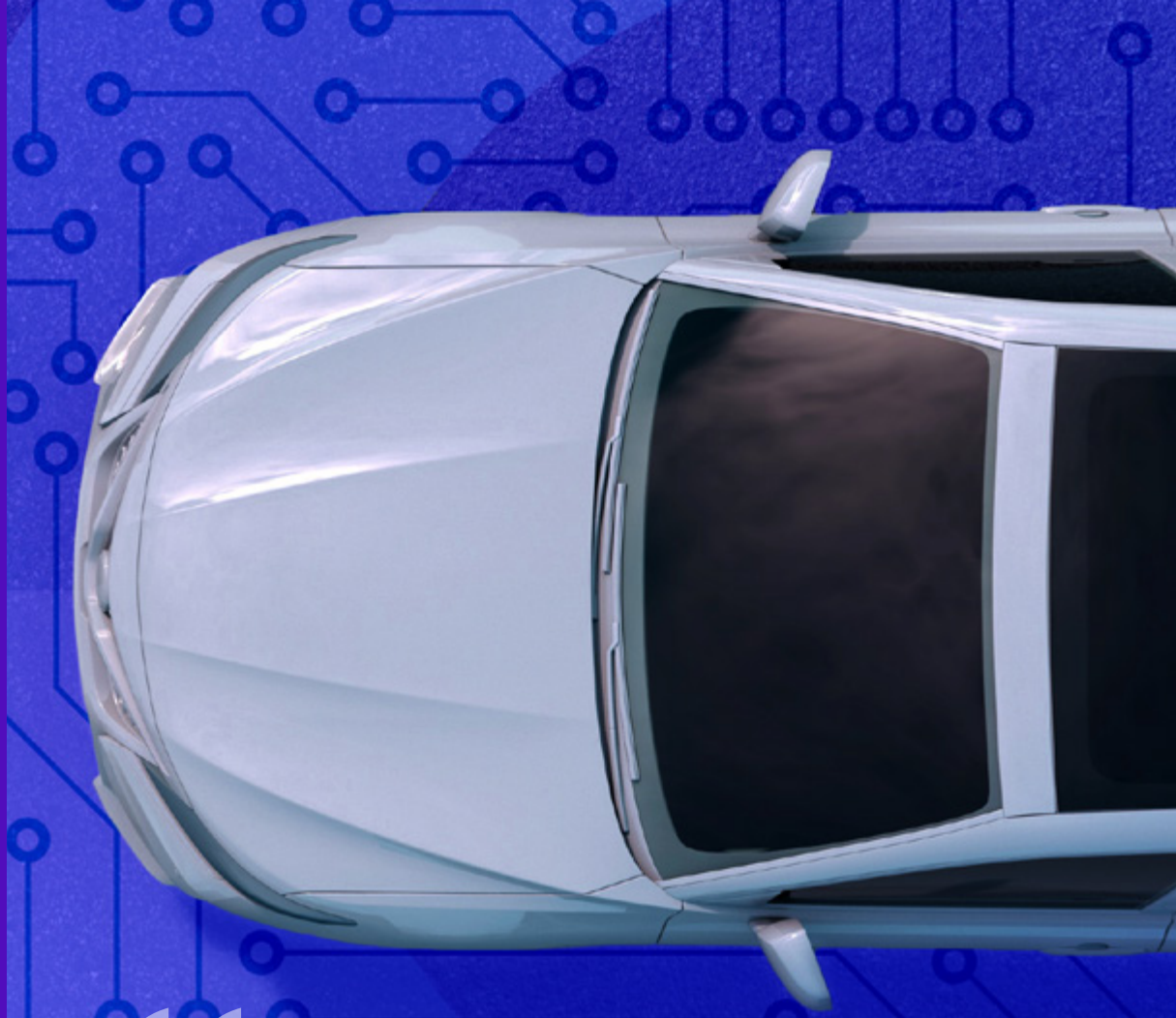
Growth products

Key takeaways

— Automotive is the No. 1 most important application driving semiconductor companies' revenue streams.

— Wireless ranks as the second most critical end market, followed by IoT, cloud, and AI.

— Sensors/MEMS are the most important growth product for the industry.



"As carmakers accelerate electric vehicle production, the automotive market is now the number one revenue growth driver for semiconductor companies, and it's not even close."

Irene Signorino, Managing Director, Strategy, KPMG LLP

Growth products

Automotive takes the pole position as the most important revenue growth driver

According to the 2023 outlook, semiconductor industry growth is becoming increasingly tied to the electrification and increased autonomous features of new vehicles.

For the first time in KPMG's research, the automotive sector is considered the most important revenue growth driver for semiconductor companies. It ranks highest in importance among other applications by a very comfortable margin. In addition, sensors/MEMS—key components of "computers on wheels"—are considered the most important growth product for the industry in 2023.

Contributing to this sentiment is the growing availability of electric vehicles, which are considered cleaner and safer than gas-powered cars, coupled with recent regulations pushing long-term EV production in places like Europe and California.[14] KPMG research on these trends—which are creating strong demand for chips to go inside the latest vehicles—predicts automotive semiconductor revenue will reach $200 billion annually by the mid-2030s, and surpass $250 billion by 2040.[15]

With automotive taking the pole position, wireless communications—long seen as the chipmakers' most critical end market—slipped into second place. Meanwhile, cloud computing rose to third (from fifth) and is now tied with Internet of Things as a top three revenue stream, followed by AI.

In its first year on the survey, metaverse was ranked last (out of 10) in importance for driving semiconductor company revenue over the next year. It will be interesting to see how this view changes in the coming years as metaverse technology matures and adoption increases.

How important are each of the following applications in driving your company's revenue stream over the next fiscal year?
(average rating on a scale of 1-5)

Automotive	3.9
Wireless communications (including 5G technology and infrastructure, smartphones, and other mobile devices)	3.6
Cloud computing/data centers	3.5
Internet of Things	3.5
Artificial intelligence	3.4
Consumer electronics	3.2
Industrial equipment	3.2
Wireline communications	2.8
Personal computing	2.7
Metaverse	2.4

Source: KPMG Global Semiconductor Industry Outlook Survey, averages on a 1-5 rating scale where 1=not at all important and 5=very important, n=151.

Rate each of the following in terms of growth opportunity for the semiconductor industry over the next year.
(average rating on a scale of 1-5)

Sensors/MEMS	3.6
Analog/RF/Mixed signal	3.5
Microprocessors (GPU/MCU/MPU)	3.4
Optoelectronics	3.3
Other logic	3.0
Discretes	2.9
Memory(Flash/DRAM)	2.7

Source: KPMG Global Semiconductor Industry Outlook Survey, averages on a 1-5 rating scale where 1=extremely low growth opportunity and 5=extremely high growth opportunity, n=151.

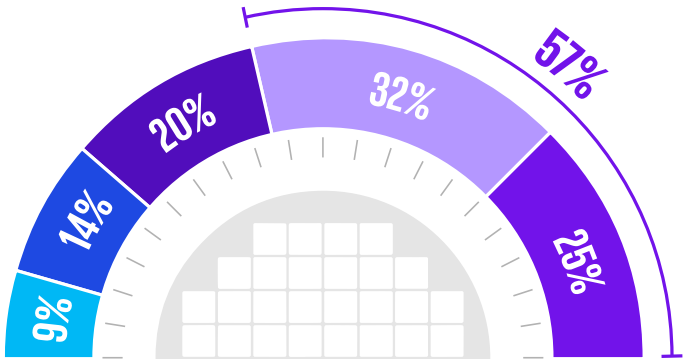
Growth products

The research also shows that structuring and aligning organizations around end markets is becoming ever more crucial to semiconductor strategies. Continuing a trend found in last year's research, more companies (57 percent agree or strongly agree) are becoming oriented by end markets as opposed to products.

To help ensure they have a supply of chips needed for key components in the event of the next semiconductor shortage, manufacturers from high-growth sectors, including automotive,[16] are building more direct relationships with chip companies, that might involve committing to higher volume over longer periods of time and a more hands-on approach to chip development. In turn, chip companies are reorganizing themselves around these new partnerships, helping them better manage their costs and risks.

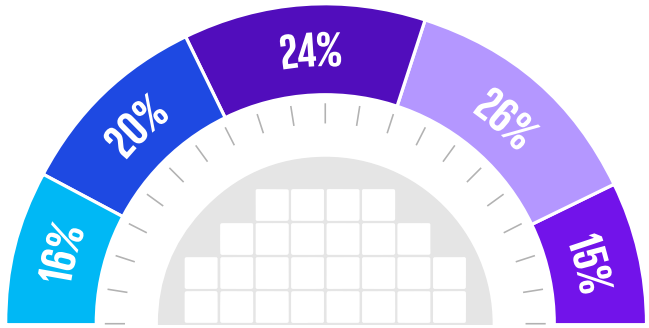
To what degree do you agree with the following statement?

Our organizational structure has moved towards being more oriented by end markets (for example: automotive, communications, etc.). (select one)



To what degree do you agree with the following statement?

Our organizational structure has moved towards being more organized by product BUs (such as sensors and MEMS) that sell into multiple end markets. (select one)



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Strategic and industry issues

Key takeaways

— A global talent shortage is the No. 1 issue in the semiconductor ecosystem.

— 67% say talent risk is the top strategic priority over the next three years.

— Nationalization of semiconductor technology is a top geopolitical concern.

Strategic investments among major global powers to boost domestic manufacturing of semiconductor technology are having ripple effects through the ecosystem. In particular, they are exacerbating the struggle for talent as chipmakers expand their workforces and shuffle their supply bases to boost capacity within their own borders."

Lincoln Clark, Leader, KPMG Global Semiconductor Practice

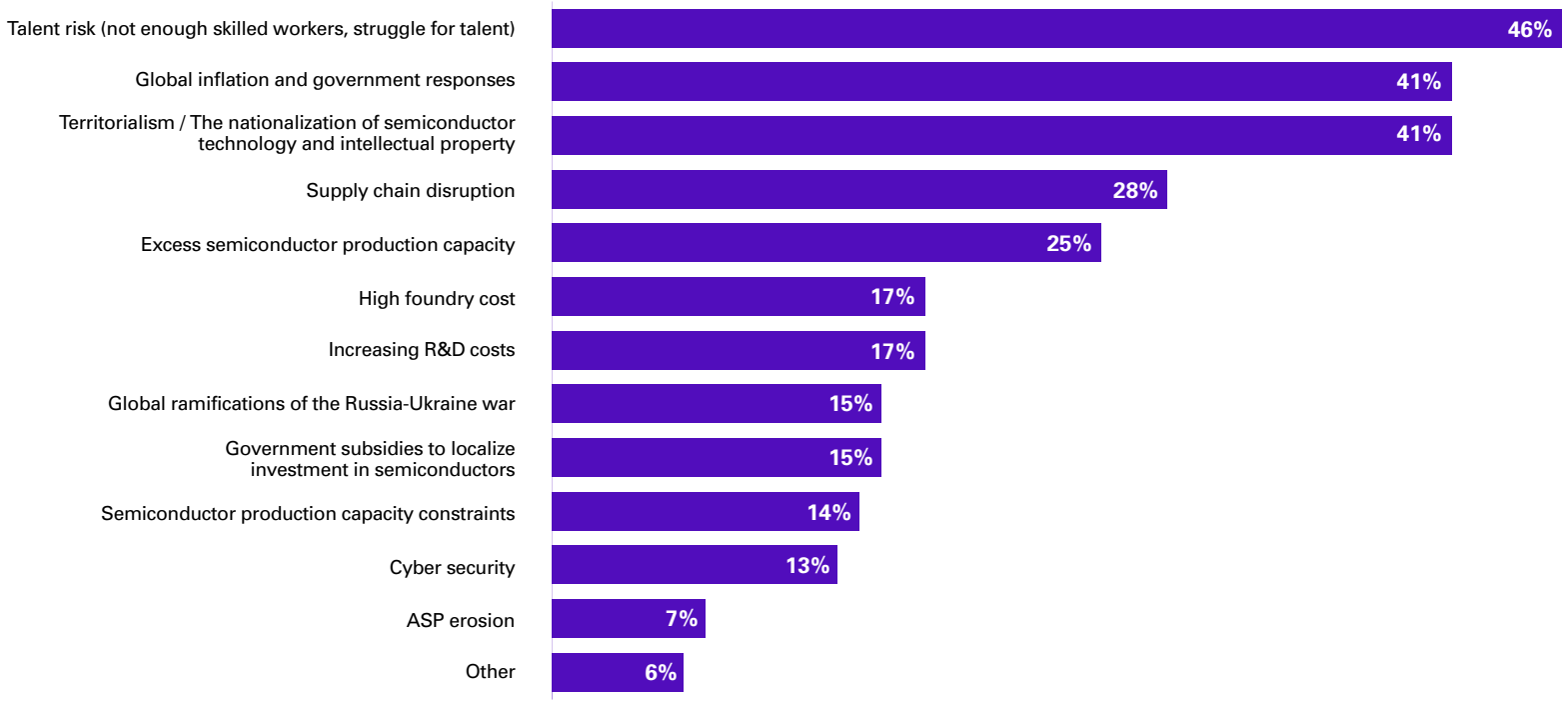
Strategic and industry issues

Talent repeats as the biggest industry issue and strategic priority

From chip technologists, engineers, and designers to back-office staff and project managers, to factory workers in plants and foundries, people resources are crucial assets to keep the global semiconductor ecosystem running. Where they will come from is a major source of concern in 2023 and beyond.

According to our research, talent is the hottest topic in the semiconductor C-suite. Talent risk—including lack of skilled workers and attraction and retention struggles—ranks as the top issue for the industry in the next three years.

What do you see as the biggest issues facing the semiconductor industry over the next three years? (select up to three)



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Strategic and industry issues

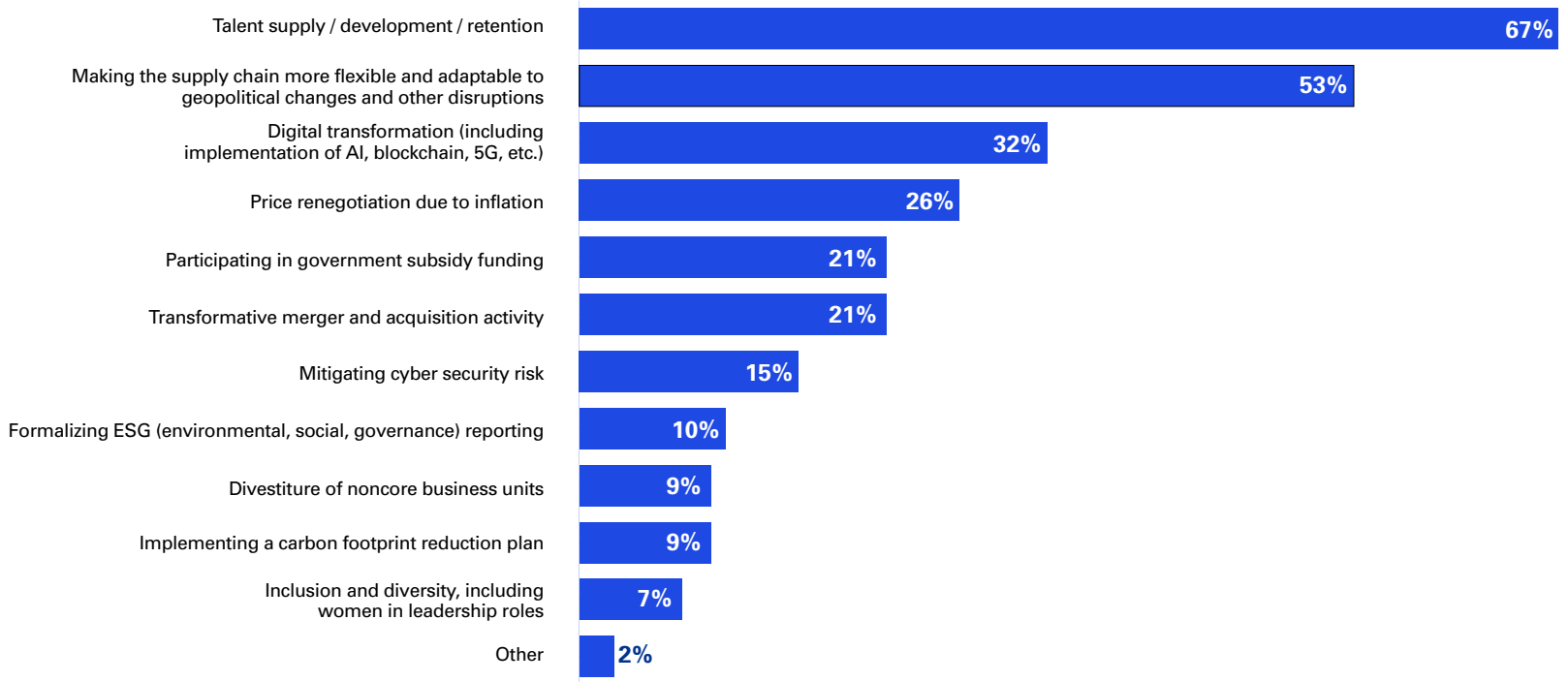
Corroborating this key finding, talent supply, development, and retention is also the No. 1 strategic priority for chipmakers. Two-thirds of respondents (67 percent) name it as the top strategic priority over the next three years. While lower than the 77 percent mark in last year's survey, it still clearly outpaces supply chain flexibility (53 percent) and digital transformation (32 percent) this year.

The primary challenge is that there is simply not enough talent with the specialized skills needed to design chips and the software that goes with them. According to a recent study, the U.S. alone faces a shortage of design workers and is on track for a shortage of 23,000 designers by 2030.[17] While this is a U.S.-centric data point, it lends credence to our global survey result that says 71 percent expect to add headcount in the next year. This is lower than last year (87 percent), but still a healthy expectation in the current economic climate.

Driving demand for talent are political actions by numerous global governments to make domestic semiconductor manufacturing a strategic imperative.

For example, the enacted CHIPS and Science Act in the U.S. and the proposed European Chips Act contain government funding and support for talent development.[18] These incentives will make it more attractive to make, build, and staff new fabs needed to match increased domestic capacity goals.

In addition to growth, what are the top three strategic priorities for your organization over the next three years? (select up to three)



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Strategic and industry issues

Another factor adding to high levels of talent risk is tech giants, platform companies and now some automotive companies developing their own chips and silicon capabilities. With big tech asking for the same specialized talent that traditional chip manufacturers need, there simply is not enough to go around. About half of respondents (51 percent) think the primary impact of these newer players entering the semiconductor industry is increased competition for talent. Adding to the talent strain is that many tech-adjacent industries, such as automotive, are starting their own semiconductor divisions that must be staffed.

As the tech giants and platform companies continue to develop their own chips and silicon capabilities, what do you expect the primary impact will be to the industry over the next 3 years? (select one)

Increased competition for talent

New competitors will emerge

Increased foundry capacity constraints

Supply chains will be disrupted

Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Strategic and industry issues

Nationalization of semiconductor technology is a top geopolitical concern

Countries moving toward "tech sovereignty" is one of the most significant challenges in the global semiconductor industry in 2023. This political trend is spreading across the semiconductor space, with major global powers enacting legislation to bring chip manufacturing back home instead of relying on foreign supply chains.

Recent incentives for various countries to onshore production of semiconductor-based products—including the CHIPS and Science Act in the U.S., the Made in China 2025 initiative, and the proposed European Chips Act—have widespread implications on global supply chains, talent acquisition and access to government subsidies.

Among geopolitical matters, semiconductor executives rank the nationalization of semiconductor technology and intellectual property as a top concern, tied with the prominence of Taiwan in the supply chain. The same concern also ranks second among all industry issues over the next three years, tied with global inflation and government responses and behind only talent risk. *See chart on page 18 for more.*

Other top geopolitical concerns include tariffs and trade deals, long-term impacts of the Russia-Ukraine war, and government subsidies to localize investment in semiconductors.

How concerned are you about the impact of the following geopolitical matters on the global semiconductor industry and ecosystem over the next two years? (average rating on a scale of 1-5)

Source: KPMG Global Semiconductor Industry Outlook Survey, averages on a 1-5 rating scale where 1=not concerned at all and 5=very concerned, n=151.

Strategic and industry issues

Industry to build on efforts related to ESG, cyber and M&A

Though still important, other noteworthy strategic areas rank lower on the semiconductor C-suite agenda over the next three years, compared to talent supply.

For example, only 10 percent of respondents rank formalizing ESG reporting a "top 3" strategic priority, despite looming mandatory reporting requirements. This is likely because the industry is not starting from scratch. Many large public companies have long been publishing sustainability reports which—based on the latest SEC proposals—encompass many elements of what is now likely to be required. Their focus now is putting compliance around ESG reporting. With reporting mechanisms in place and talent already aligned to the effort, ESG reporting should be a less intensive undertaking than the industry's top-ranked priorities.

Cybersecurity risk is also a middle-of-the-pack strategic priority, selected by 15 percent of respondents in their top three ranking. Semiconductor leaders also ranked cybersecurity as one of the lower issues facing the semiconductor industry over the next three years. These track with findings in the latest KPMG Technology Industry CEO Outlook.[19] Cybersecurity was tied for the fifth biggest threat to technology company growth over the next three years, after being named the clear top threat in the previous survey.

Lastly, smaller percentages of respondents rank transformative merger and acquisition (M&A) activity (21 percent) and divestiture of non-core business units (9 percent) among their top 3 strategic priorities. Most companies that do plan to engage in acquisitions and divestitures in the next three years say they will be primarily pursuing small scale deals (48 percent). Economic constraints—namely the high cost of borrowing capital—are a key factor driving down transaction activity in the semiconductor ecosystem. Regulatory roadblocks in the U.S. are creating resistance. And Chinese trade policies are limiting dealmaking in one of the semiconductor industry's largest markets.

What type of M&A and/or divestiture activity do you predict your company will undertake over the next 3 years? (select all that apply)

Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

Next steps

Entering 2023, chip companies will confront challenges related to high inflation, pockets of excess inventory, supply chain disruption, talent risk, and political reforms. Yet this is a strong, resilient industry with products that are critical to our high-tech world. There is plenty of growth opportunity to be had. We offer strategic and tactical advice across key industry themes for semiconductor executives to deliver today, counter disruption, and seize emerging opportunities.

Make the most of the downturn

Fine-tune your commercial strategy, hold on to key talent with recognition and rewards and use M&A to prune the portfolio while investing in assets that deliver new sources of growth. This will strengthen your company's position when the market recovers.

Navigate supply chain uncertainty

Turn supply chain challenges into a competitive advantage by enhancing planning, agility, and visibility. A mature planning capability helps you stay a step ahead of risks and opportunities. A responsive supply chain helps you deal with unexpected threats efficiently and profitably. And forward-looking visibility, enabled by digitization, helps you enhance collaboration across your end-to-end supply chain ecosystem.

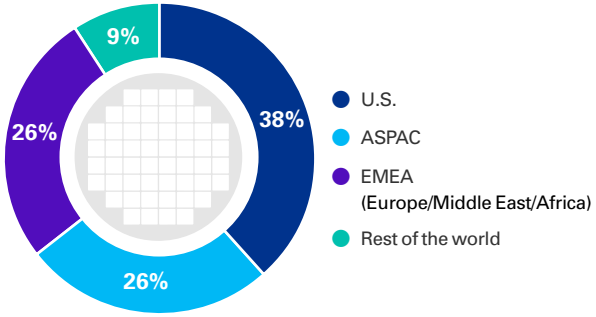
Tap into nontraditional talent

In a job hunter's market, past strategies to attract, retain, and develop workers have become less effective. Shifting your approach to incorporate nontraditional talent can help you fill open positions and increase retention of sought-after talent once hired. A good starting point to a future-forward talent strategy is assessing the strategic skills that need to be added to the workforce as the nature of work evolves using advanced data analytics.

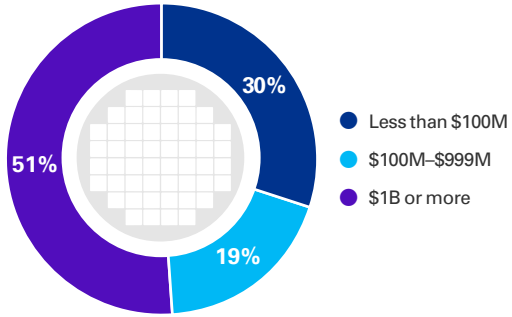
Research methodology

The insights in this report are drawn from a web-based survey of 151 senior executives from global semiconductor companies, conducted in the fourth quarter of 2022 by KPMG and the GSA. In this report, percentages may not sum to 100 percent due to rounding, unless otherwise noted. Respondent demographics are as follows.

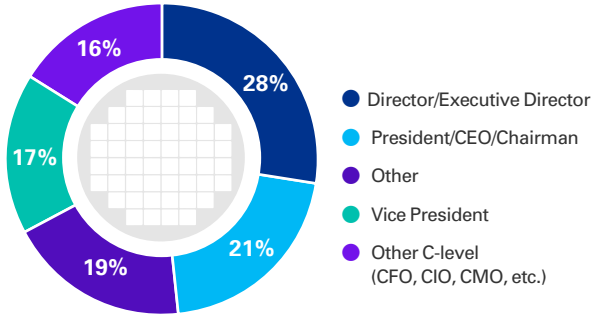
Geography



Company size



Respondent title



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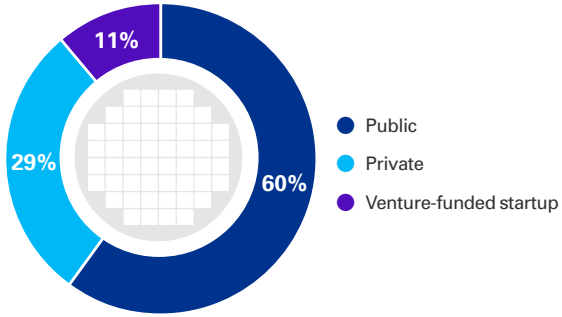
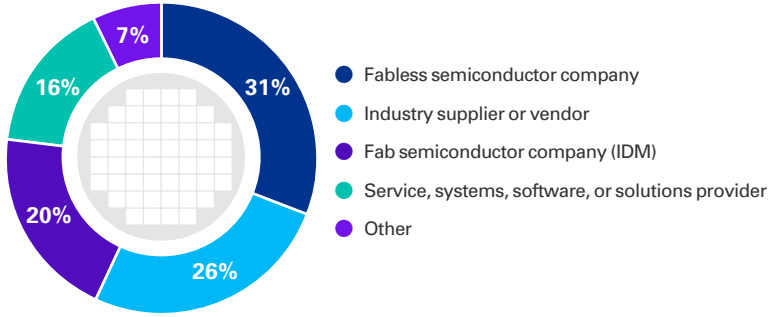


Industry segment



Source: KPMG Global Semiconductor Industry Outlook Survey, n=151.

About KPMG and the GSA

KPMG Global Semiconductor practice

Technology touches virtually every aspect of our daily lives, especially now that much of the business world has entered the work-from-anywhere paradigm. The semiconductor industry is leading the way in this digitized and connected world, and the KPMG Global Semiconductor practice is here to help semiconductor companies navigate it. KPMG firms across the globe work with semiconductor clients of all sizes to look beyond today's pressing business challenges and anticipate the strategic choices that can best position them for both short- and long-term success.

For more information, please visit kpmg.com/semiconductors

Global Semiconductor Alliance

GSA is Where Leaders Meet to establish an efficient, profitable, and sustainable high-tech global ecosystem encompassing semiconductors, software, solutions, systems, and services. A leading industry organization that represents more than 30 countries and 300 corporate members, including 100 public companies, GSA provides a unique, neutral platform for collaboration, where global executives interface and innovate with peers, partners, and customers to accelerate industry growth and maximize return on invested and intellectual capital. Members of the GSA represent 70 percent of the over $550 billion semiconductor industry, and membership continues to grow.

Learn more at www.gsaglobal.org

Notes

1 KPMG Annual Semiconductor Industry Report 2022, n=152

2 KPMG Annual Semiconductor Industry Report 2022, n=152

3 WSTS Semiconductor Market Forecast Fall 2022 (WSTS, November 29, 2022)

4 KPMG Semiconductor Industry Pulse Report (KPMG, May 2022) n=28

5 A Wonderful World? 2023 Outlook (KPMG Economics, December 2022)

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10 Tech Layoffs In 2022: The U.S. Companies That Have Cut Jobs (Crunchbase.com, December 9, 2022)

11 China Buys Fewer Chip-Making Machines as US Restrictions Start (Bloomberg.com, November 22, 2022)

12 FACT SHEET: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China (Whitehouse.gov, August 9, 2022)

13 From dearth to glut: why there's an oversupply of some computer chips (Marketplace.org, November 10, 2022)

14 Electric-vehicle charging gets a $7.5 billion boost (KPMG LLP, 2022)

15 Growth in automotive semiconductors outpace expectations (KPMG LLP, 2022)

16 Chip makers have a message for car makers: Your turn to pay (Reuters, August 3, 2022)

17 The growing challenge of semiconductor leadership (SIA/BCG, 2022)

18 The European Chips Act: A Strategy to Expand Semiconductor Production Resiliency (Center for Strategic and International Studies, March 7, 2022)

19 2023 Technology Industry CEO Outlook (KPMG LLP, 2022)

About the authors

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