# Navigating New Inflation Frontiers

Around the globe, inflation rates have fallen from 2022 highs but remain elevated, driven by labor shortages, higher energy prices, geopolitical tensions, and supply chain disruptions. The big question is how will high-growth businesses perform in an environment in which price pressures persist. While we cannot know how long prices will remain elevated, we believe there are certain types of growth businesses that are most suited to survive and thrive in this new inflation frontier.

As we see it, companies best positioned to withstand difficult macroeconomic economic environments possess key characteristics. They have financial strength, competitive advantages in promising business spaces, and established economies of scale with potent pricing power. These characteristics have as much to do with mitigating business risk (or the erosion of earnings potential) during a challenging environment as they do with driving growth and value creation in a strong economic environment.

Despite these strengths, many of our businesses have seen their valuations compress to multi-year lows as the Federal Reserve and other central banks raised interest rate targets to fight inflation. (Rising rates push up the discount rates used to value stocks, which tends to push valuations down). As rates and inflation return to more normalized levels, we believe once-panicked markets will return focus to underlying business fundamentals to discover that many of our companies now offer compelling investment opportunities. We believe financially stronger companies could take market share from competitors who rely on now higher costs of capital to fund their growth.

Innovation, and digitalization in particular, have helped many businesses maintain that strength, keeping inflationary pressures in check by reducing the cost of goods and labor and increasing output. Companies that can use technology to sell or distribute products better, faster, and more cheaply also stand to benefit.

Over the past decade, the technology-driven economy has enabled a level of increased productivity that has offset wage inflation. To us, this trend has been most evident in ecommerce and other industries with asset-light business models. In a sense, we can view inflation as a positive for many innovative businesses, given that rising prices can drive faster adoption of technologies that enable companies to lower input costs by reducing the materials and people required in the production process.

To that end, corporate investments in services and technologies that can counter the effects of inflation are already at historic levels.[1] We believe there are certain businesses that can offer long-term wealth creation opportunities for investors: first, price setters, select businesses that can use their competitive advantage to pass prices along to customers; second, automators, companies that provide automation equipment to help companies contend with rising labor costs; and third, cost cutters (aka the scalers), companies that deliver goods and services at scale that enable their customers to do more at lower costs.

**The Price Setter**

Competitive advantage is beneficial during all types of market environments, but its value becomes particularly apparent when companies face increased labor and input costs. In general, businesses that hold a near-monopoly status, producing goods or services for which there is no comparable or readily available substitute, should be able to pass on price increases to their customers who, in a sense, will have nowhere else to turn. We have seen this trend play out in semiconductors.

Dutch semiconductor manufacturing equipment vendor ASML was formed in 1984 and exemplifies this near-monopoly status. It is the only company in the world that is able to build the lithography equipment that is fundamental to the fabrication of certain high-end, sophisticated integrated circuits used in advanced applications. It assembles some of the most sophisticated pieces of equipment manufactured by humankind, which unsurprisingly has required large investments in equipment and research and development. Its complex optical system harnesses the light necessary to print tiny patterns on silicon. By specializing and harnessing the economies of scale, ASML is enabling semiconductor companies to create more powerful chips more cheaply.

Businesses like ASML operate at so-called chokepoints in industry value chains and are able to pass on the higher

[1] https://www.morganstanley.com/ideas/technology-and-inflation-businesses

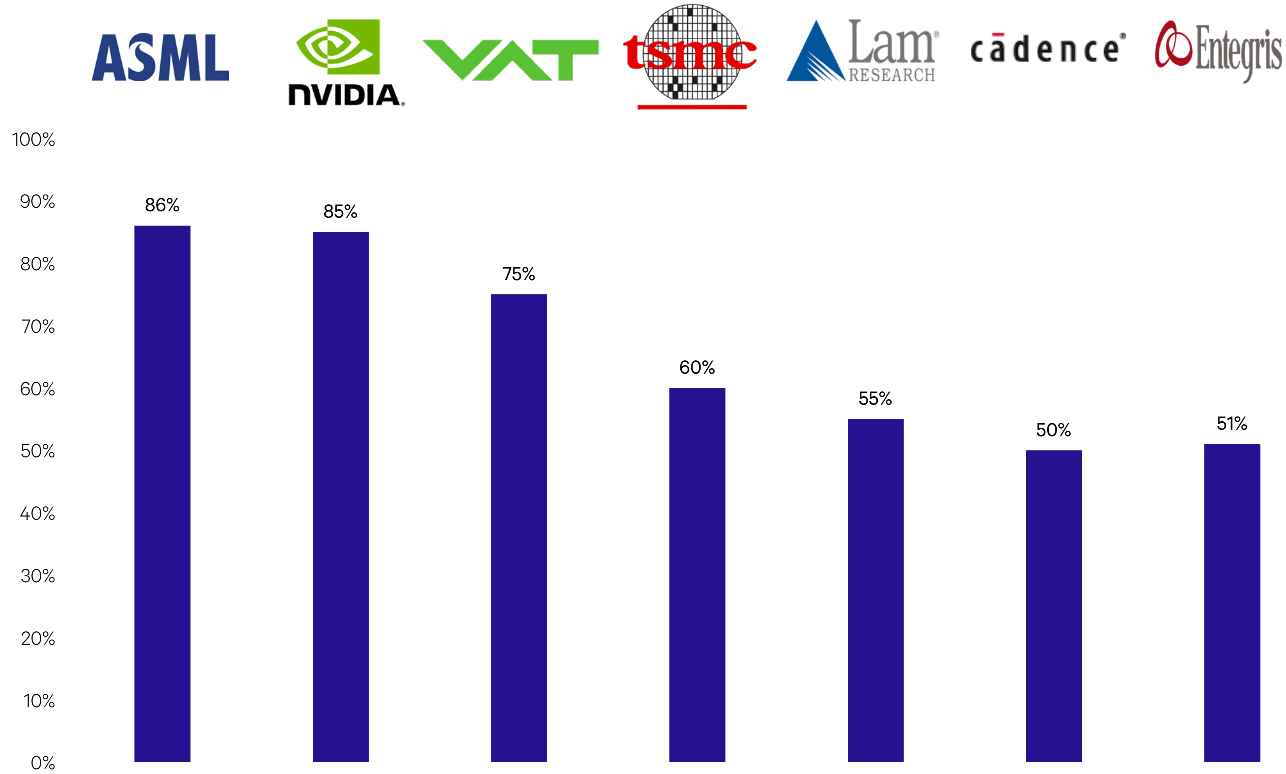
prices they must now pay for labor, components, freight, and energy because their customers lack alternatives. In fact, in 2022, ASML reported weakening macroeconomic conditions had not made a dent in demand for its lithography systems, and it was able to fulfill only about 60 percent of its orders.

Taiwan Semiconductor (TSMC) is another near monopoly that sits at a critical chokepoint in the semiconductor value chain and that has been able to pass higher costs on to its customers. As the world's largest (by production capacity) outsourced semiconductor foundry for logic chips, its services are essentially irreplaceable for its customers, who include vertically integrated original-equipment manufacturers and fabless semiconductor companies that outsource their chip production. TSMC is the only large-scale, customer-dedicated foundry capable of producing leading-edge chips, which are the most advanced chips available in terms of their computing power. Demand for these chips has risen in line with greater power requirements needed for advanced computing uses, such as gaming. However, even as this demand rises, customers are willing to pay more to get access to the advanced graphics that power popular video games. This dynamic has enabled TSMC to increase the cost of its chips by five times since 2022, passing on not only the costs of more compute power but also of rising input prices.

Even if inflation hits consumer sentiment and curbs demand for consumer electronic devices, TSMC is able to rely on a diverse set of growth drivers that benefit from some of the most important technology trends demanding these advanced chips, including the Internet of Things, 5G, artificial intelligence, and autonomous vehicles. We believe TSMC is well positioned within its market and is poised to take market share from competitors over the long term in all market environments. Its strength is due to its high-quality manufacturing process, ongoing investments in innovation, and collaborative relationships with a broad ecosystem of partners. The company is also distinctly positioned as the sole foundry at scale that does not compete with its customers by manufacturing its own designs.

## THE INDUSTRY HAS CONSOLIDATED AMID RISING R&D INTENSITY

Market Share of Vertical Leaders Within the Semiconductor Industry




Estimates as of 5/31/22. Market share estimates sourced from Semi.org, Sands Capital, Trendforce. Chart illustrates the market share held by the share leader within different semiconductor industry sub-categories. Sub-categories for each business are as follows: ASML (lithography), Lam Research (dry etch), Nvidia (AI chips), TSMC (foundry), VAT (semi vacuum valves), Entegris (semi filters). For illustrative purposes only. The specific securities identified and described do not represent all of the securities purchased, sold, or recommended for advisory clients. The reader should not assume that investments in the securities identified and discussed were or will be profitable. The securities identified represent a subset of current holdings in Sands Capital public equity strategies. They represent all holdings in the semiconductor industry.

### The Automator

Companies that supply solutions to lower production costs and increase productivity play an important role as geopolitical tensions prompt many businesses to reshore operations. Bringing manufacturing operations home often means high labor costs, which many businesses are looking to offset by automating facets of the production and quality control process.

Automation has been around for a long time, starting in automotive factories in which large robots have been used to help move around cars and parts, among other things. We believe there is still significant room for further automation in automotive and other manufacturing industries.

We have also been seeing more demand from consumer electronics makers that assemble tiny components of devices, such as smartphones, which continue to become increasingly smaller. Over the past five years, as automation solutions have become cheaper and more effective, more industries are starting to see value in deploying them. We see increased demand in consumer electronic makers, food and beverages, pharmaceuticals, medical devices, furniture manufacturers, and even toy production. And we expect that demand for automation will be persistent, growing at about a 10 percent compound annual growth rate for the next decade or so.[2]

Keyence, which is essentially unrivaled in bringing sensors to manufacturers, has been a beneficiary of this demand. In the semiconductor and smartphone industries, for instance, Keyence plays a key role in ensuring that components are assembled most efficiently and cost-effectively. Its clients include leaders across industries from aerospace to semiconductors.

Founded in 1974 and based in Japan, Keyence provides products that are very low cost to implement but provide a great service with a fast and obvious return on investment (ROI).

In addition to the ROI that Keyence provides to customers, it keeps its own costs down because of its asset-light fabless business model, which is not dependent on legacy equipment. Perhaps even more importantly, Keyence does not have to produce legacy solutions that are not popular or profitable.

In a sense, Keyence straddles the three buckets of businesses as it also benefits from its ability to set prices and offer its customers the benefits of scale. It is able to set prices because it creates solutions that didn't exist previously. Therefore, it makes the whole market. It has tight relationships with a large customer base with whom its sales team meets regularly. By getting on the factory floor, Keyence's team is able to watch the manufacturing process in action. Armed with a first-hand understanding of this process, it is able to better recommend, introduce, or create solutions to help customers meet their needs. Often Keyence is able to add new features to existing solutions, enabling its customers to get greater value out of the product in terms of returns, fast payback, efficiencies, and cost savings. Those cost savings—and the fact that Keyence solutions represent a small percentage of the overall costs of products being produced—make it less likely that customers will switch providers, meaning that even in difficult times, Keyence can pass on cost inflation and maintain margins.

Contributing to Keyence's attractive margins, the company outsources the more commoditized capital-intensive parts of the process, focusing on the high-value-added parts of its business. Concentrating on operational and not capital expenditures allows Keyence to sidestep one of the biggest challenges in the industrial space, which is that they are typically capital-intensive, highly cyclical, low-margin, low-return businesses.

When you put all of that together, you still have somewhat of a growth cyclical business, but with a much lower degree of cyclicality than would be typical in the broader industrials or even the industrial automation space.

### Cloud Software Enabling Cost-saving Productivity Gains

We have repeatedly seen how innovation can enable productivity gains that lower labor costs, often by allowing one person to do the work of what formerly took many; enable more efficiency; and drive productivity at scale. Cloud software, for instance, has proven to be a broad-based deflationary force that often enables millions of dollars in cost savings by replacing legacy technologies or even manual processes.[3] Like in the case of automation, the ability to see a clear ROI has made it easier for many IT leaders to justify these investments in the short term, even in more difficult, cost-cutting business environments, while they work to prove their value over the longer term.

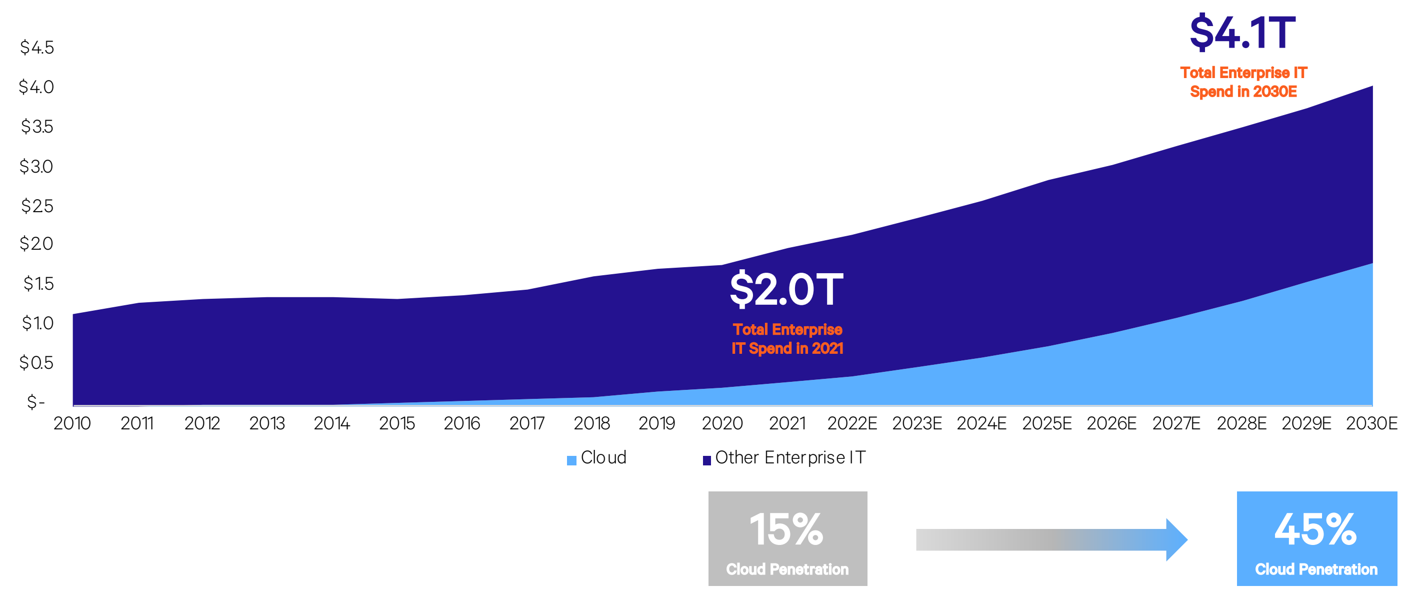
[2] https://www.morganstanley.com/ideas/technology-and-inflation-businessesps://www.globenewswire.com/en/news-release/2023/02/23/2613960/0/en/Industrial-Automation-Market-Exhibits-9-8-CAGR-to-Reach-USD-395-09-Billion-by-2029-Report-by-Fortune-Business-Insights.html
[3] FactSet and Sands Capital, Forrester Total Economic Impact Reports for ServiceNow, Datadog, and Atlassian.

## CLOUD COMPUTING IS TRANSFORMING THE ENTERPRISE

The rise and proliferation of cloud software has been one of the largest secular trends of the past decade, but it is still early.

Cloud Penetration of Total Enterprise IT Spending Expected to Reach 45% of a $4 Trillion Budget by the End of the Decade

Worldwide Enterprise IT Spending Growth Over Time ($ in Trillions)




Sources: Gartner, Piper Sandler, FactSet & Sands Capital research, as of August 2022, when cloud penetration was estimated at 15 percent.

The software businesses that we invest in are geared to help their customers lower costs. This is often achieved by switching to next-generation platforms, such as Snowflake, a cloud-based data analytics company that has become a favorite of business analysts and data scientists alike for its technologically differentiated approach to analyzing data in the cloud. We believe its approach has revolutionized how business analytics is conducted. Snowflake customers had often used multiple on-premises solutions with siloed data sets prior to adopting Snowflake. After switching, they often report leveraging Snowflake's platform to make data more rapidly available to customers, enabling more timely insights and usability of the data while ensuring greater operational efficiency at lower costs.[4]

Snowflake is just one example of the deflationary effects and evident ROI that we have seen select software companies deliver. Companies looking to cut costs can be well served by switching to next-generation software platforms. Of the 150 software companies that we track, Snowflake was among the fastest growers in 2022, accumulating strong free cash flows—meaning that the company is growing fast while also logging profits. Not every software business has or will experience this same result, but we think this is a useful illustration of the often mission-critical nature of software. In contrast to software businesses during the last recession, many of the software vendors we invest in today have a larger enterprise focus, are multiproduct platforms, and are benefiting from even stronger secular trends toward cloud computing, software-as-a-service deployment models, and digital transformation.

### The Cost Cutter (aka Scaler)

**Economies of scale provide larger companies with a competitive advantage over smaller ones because the larger the business, the lower its per-unit costs. Companies that can pass these lower costs on to their customers become even more attractive in times of inflation.**

Amazon Web Services (AWS) is a global leader in cloud infrastructure and provides organizations with on-demand access to compute, storage, and other services

[4] Forrester Research

through its cloud platform. Before AWS' creation of the infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) categories, companies were forced to buy hardware that they had to self-manage on premises. This was problematic, given that this hardware was extremely expensive. Finding expertise in managing it was difficult, and very few companies had a competitive advantage that was improved by becoming experts in building their own data centers. Worse yet, companies needed to accurately forecast demand for their businesses ahead of time to make sure they weren't over- or under-purchasing this expensive equipment. Purchasing too little or too much were both major problems.

However, the advent of the cloud changed all of that by shifting those upfront costs and the difficulty of building data centers to cloud providers, like AWS, and allowing companies to scale their usage of compute and storage resources up and down in real time to adjust to their own changing business trends. The current difficult macroeconomic environment has been a major headwind for AWS and its peers, as companies have seen their own businesses slow and have consequently slowed their spending on cloud resources. However, despite the current headwinds, we argue that it is in many ways a positive development for the major IaaS providers, as it has definitively proved the value and flexibility of using the public cloud.

Furthermore, companies like Uber, which in the past had been adamant about building its own infrastructure, have recently changed their tone, given the dynamics described above. Until recently, Uber had run nearly all its business on self-managed servers but just announced that it is going all in on the public cloud and will replace more than 100,000 of its own servers in the process to increase performance and efficiency while cutting costs. Uber is just one example but is not an isolated case, as the value of cloud infrastructure has been proved. In a recent survey of 80 large company chief information officers in the United States and Europe, Morgan Stanley found that because of the cloud's demonstrated flexibility during this more challenging economic environment, technology leaders are now expecting to put significantly more workloads in the cloud over time than they were previously.[6]

Over the long run, we expect AWS will be able to leverage its scale advantages to continually help its customers manage the highs and lows of inflation with new services and technologies. Its 2022 revenue rose 29 percent in constant currency terms to $80.1 billion, perhaps a testament to how indispensable AWS' critical services are to its customers. The company also added nearly $18 billion in net new revenue in the past year, which suggests confidence of customers that believe that AWS is essential to their operations.

Over the coming decades, we expect AWS will be a key player as enterprises shift toward shared infrastructure services. We anticipate robust top-line growth, scale-based expense leverage, and a mix shift toward higher-margin PaaS services to drive above-average revenue and earnings growth for the company over the next five years.

**Not All Innovation Happens in Tech**

While innovative technology companies offer tangible examples of how certain businesses with competitive advantage, automation, and scale can endure inflationary environments, some of the more traditional businesses, such as hard-surface flooring retailer Floor & Decor, can also sustain above-average earnings growth over long periods of time and insulate customers from the bottlenecks that inflation creates. We believe Floor & Decor, like AWS, should be able to use its substantial buying power to offer lower prices for customers. With nearly 200 stores in the United States—each with 75,000 square feet of space dedicated to hard-surface retailing, it rivals Home Depot and Lowe's in the category. However, it primarily competes with some 5,000 small mom-and-pop operators that have one or two local stores. Floor & Decor has seen some pullback in demand in the current environment but is steadily taking share because the business' scale, direct-sourcing model, which includes an exclusive supply relationship, and vertically integrated distribution infrastructure have streamlined freight costs and allowed the company to pass along any cost savings to its customers. Smaller retailers haven't been afforded these options and have struggled with supply issues, making them subject to wholesalers' pricing increases and have thus had a difficult time maintaining adequate levels of inventory over the past few years.

We believe that, over the next few quarters, we will see an even bigger divergence in terms of customer loyalty for this type of business as one bad experience can be enough to lose customers, especially for Pro customers who make up more than 40 percent of the business. Once a contractor goes into a local store and cannot complete a job because of limited product availability or uncompetitive prices, those smaller retailers may lose their business for life. As a result of these recent

[5] https://thestack.technology/uber-cloud-migration-oracle-cloud-google-cloud/
[6] Morgan Stanley Report: Cloud Optimization – Short-Term Pain for Long-Term Gains (April 2023)

pressures in its market, we believe Floor & Decor is going to end up in a much stronger competitive position, and we see similar developments with other portfolio companies across various sectors. We believe the combination of its value proposition, significant store growth opportunity, new-store economics, and favorable longer-term housing trends positions Floor & Decor to deliver above-average growth over the long term.

**Positioned for Future Strength**

Over the past several years, we have weathered massive disruptions bought on by geopolitics, a pandemic, and macroeconomic shifts. Yet none of these disruptions has been as powerful as the immutable secular trends that will ultimately support the companies that are looking to create the future.

To be sure, expectations about inflation and rising interest rates have fueled the volatility and valuation compression that have shaken financial markets. We are well aware of how unpredictable markets can be in the short term. Exogenous factors and sentiment can have an outsized and often unpredictable influence on stock price movements. At Sands Capital, we prefer to look past these phases of market panic and focus on the long term. We are business owners, not stock traders, and invest as such, evaluating a business' potential long-term growth trajectory.

With this long-term view, we have made very few changes to our portfolios to adjust for inflation or rising interest rates. For the most part, our view of the long-term earnings power of the franchises in which we invest is largely unchanged over the last year, even in cases where our near-term earnings estimates have come down. That's because many of our businesses are creating or benefiting from technological advances that enable better, faster, and less expensive access to commerce, financial services, healthcare, and are advancing the enterprise of the future. These trends will remain in place despite cyclical weakness.

We believe that the companies in which we invest—leaders in promising business spaces with strong fundamentals—are better positioned than many of their peers to continue investing for long-run growth despite weaker near-term prospects. As a result, we believe, in many cases, they will increase the size of their relative competitive advantage as they emerge from the current downturn.

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Unless otherwise noted, the companies identified represent a subset of current holdings in Sands Capital portfolios. This article is part of an ongoing series of articles published in the quarterly commentaries and features businesses and related companies that were selected to illustrate current underlying macroeconomic and sectoral trends. The series uses rotation whereby businesses featured are selected to highlight different trends across sectors and geographies.

As of March 31, 2023, ASML was held in Global Growth, Technology Innovators, and International Growth. Keyence was held in Global Growth, Global Leaders, International Growth, and Global Shariah. Taiwan Semiconductor was held in Emerging Markets Growth, Emerging Markets ex China, Technology Innovators, International Growth, and Global Shariah. Floor & Decor was held in Select Growth. Snowflake was held in Select Growth, Global Growth, Technology Innovators, and Global Shariah. Amazon Web Services, a division of Amazon, was held in Select Growth, Global Growth, Technology Innovators, and Global Shariah. Uber Technologies was held in Select Growth.

Home Depot and Lowe's were not held in any Sands Capital strategy and are referenced for illustrative purposes only.

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