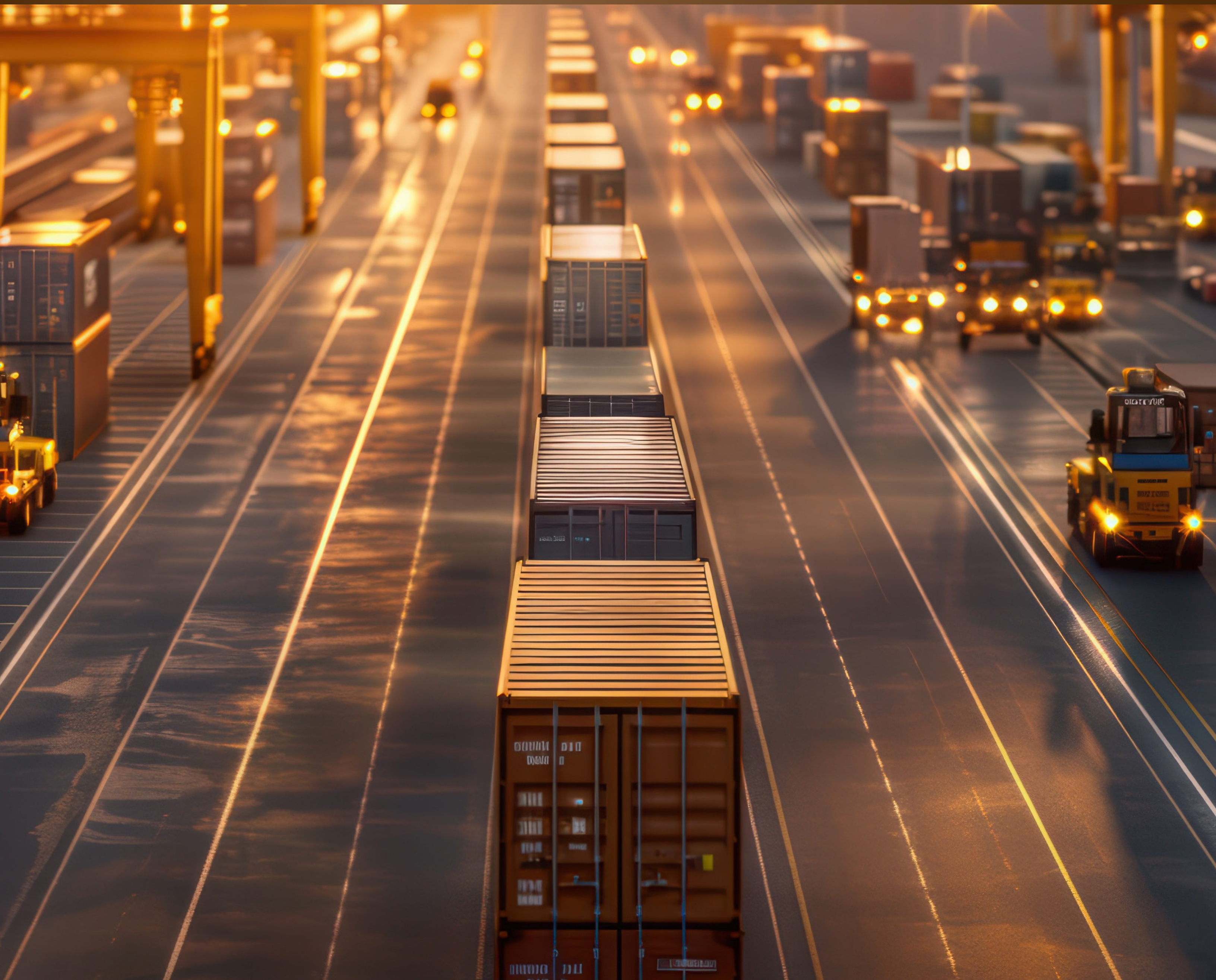
Increasing efficiency: Working Capital Index 2024

August 2024



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Executive summary

Working capital index touching on a record high

In 2023, S&P 1500 companies reported working capital levels close to a 10-year high, largely driven by excess inventory levels and longer receivable days across most sectors. This has led to approximately $707 billion of trapped liquidity in working capital across industries, up 40% from pre-pandemic levels.

Lower cash levels observed across multiple sectors

There has been a marginal reduction in cash levels from the previous year, with 64% of S&P 1500 companies reporting increased capital expenditure activities in 2023.

Increase in cash conversion cycle by 2.4 days

The cash conversion cycle (CCC) for S&P 1500 companies increased by 2.4 days in 2023, with 67% reporting longer days sales outstanding (DSO) and 76% observing an increase in days inventory outstanding (DIO).

Top movers in CCC

27.9 days
Semiconductor

8.1 days
Oil & Gas Upstream

7.3 days
Technology Software

7.3 days
Pharmaceuticals

Demand-supply dynamics continue to drive large working capital movements across sectors

The semiconductor and pharmaceutical industries witnessed a significant increase in inventory levels and reduced end user demand, resulting in surplus capacity and excess stock throughout the value chain. The oil & gas upstream sector saw an increase in DSO as the demand-supply gap narrowed on the back of increased U.S. oil production. The auto & auto parts sector reflects consistent improvement in days payable outstanding (DPO) over the past 12 years, potentially attributed to increased penetration of supply chain finance programs.

Supply chain management among market uncertainties in 2024

Although 2023 witnessed relative easing of supply chain disruptions, uncertainty is expected to resurface in 2024 driven by multiple factors including reshoring of supply chains, elections across 77 countries, high cost of COVID debt refinancing, sustainability pressures, and rise in AI investments.

7.2 Points
Rise in Working Capital Index

$707B
Trapped working capital

0.6 Points
Minor decline in Cash Index

Macroeconomic factors at the top of corporate priorities in 2024

- Supply chain disruptions
- Elevated capital costs
- Emphasis on sustainability
- Capex on AI-driven initiatives

Calculation methodology

There are three sets of data points analyzed in this report:

i The Working Capital Index tracks the average net working capital/sales values across the S&P 1500 and is calculated as follows:

$$\text{Average NWC} = \frac{\sum_{K=1}^{n} \text{Net Working Capital}_k / \text{Sales}_k}{n}$$

ii The Cash Index tracks the average cash/sales values across the S&P 1500 and is calculated as follows:

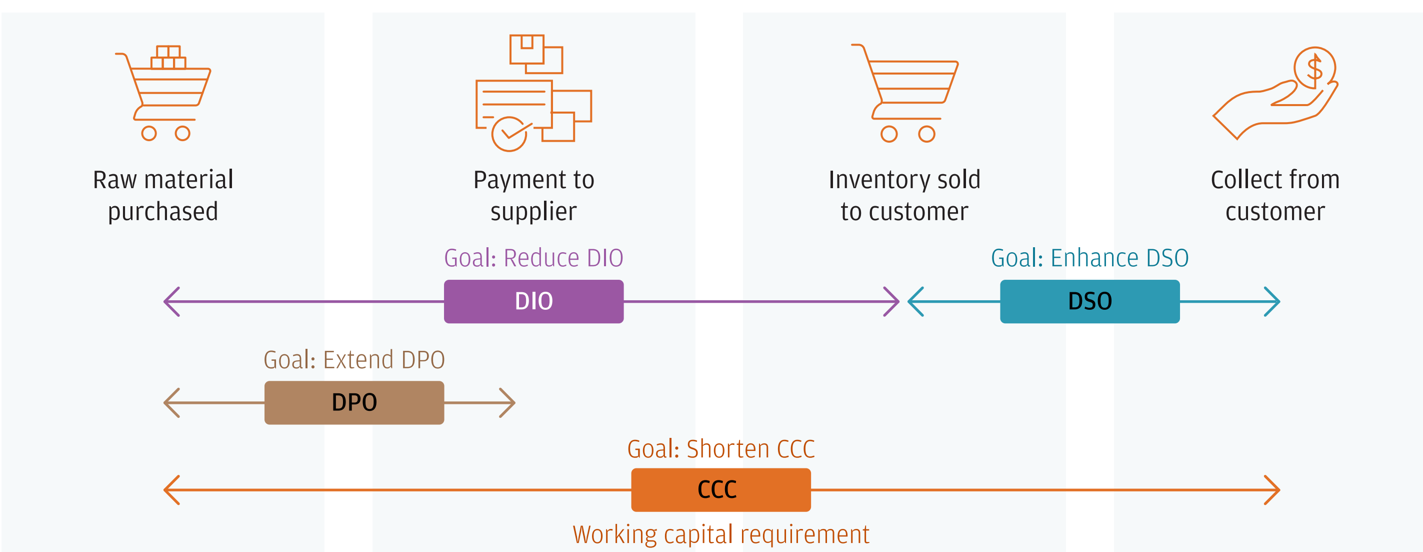
$$\text{Average Cash} = \frac{\sum_{K=1}^{n} \text{Cash}_k / \text{Sales}_k}{n}$$

where:

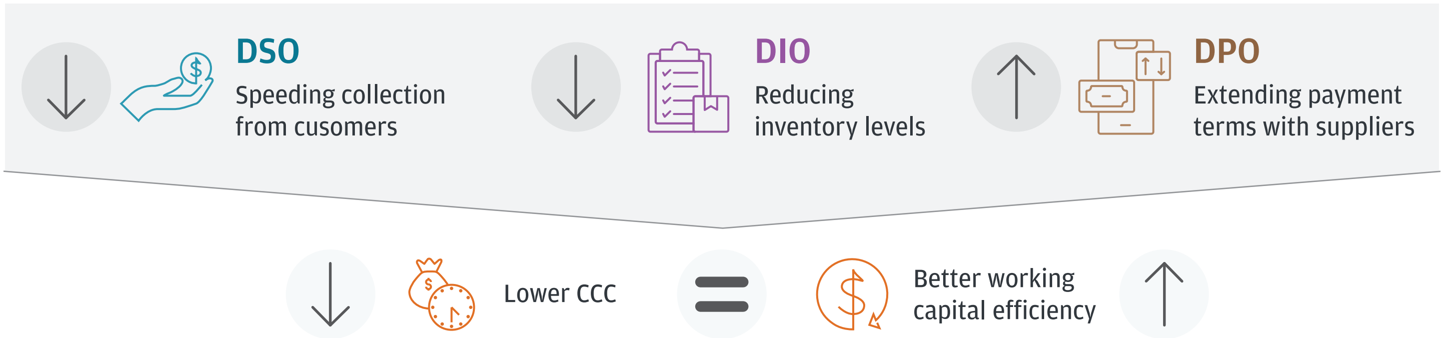
Net Working Capital = Trade Receivables + Inventory – Trade Payables; n = total number of companies

iii The cash conversion cycle (CCC) is the number of days it takes to convert inventory purchases into cash flows from sales. The CCC helps quantify the working capital efficiency of a company and is derived from three components:

- Days sales outstanding (DSO) or the number of days taken to collect cash from customers.
- Days inventory outstanding (DIO) or the number of days the company holds its inventory before selling it.
- Days payable outstanding (DPO) or the number of days from the time a company procures raw materials to payment of suppliers.



Companies can improve their working capital by effectively managing the individual components of their CCC. They can do so by reducing inventory levels (decreasing DIO), extending payment terms with suppliers (increasing DPO) and/or speeding up collections from customers (shortening DSO). As a general rule, the lower the CCC, the better the working capital efficiency.



Note:

To avoid the distortion of data, financial services and real estate firms in the S&P 1500 were excluded from the calculations due to their distinct business models and unique working capital metrics in comparison to other industries. Companies with high volatility in working capital and those with incomplete data were also removed, bringing the total number of companies used for this analysis to 964.

All numbered data have been gathered from Capital IQ for the purpose of calculations.

The trends extracted from our analysis were validated against insights from J.P. Morgan's research team.

02
Macro trends

Macroeconomic trends poised to shape supply chain dynamics

Having started with low and declining expectations for global growth and elevated concerns of a U.S. recession, as 2023 advanced, the U.S. economy proved more resilient than initially feared. The economy was supported by strong consumer demand, a steady jobs market and wage growth. Inflation also decelerated throughout the year, from 6.4%[1] at the start of 2023 to 3.4%[1] by the end, largely due to easing pressure on supply chains. While the economic backdrop proved resilient, the year also presented distinct challenges, including: Fed rates hitting the highest level in 23 years at 5.5%[2]; major wars impacting global trade; and a banking crisis that brought down financial institutions in the U.S. and Europe. Corporates were not completely unscathed by these disruptions and the impact was clearly visible on working capital, which jumped sharply in 2023.

Clouds of uncertainty remain in 2024, with the global economy facing a potential rocky road ahead. IMF forecasts global real GDP growth at 3.1%[3], below the average of 3.8%[3] from 2000-2019. Against this backdrop, companies will need to navigate risks and opportunities, including:

→ **Supply chain shifts:** A focus on supply chain resiliency is driving an increase in reshoring (U.S. sourcing), nearshoring (geographically close countries), and friend shoring (geopolitically aligned countries).

→ **Political uncertainties:** Ongoing U.S.-China trade tensions and elections across 77[4] countries, which together represent around 60%[5] of global GDP, are complicating the political backdrop.

→ **Credit headwinds:** Many companies face higher debt refinancing costs as low, fixed-rate debt raised during COVID times starts to mature.

→ **Sustainability:** Evolving regulations and stricter disclosure requirements are putting increased emphasis on corporate sustainability and ESG.

→ **AI investments:** Following the advent of Generative AI, companies are increasing investments in AI to boost efficiency and productivity.

As corporates adapt and respond to these challenges, working capital and liquidity optimization will take center stage to more effectively utilize internal sources of capital while the cost of external funding remains elevated. This should help companies to better manage disruptions, build resilient supply chains and invest in strategic business initiatives.

Political uncertainties & supply chain disruptions

Increasing focus on sustainability

Credit headwinds and high cost of capital

AI-based initiatives driving higher capex

Source: [1] White House December 2023 CPI Report. [2] Federal Reserve & NPR. [3] IMF- World Economic Outlook. [4] Evelyn Investment Outlook. [5] Reuters

Geopolitical uncertainty spurs 'balance of trade' shifts

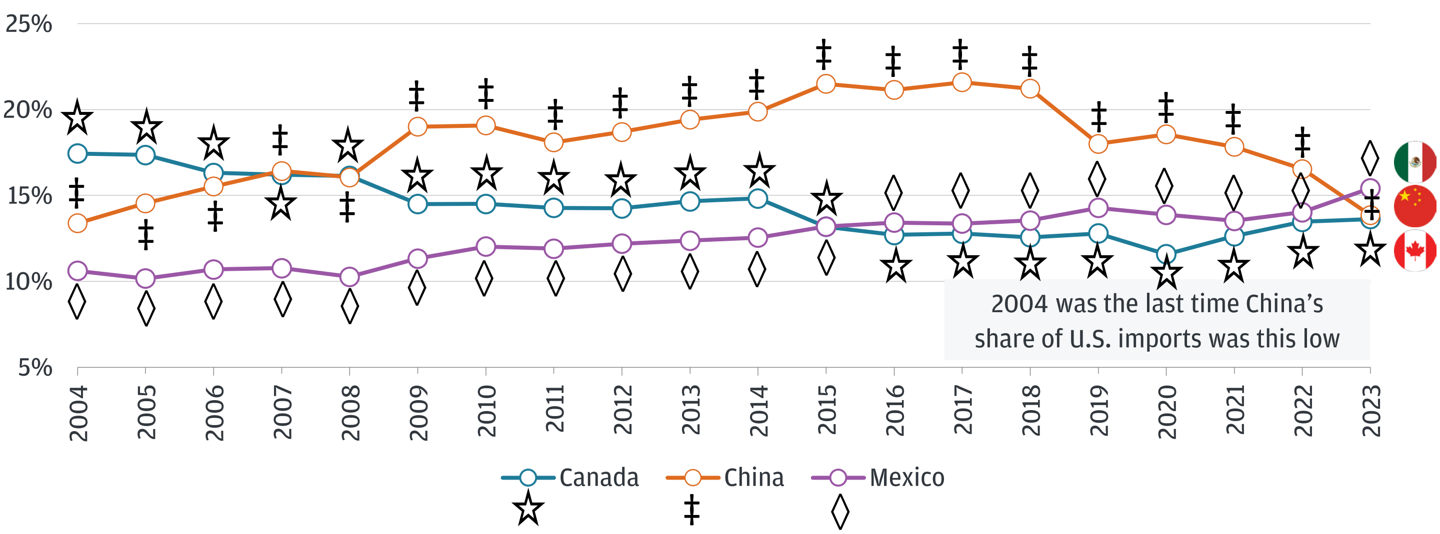
Over the past few years, geopolitics and a focus on supply chain resiliency drove an increase in reshoring (U.S. sourcing), nearshoring (geographically close countries) and friend shoring (geopolitically aligned countries). In 2023, Mexico became the United States' largest goods trade partner. Average tariffs on goods trade between China and the United States have increased between three- and sixfold since 2017. Vietnam's trade with China and the United States has been surging. European economies' energy imports shifted dramatically away from Russia. More shifts are likely, and businesses will continue with reconfiguring their supply chains.

2024 is also a big year for elections with 77 countries[4] voting, representing ~60% of the global GDP[5]. These include eight of the world's ten most populous countries – Bangladesh, Brazil, India, Indonesia, Mexico, Pakistan, Russia and the United States – and strategically important countries such as Taiwan and the U.K.

Despite numerous elections in 2024, significant changes in supply chain policy are unlikely regardless of the outcomes. Governments worldwide are steadfast in their industrial strategies, which entail subsidies and, when deemed necessary, implementing barriers to foreign competition. Whether driven by supporting green technology development, bolstering strategic resilience or protecting jobs, the consequence remains consistent: fragmentation of global supply chains, increased costs due to trade friction, duplication and redundancy in manufacturing and inventory. Treasurers need to be proactive in managing working capital amidst increased complexity with varying lead times, payment terms and mismatches in demand forecasting.

Mexico became the largest importer to USA highlighting rise in nearshoring

Share of total U.S. imports[6]



Transit cut nearly in half in two international canals

Red Sea attacks, drought disrupt global trade

Suez Canal,

42%

down from PEAK[7]

Panama Canal,

49%

down from PEAK[7]

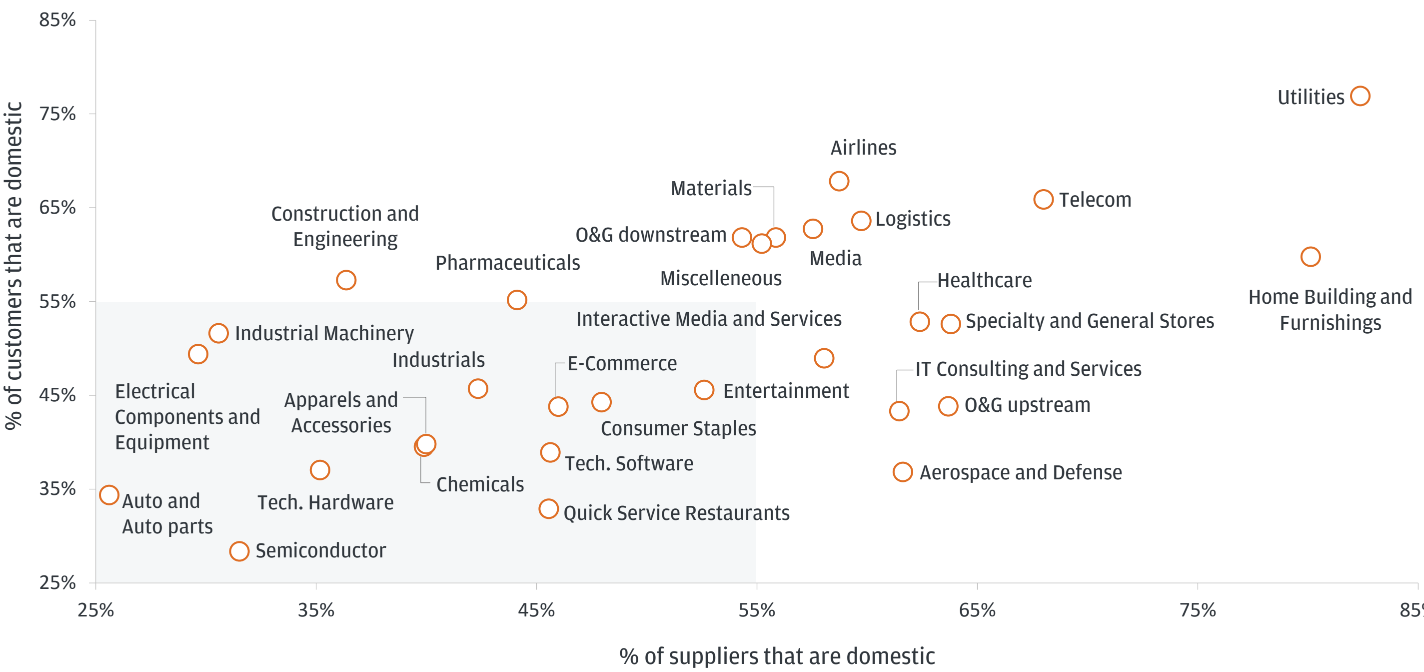
Source: [4]Evelyn Investment Outlook. [5]Reuters. [6]FactSet; % of total US imports. [7]Global Maritime Hub.

Supply chain disruptions have also been exacerbated by external factors including wars and climate

Yemen-based Houthi's conflict in the Red Sea and a drought in the Panama Canal region have held back global trade. Ships are avoiding the Suez and the Panama Canals, which on combined basis account for roughly 20% of maritime trade, and are seeking alternative routes. This has resulted in longer cargo travel distances, longer lead times and rising trade costs and insurance premiums. Increasingly longer routes and delays could also cause a shortage of shipping containers, prompting what's known as a "container crunch," which could lead to even more delays. Companies are also looking to shift from marine to air freight; however, this is often more expensive with limited capacity.

Industries with higher global dependence are far more vulnerable to supply chain disruptions

Global dependence across industries (domestic supplier & customer)



Source: FactSet

Industries today are globally interconnected, where an incident that occurs in one part of the world will have ripple effects on another. The dynamics between suppliers and customers play a pivotal role in shaping and understanding industry segments. Industries with a higher percentage of international suppliers and customers (such as those in the highlighted box in the chart above, bottom left) must be more cautious and vigilant in managing their supply chains, especially amid increased global uncertainties. These industries must adopt sound risk management strategies to mitigate for supply chain vulnerabilities. They must also ensure they have robust business continuity plans in place to improve resiliency. At the same time, the focus will also be on onshoring or nearshoring opportunities where possible.

Note:

Supplier and customer % for the 964 companies considered for CCC analysis is calculated based on the headquarter location of suppliers and customers, according to FactSet as of April 2024. Domestic refers to headquarters in U.S., Canada and Mexico and the rest all are tagged as international.

Refinancing costs are increasing, putting pressure on companies to prioritize liquidity

Weighted average years until maturity – S&P 1500[1]

10.3 Large companies

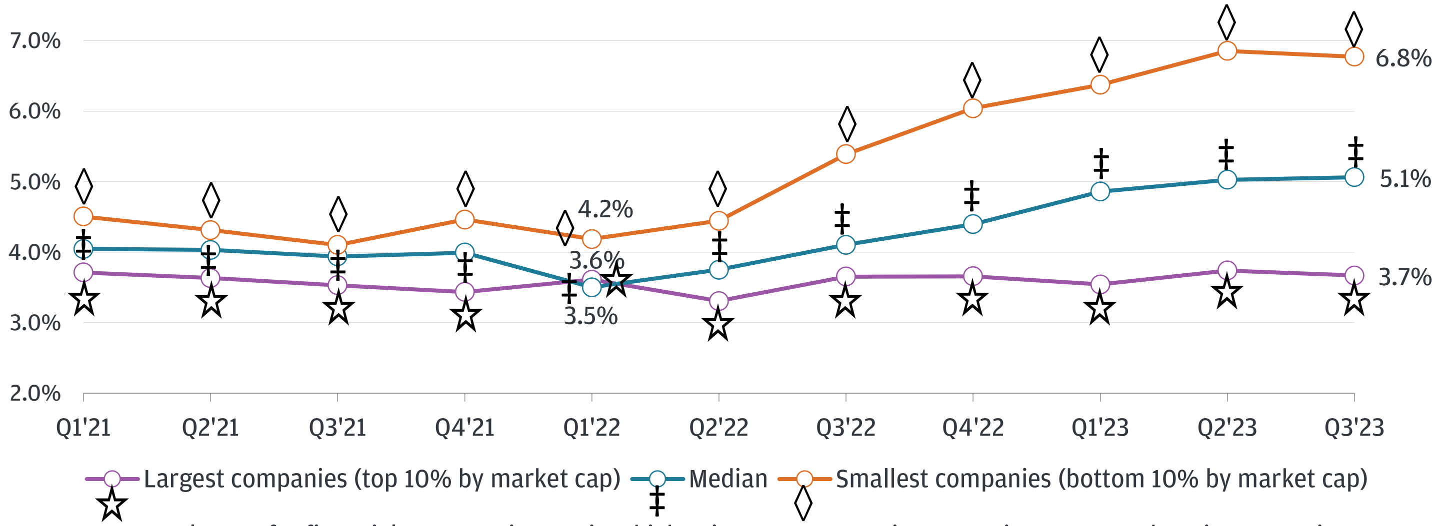
3.2 Small companies

4.6 Median

The global economy continues to grapple with the repercussions of the COVID-19 pandemic and the economic measures implemented during that period. Firms that locked in borrowing rates in 2020 and 2021 have enjoyed the equivalent of acquired immunity to Fed rate hikes. Moving into 2024, COVID-era issuances will mature in the near future, creating a need to refinance in a potentially much-higher-rate environment or find alternative sources of funding. This will put pressure on cash flows and capital planning.

The risk is even more pronounced for smaller companies, with an immediate impact on interest payments as they typically have lower ratings, shorter maturities and more organic floating rate exposure. As of Q3'23, the effective net interest rate for the smallest S&P 1500 companies was 6.8%. By contrast, it was 3.7% for the top 10% of companies, as larger corporates have higher weighted average years of maturity. The net effective interest rate is expected to increase further, which means for businesses that require significant investment, the need to prioritize liquidity could come at the expense of longer-term growth.

Effective net interest rate over time – S&P 1500[2]

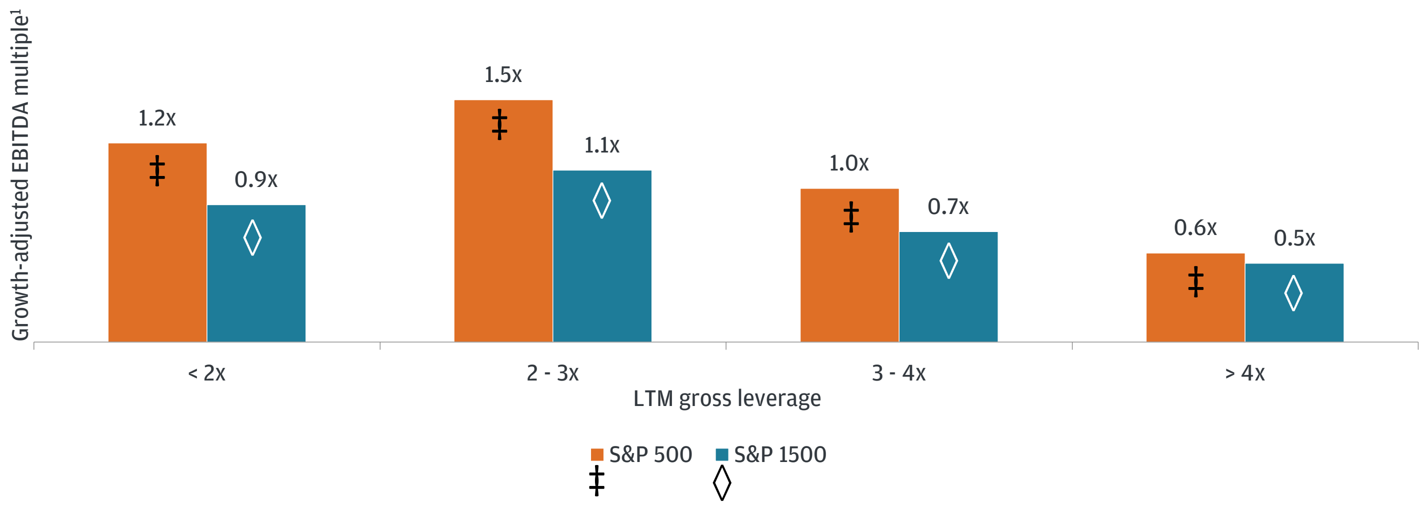


Corporates may also opt for financial conservatism, as in a higher-interest-rate environment, investors tend to give a premium to companies with lower leverage. This is because profitability is less impacted by interest costs while these companies also offer a better risk profile due to low volatility on earnings-per-share (EPS). This is evident from an EV/growth adjusted EBITDA valuation metric, which is at a 50-60% discount for companies that have last 12 months (LTM) gross leverage at more than 4x, as compared to corporates with leverage of 2-3x. This trend may drive companies to build cash in anticipation of paying off debt at maturity instead of refinancing.

Source: FactSet, market date as of Q3 2023; Capital IQ.

1. Represents weighted average maturity of bonds, loans and municipals; Largest and smallest companies defined as top and bottom decile of the S&P 1500 by market cap.
2. Reflects index constituents as of 12/31 for each respective year; excludes financials; calculated as quarterly interest expense net of quarterly income earned from interest annualized, divided by net debt, excludes companies with no debt or a negative net debt balance; Largest firms represents top decile of companies by market cap and smallest firms represent bottom decile of companies by market cap each year.

Growth-adjusted EBITDA Multiple vs. Leverage[1]



Source: FactSet, market date as of Q3 2023; Capital IQ.

1. Multiple defined as NTM EV / EBITDA multiple divided by two-year forward EBITDA CAGR; Excludes real estate, financials, and utilities.

Sustainability returns as a key priority for corporates

The year 2024 marks a turning point for corporate sustainability. Where sustainability was once an optional focus, driven primarily by compliance, it is now rapidly evolving into an indispensable pillar of financial performance, risk management and long-term strategic planning.

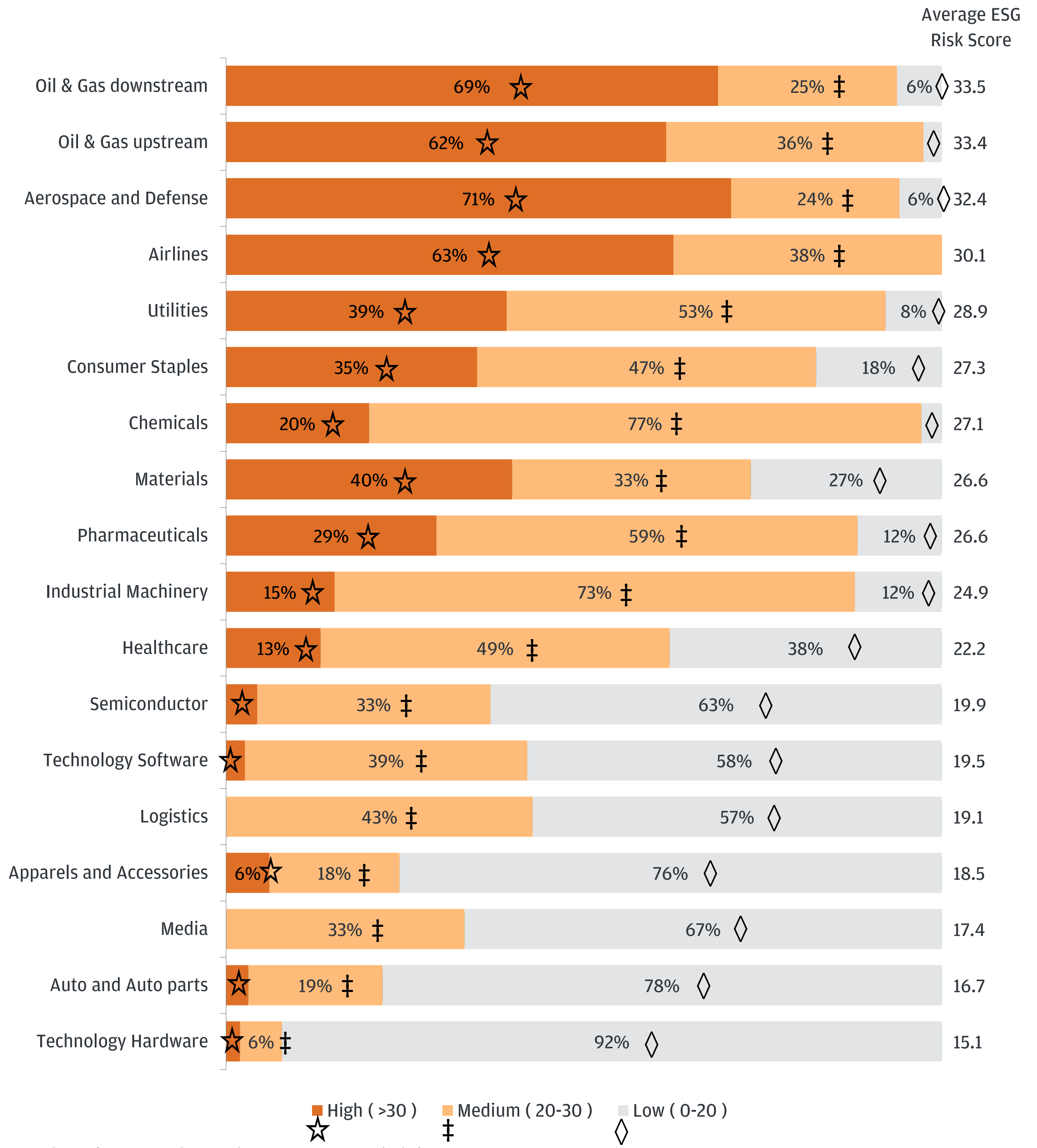
This shift is heavily influenced by the evolving regulatory landscape such as the EU's Corporate Sustainability Reporting Directive (CSRD) and potential SEC climate disclosure rules. Companies must become increasingly diligent in addressing potential ESG-related liabilities associated with their operations.

Regulations focused on indirect emissions force companies to assess their entire value chains. To meet these standards, every link along the chain must adapt. Sourcing of ethical materials, adherence to fair labor practices and investment in environmentally-sound operations become non-negotiable, even for smaller private companies who supply to larger corporations subject to these rules.

This transformation will reshape the way companies utilize working capital. Short-term financial metrics may be eclipsed by investments in supply chain resilience, transparent technologies and sustainable vendor development. Building supply networks that align with a company's ESG commitments becomes integral to long-term stability.

Certain industries such as oil & gas (downstream and upstream), aerospace and defense, and airlines, which are exposed to higher ESG risks, will have to prioritize investments towards sustainability initiatives. Companies will have to invest to proactively adapt, integrate and fund transparent sustainability practices, not only to navigate the regulatory environment but also to discover new opportunities for both resilience and value creation.

Average ESG risk score across industries

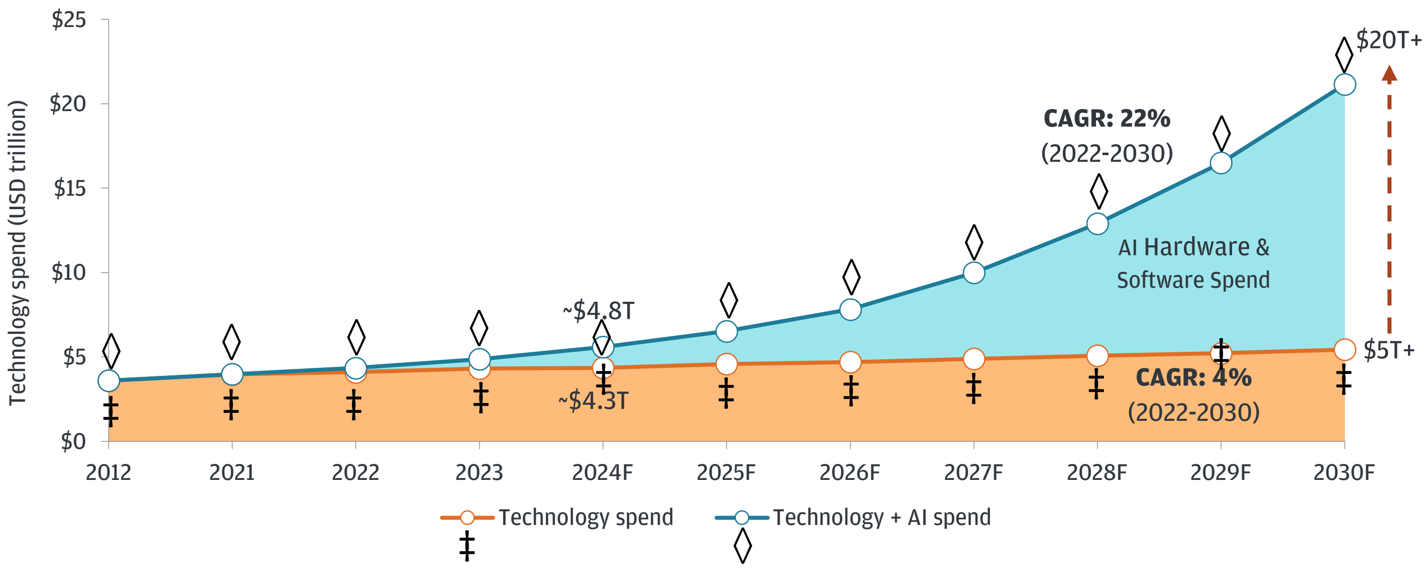


Source: The Conference Board, 2023, Thomson Reuters, Sustainalytics.

AI is disrupting multiple sectors, as capital expenditure increases

Anticipation is mounting around the potential of Artificial Intelligence (AI) for businesses and its impact on innovation, productivity and revenue streams. Growing AI investment is expected to exert a substantial influence on the economy in the upcoming years. In 2023, generative AI emerged as the primary disruptor in the technological landscape, prompting extensive investments across various sectors aimed at enhancing operational efficiency and productivity. Industry leaders have already intensified their AI investments, culminating in an anticipated total technology and AI expenditure of approximately $20 trillion by 2030, growing at a compound annual growth rate (CAGR) of 22% from 2023 levels. However, this investment comes at a substantial cost, particularly in the current macroeconomic climate when interest rates are higher. While external financing may remain a major source of funding, optimizing working capital can unlock crucial funds to finance these AI ambitions. This internally generated capital represents a cheaper source of financing than traditional debt or equity.

Annual technology spend[1]



> *"Accelerated computing and generative AI have hit the tipping point, data center spend is set to go from $1 trillion to $2 trillion in just five years."* [2]

Jensen Huang
Founder and Chief Executive Officer
Nvidia

Source:

[1] ARK Invest: Productivity Gains Could Propel The AI Market To $15 Trillion By 2030, Technology spend: Consensus tech spend, Technology + AI spend: Consensus tech + AI spend

[2] Nvidia data center revenues up 409%, AI earnings beat Wall Street expectations

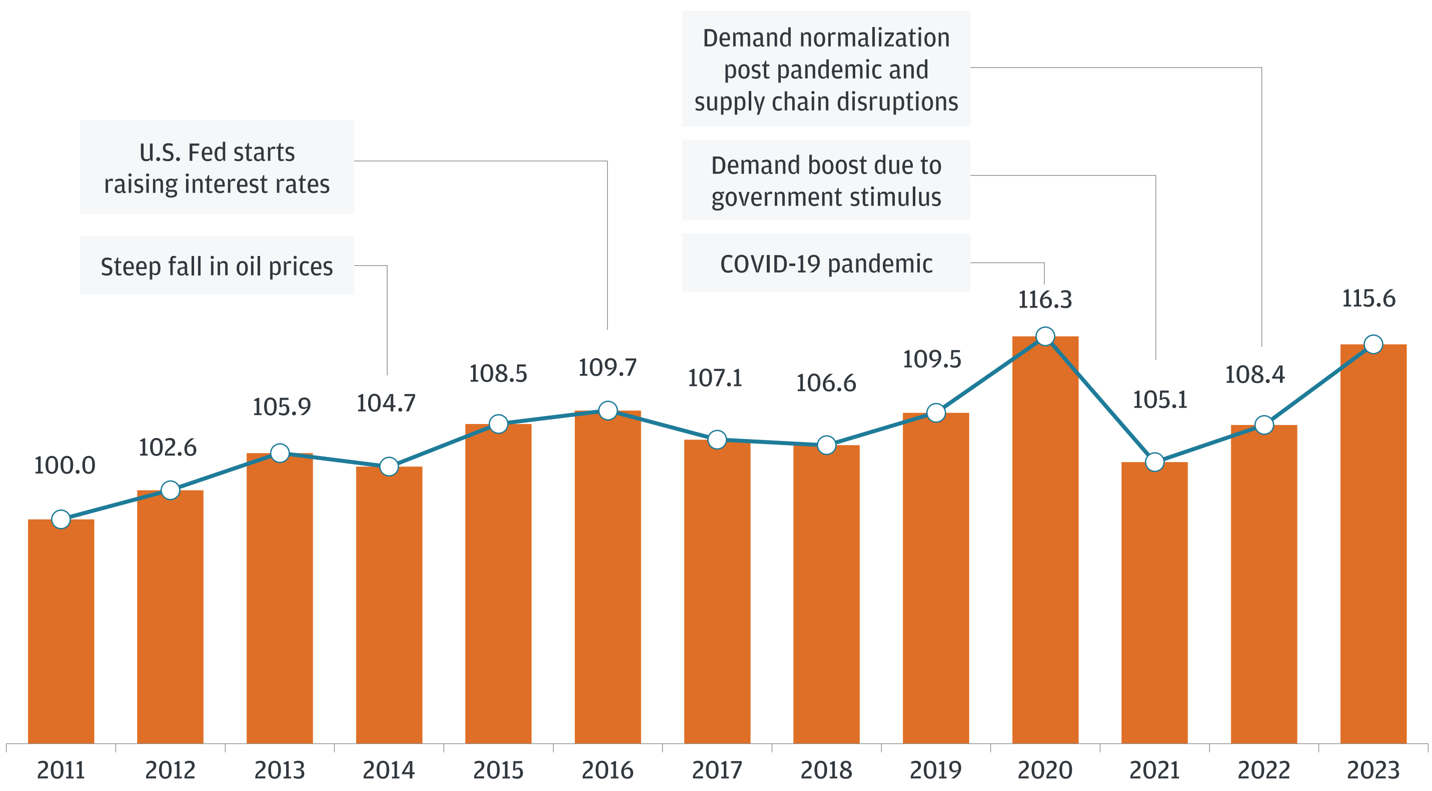
03
Cash and working capital index

Working capital index rallies upwards

The J.P. Morgan Working Capital Index reported a rebound in 2022, reversing the decline seen in 2021. In 2023, working capital surged by 7.3 points, nearing the peak levels of 2020. This increase has been largely driven by longer inventory and receivables cycles in certain industries.

Supply chain disruptions that eased in 2023 have started resurfacing in 2024. Geopolitical tensions, along with events in the Red Sea and the Panama drought, will extend lead times and create volatility. These disruptions, coupled with slower demand growth expectation in 2024, could drive companies to hold larger inventory buffers, negatively impacting working capital.

Working Capital Index, 2011-2023



Note: All years have been indexed to 2011.
Source: Capital IQ

In the current higher interest rate environment, the increased carrying cost of funds tied up in working capital underscores the urgency for treasurers and CFOs to adopt a proactive stance. Collaboration with internal and external stakeholders, including procurement, business units, operations and financial institutions, will be essential in optimizing working capital management across the balance sheet.

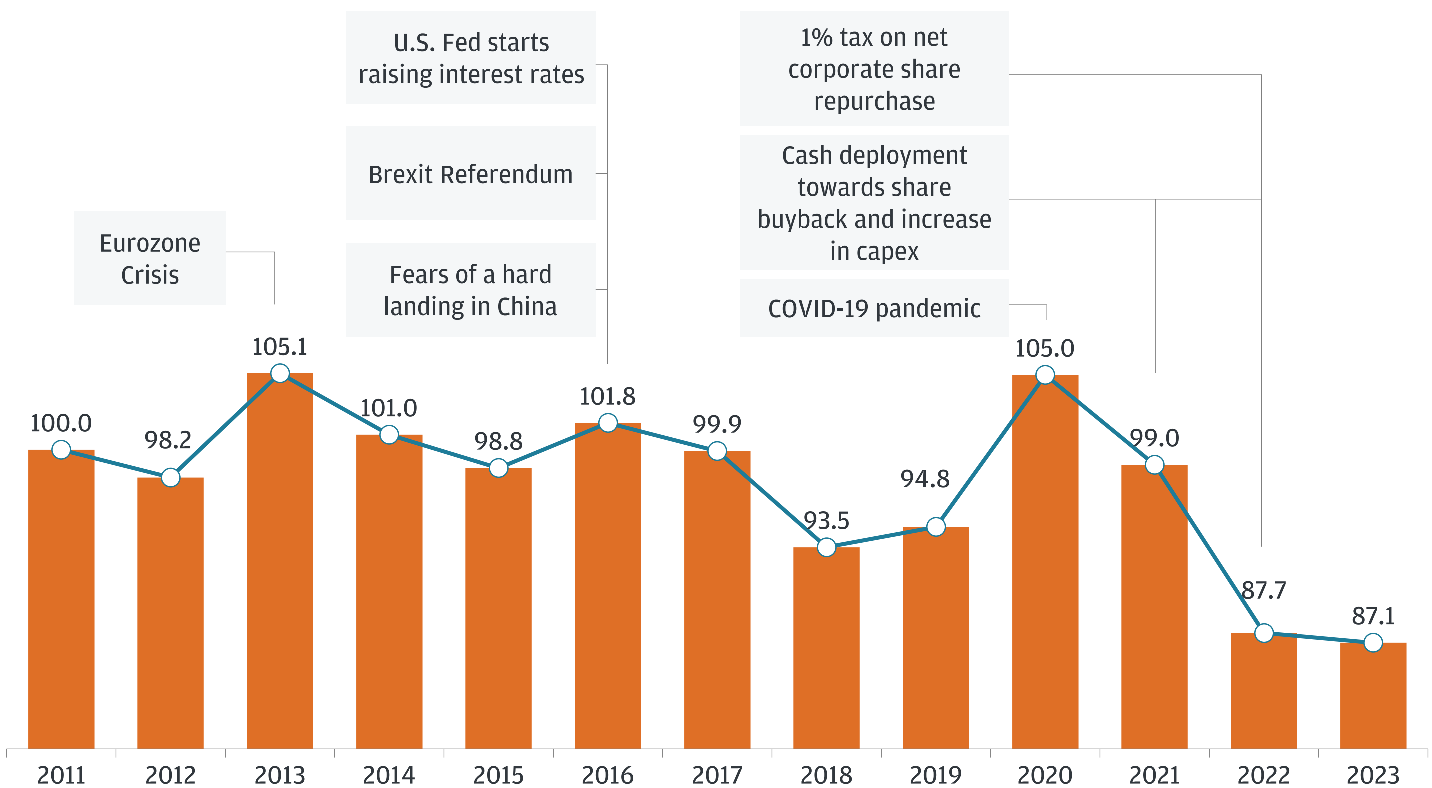
Cash index falls to a record low

In 2023, cash levels remained low, in line with 2022 figures, as many companies continued to invest in capital expenditure.

As many as 64% of companies increased capital expenditure, with software, utilities, and energy sectors experiencing the highest growth, driven by investments in AI technologies and renewables. The largest hyperscale cloud companies collectively invested around $140 billion in capital expenditure. The surge was also driven by investments towards building supply chain resiliency and government incentivized domestic manufacturing.

Lingering economic concerns, including higher interest rates, inflation and geopolitical tensions, continue to shape corporate cash strategies. Capital allocation plans should be approached sensibly, and cash should be treated as a shared asset across the firm. Treasurers also need centralized visibility and control on enterprise liquidity to ensure timely access and optimal use.

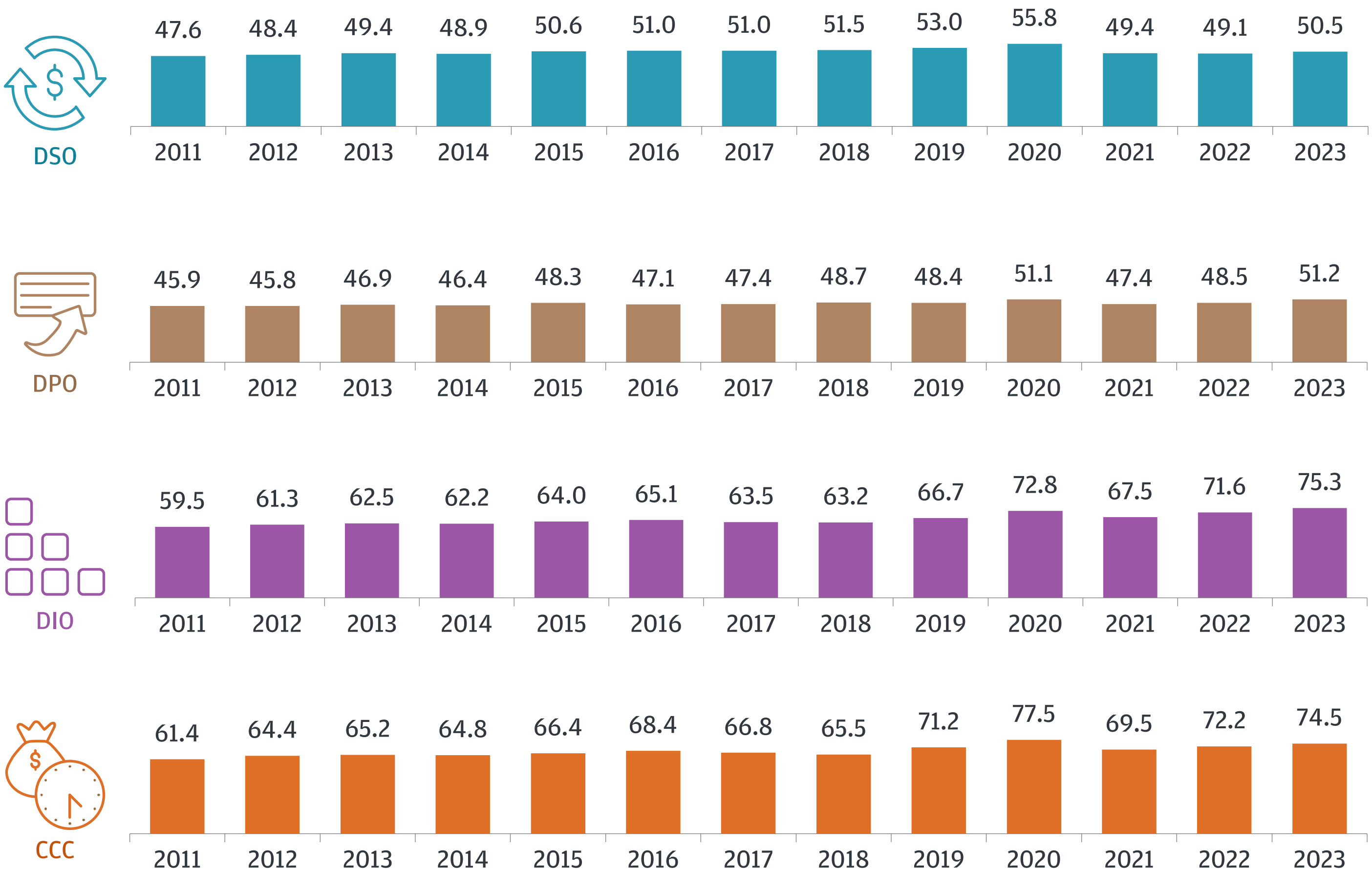
Cash index 2011-2023



Note: All years have been indexed to 2011.
Source: Capital IQ

Cash conversion cycle metrics

Elevated inventory and receivables lead to higher CCC as supply chain challenges eased across sectors



Source: Capital IQ

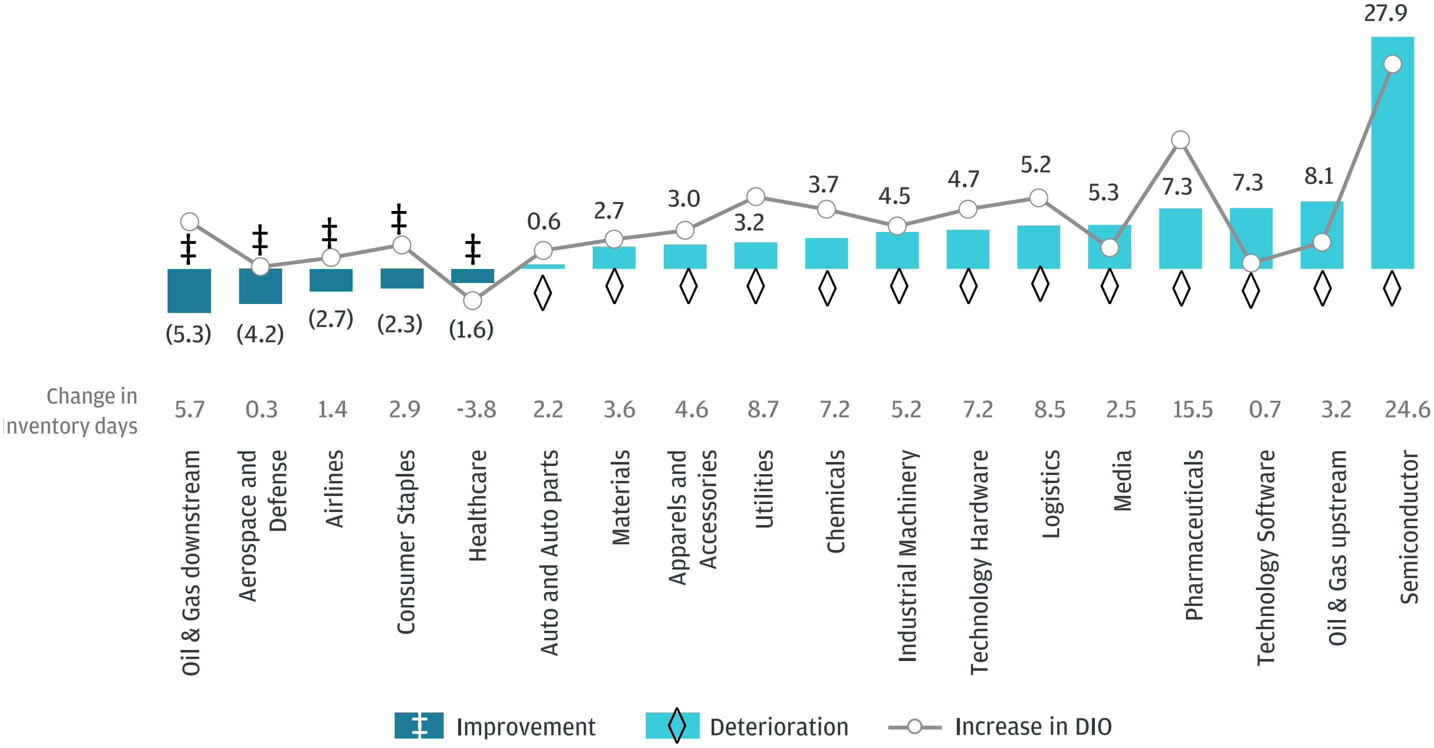
In 2023, the CCC for S&P 1500 companies deteriorated by 2.3 days, consistent with the broader working capital index. This increase was driven by a rise in both DSO and DIO, only partially offset by a lengthening of DPO.

DSO and DPO increased by 1.4 days and 2.7 days respectively, reflecting decreased supply chain disruptions that dominated 2021 and 2022. During the pandemic-related shortages, DSO and DPO were abnormally low as companies prioritized securing critical supplies (such as pharmaceuticals, oil & gas, and semiconductors), leading to faster customer payments. With improved supply chain conditions in 2023, DSO and DPO began to normalize.

DIO increased by approximately 3.7 days in 2023, as corporates continued with just-in-case inventory management versus just-in-time, and preferred diversification over cost. A normalization of demand was also notable in sectors such as pharmaceuticals and semiconductors that had faced massive shortages and pent-up demand in recent years.

Sector **insights**

Changes in cash conversion cycle by sector (days) 2023 vs 2022

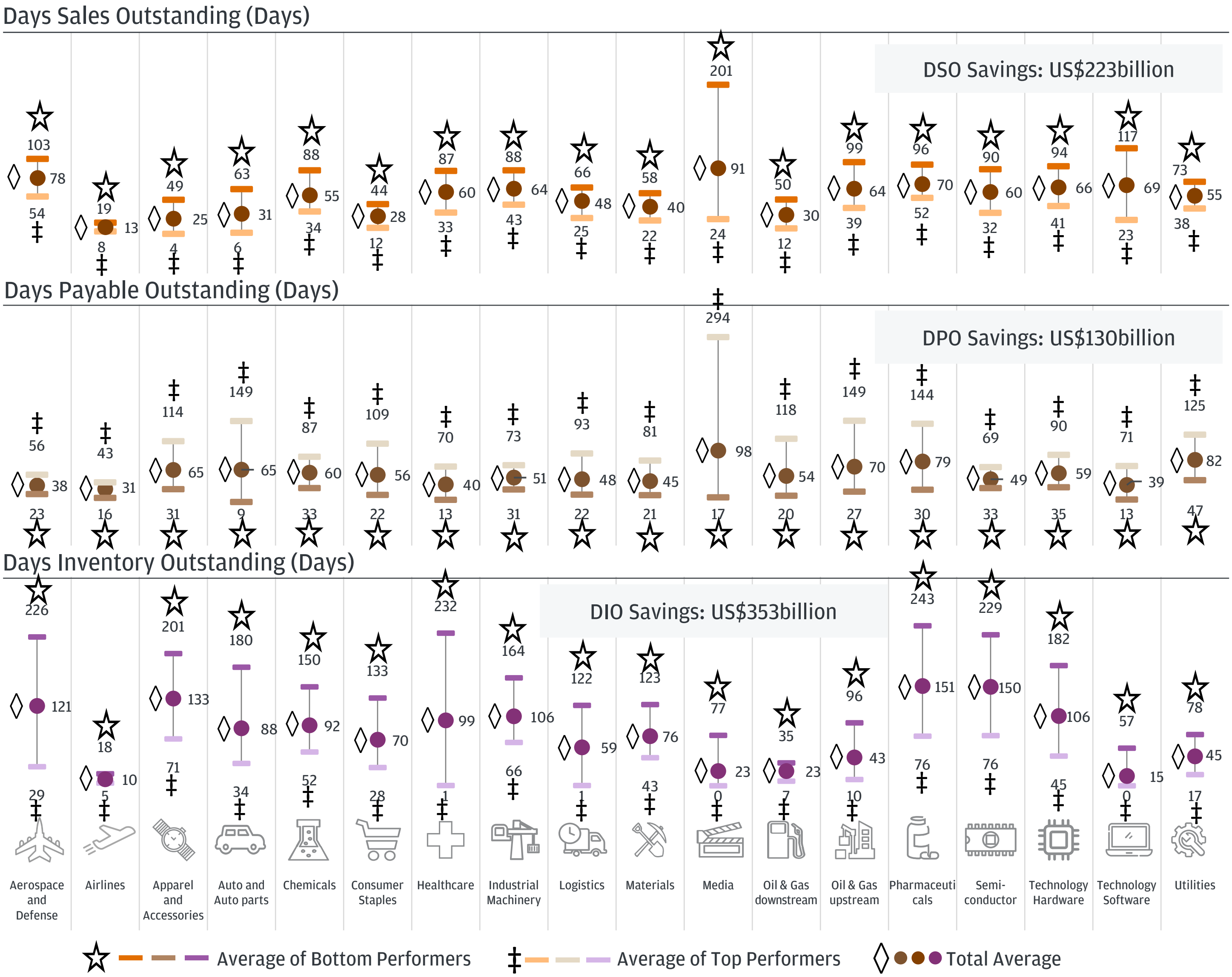


Source: Capital IQ

Across 18 analyzed industries, 13 experienced an increase in CCC days. This trend primarily arises from higher inventory levels across various sectors, driven by supply chain improvements and the normalization of demand in certain previously high-demand sectors. Those sectors with the largest increase in CCC include semiconductors, technlogy software, pharmaceuticals and oil & gas upstream. The semiconductor and pharmaceutical industries saw significant CCC extensions, averaging increases of 27.9 days and 7.3 days respectively. Contributing factors include surplus capacity, excess inventory throughout the value chain and the reduction in end-user demand. Additionally, the increase in CCC was influenced by the normalization of DSO across sectors that enjoyed faster collections due to higher demand for their products.

04
Working capital opporunity

Working capital industry benchmarking



Source: Capital IQ

We observe a wide variance in the CCC between top performers and bottom performers across industries. Assuming every organization improved its working capital and moved into the next performance quartile[1] in their respective industries across the DSO, DPO, and DIO metrics, an estimated $707 billion in working capital can potentially be released as free cash flow, up from $633 billion in 2022. Across three components of working capital, DIO presents the most potential for optimization with $353 billion, followed by $223 billion from DSO and $130 billion from DPO.

[1] For every working capital parameter, the companies within each industry are split into four performance quartiles (with the first quartile representing the performance of the top 25% of companies within the industry and the fourth quartile corresponding to the bottom 25%). The free cash flow release calculation assumes that a company moves from its existing performance quartile to the next best performance quartile and top quartile companies remain at their current levels.

05
Outlook analysis

The global economy bounced back in 2023 defying negative market sentiment, but the outlook for corporates in 2024 is still in flux. A higher interest rate environment, lingering inflation, supply chain disruptions intensified by geopolitical tensions, an evolving ESG regulatory landscape and a focus on AI investments will all have a significant impact on corporates across sectors.

To identify the key priorities for different industries, we have analyzed four metrics:

1. Leverage refers to Net Debt to EBITDA as of 2023.
2. Revenue growth as the percentage change in 2024 revenue estimates over 2023 levels.
3. Supply chain risk analyzes dependence on international suppliers and is calculated based on their headquarter location.
4. ESG risk score refers to exposure to material industry-specific ESG risk.

Based on the analysis we have classified the industries into 4 tiers:

- → Tier 1- Industries with high debt levels and low revenue growth
- → Tier 2- Industries with high debt levels and high revenue growth
- → Tier 3- Industries with low debt levels and low revenue growth
- → Tier 4- Industries with low debt levels and high revenue growth

TIER 1 companies are vulnerable, with highly leveraged balance sheets and low revenue growth expectations for 2024. They will likely focus on minimizing reliance on external funding due to higher debt costs, while also focusing on top line growth by optimizing their core business operations. High existing leverage might also limit access to external financing. For industries such as pharmaceuticals and auto & auto parts, increased supply chain risk also means optimizing and planning for supply chain disruptions.

Treasurers can play a significant role in navigating these challenges by focusing on internal resource optimization, including working capital and liquidity management, with an added focus on inventory management. This can help release trapped cash, providing companies with additional liquidity and any excess cash can be strategically utilized to deleverage, reducing the burden of high leverage on cash flows. This may involve paying down debt, refinancing high-cost debt with lower-cost alternatives or exploring other deleveraging strategies.

TIER 2 companies are performing relatively well, with higher expected revenue growth. However, they have highly levered balance sheets and are bracing for the impact of higher interest costs. The focus for these companies will be to utilize the excess cash flow generated to deleverage and invest in growth. For industries with higher ESG risk such as airlines and oil & gas downstream, driving their focus towards lowering their ESG risk will be key, especially as ESG is a growing priority for stakeholders including lenders.

TIER 3 & TIER 4 companies have healthier balance sheets and can prioritize strategic investments, which will be a delicate balance between focusing on growth and investment in new technology while also safeguarding for possible supply chain and ESG risk. Companies in industries such as semiconductor and technology hardware are focused on supply chain resiliency, given the complex international supply chains in these industries.

Outlook analysis across industries

	Industry	Leverage	Revenue growth	Supply chain risk	ESG risk
Tier 1	Aerospace and Defense	‡	■	⌂	▲
	Auto and Auto parts	‡	■	☼	▶
	Entertainment	‡	■	⌂	◀
	Logistics	‡	■	⌂	▶
	Pharmaceuticals	‡	■	☼	◀
	Quick Service Restaurants	‡	■	⌂	◀
	Utilities	‡	■	⌂	◀
Tier 2	Airlines	‡	◊	⌂	▲
	Apparels and Accessories	‡	◊	☼	▶
	Chemicals	‡	◊	☼	◀
	Consumer Staples	‡	◊	⌂	◀
	Media	‡	◊	⌂	▶
	Oil & Gas downstream	‡	◊	⌂	▲
	Specialty and General Stores	‡	◊	⌂	▶
	Telecom	‡	◊	⌂	◀
Tier 3	E-commerce	☆	■	⌂	◀
	Healthcare	☆	■	⌂	◀
	Industrial Machinery	☆	■	☼	◀
	Interactive Media and Services	☆	■	⌂	◀
	Oil & Gas upstream	☆	■	⌂	▲
	Technology Software	☆	■	⌂	▶
Tier 4	Construction and Engineering	☆	◊	⌂	◀
	Electrical Components and Equipment	☆	◊	☼	◀
	Home Building & Furnishings	☆	◊	⌂	▶
	Industrials	☆	◊	⌂	◀
	IT Consulting and Services	☆	◊	⌂	▶
	Materials	☆	◊	⌂	◀
	Semiconductor	☆	◊	☼	▶
	Technology Hardware	☆	◊	☼	▶

Leverage - Net debt to EBITDA levels: ☆ <2 ; ‡ >=2

Expected revenue growth: ◊ >=5% ; ■ <5%

Supply chain risk - International HQ supplier: ⌂ <50% ; ☼ >=50%

ESG Risk - Sustainalytics' ESG risk ratings: ▶ 0-20 ; ◀ 20-30 ; ▲ >30

Note:

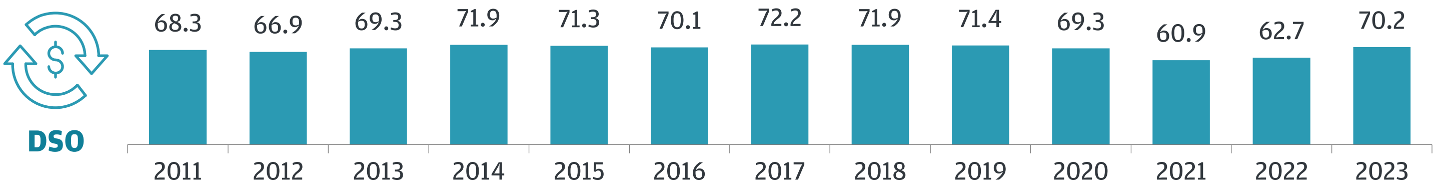
Leverage is Net Debt / EBITDA for FYE 2023, Revenue growth is change in revenue estimates for next 12 months, International reliance is calculated based on the headquarter location of suppliers considering HQ locations outside of U.S., Canada, and Mexico, according to FactSet as of April 2024. ESG risk score is taken from Sustainalytics as of April 2024.

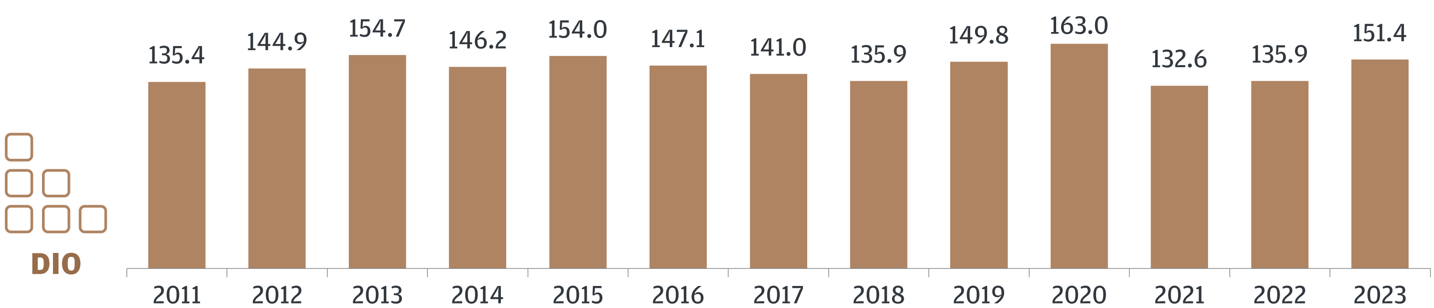
Source: Capital IQ, FactSet, Sustainalytics

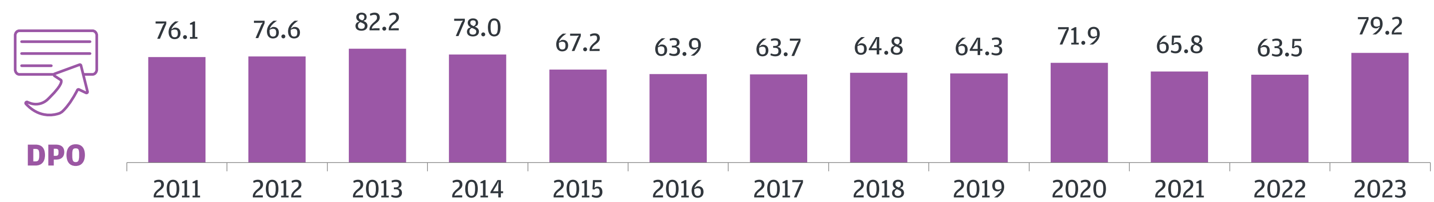
06

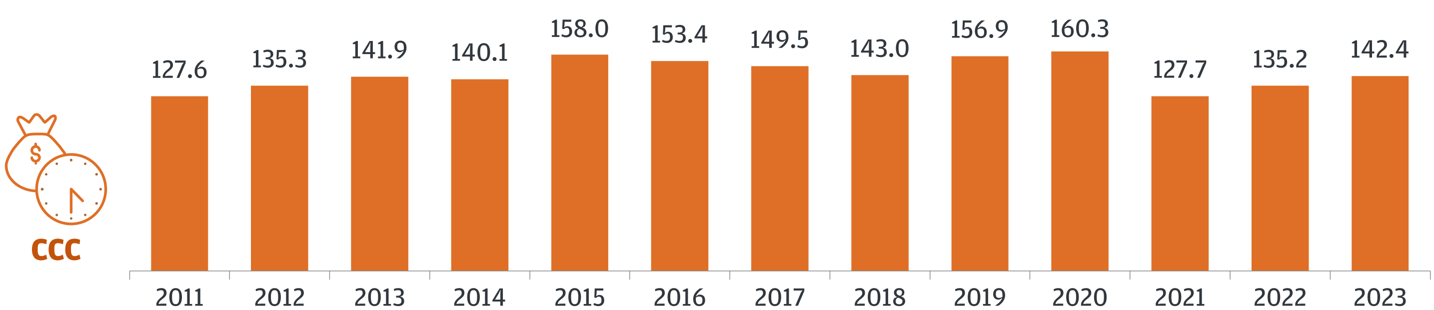
Industry deep dive

Healthcare industry analysis: Pharmaceuticals









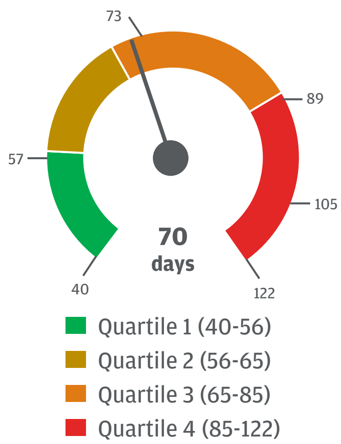
7% Forecasted revenue growth

3.1 Leverage

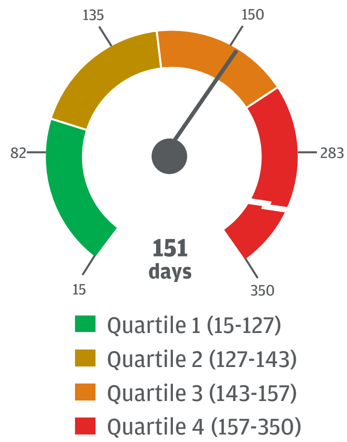
50% International suppliers

26.6 ESG risk

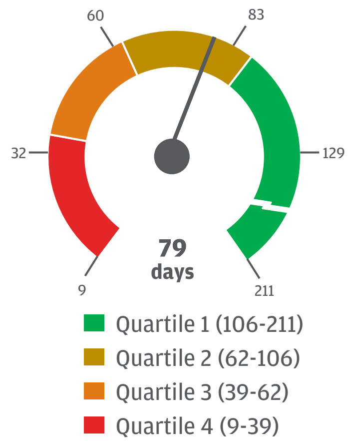
Days Sales Outstanding



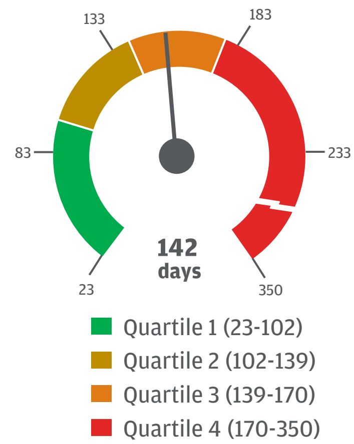
Days Inventory Outstanding



Days Payable Outstanding



Cash Conversion Cycle



Source: Capital IQ, Factset, Sustainalytics

Note: Leverage is Net Debt / EBITDA for FYE 2023, Revenue growth is change in revenue estimates for next 12 months, International suppliers is calculated based on the headquarter location of suppliers, according to Factset as of April 2024. ESG risk score is taken from Sustainalytics.

Key highlights

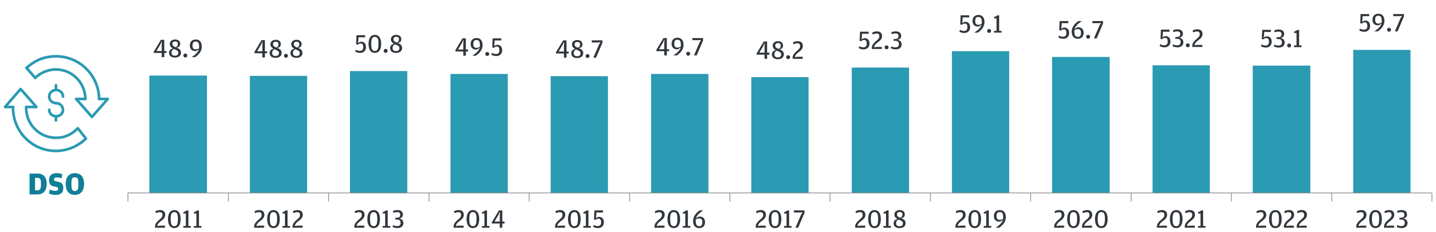
→ In 2023, the pharmaceutical industry witnessed a notable increase of approximately 7.3 days in its CCC. This uptick was primarily driven by a 15.5-day surge in DIO and a 7.5-day rise in DSO, partially offset by a 15.7-day increase in DPO.

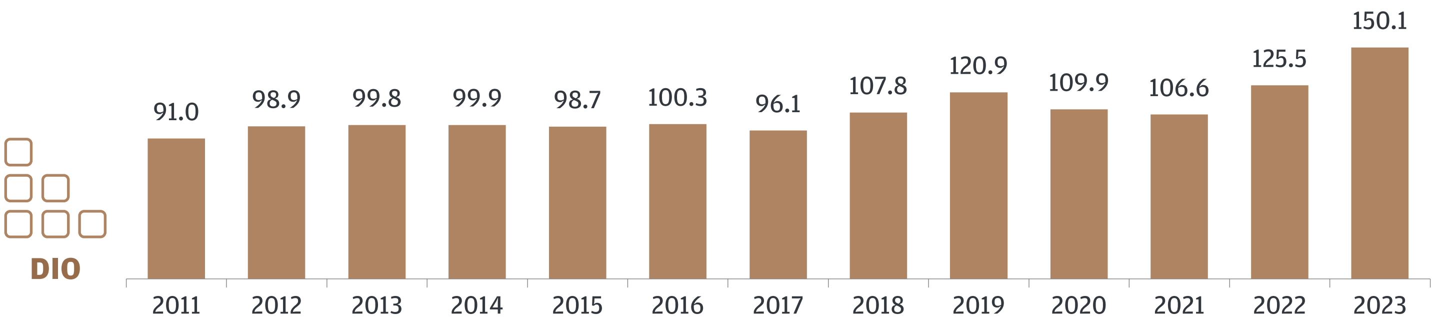
→ This significant increase in DIO is attributable to several factors. There was a reduction in demand for COVID-related drugs in 2023, resulting in high inventory levels and softer sales. Companies also intentionally carried excess inventory buffers to prevent against drug shortages experienced in recent years. A 50% increase in new drug approvals in 2023 further contributed to higher DIO as companies stockpiled inventory prior to commercial launches.

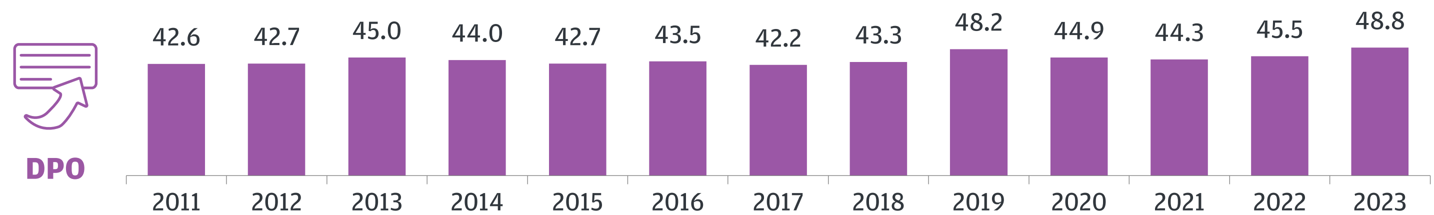
→ Similarly, the DSO increase is largely due to the normalization of demand for COVID-19 drugs. DSO levels in 2022 were unusually low due to high demand, and 2023 reflects a return to historical averages. Additionally, changes in drug pricing dynamics and product mix could also be contributing to the DSO increase.

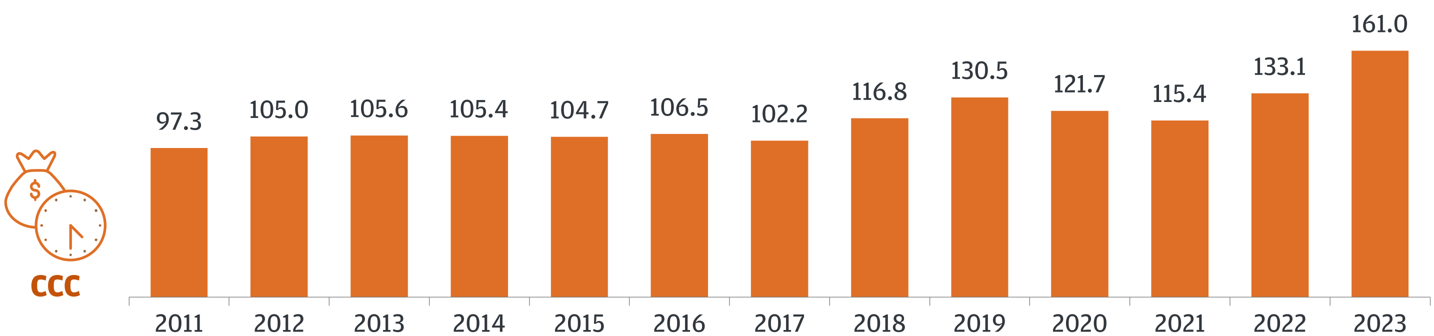
→ Ongoing efforts by the U.S. government to onshore pharmaceutical supply chains and mandate the stockpiling of critical drugs could further impact working capital requirements for corporates in the future. Treasurers should focus on taking proactive measures to mitigate the impact of these changes and requirements.

Technology, media and telecom industry analysis: Semiconductor







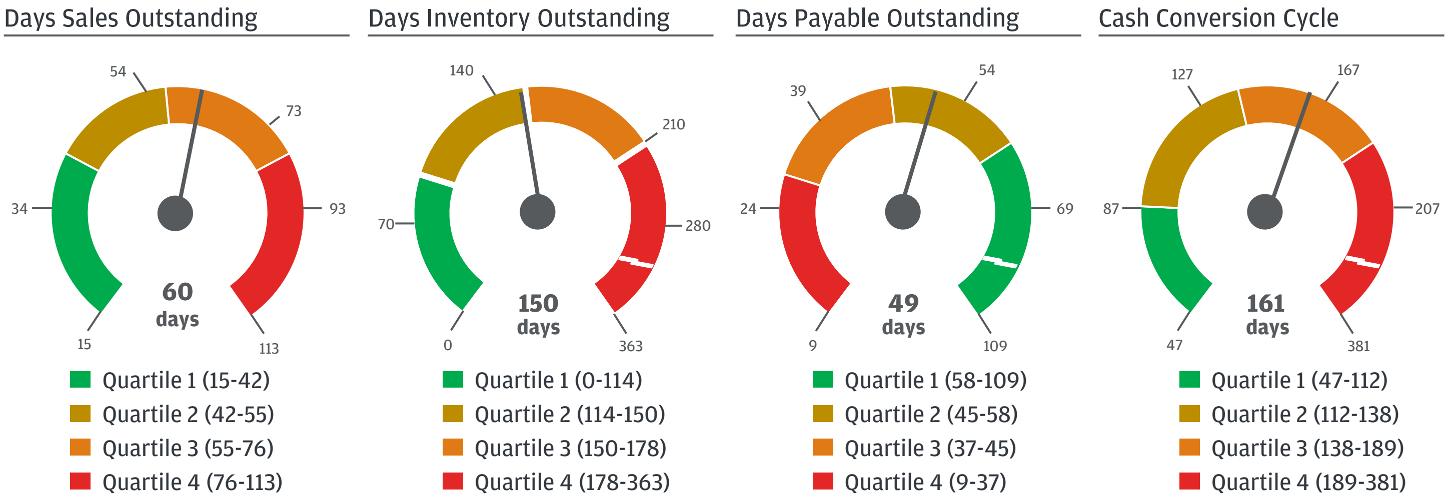


3% Forecasted revenue growth

(0.4) Leverage

66% International suppliers

19.9 ESG risk



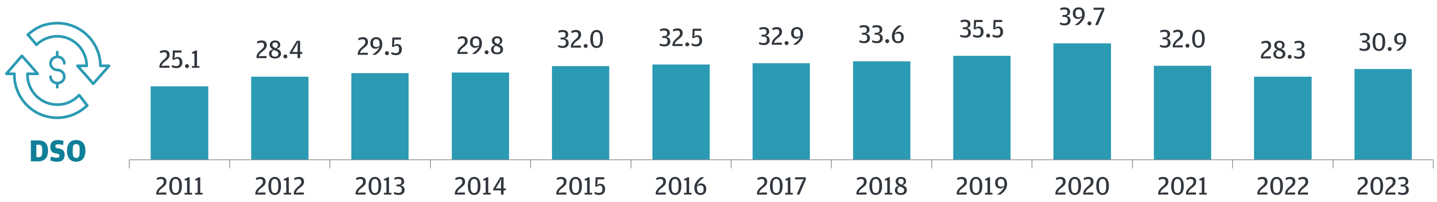
Source: Capital IQ, Factset, Sustainalytics

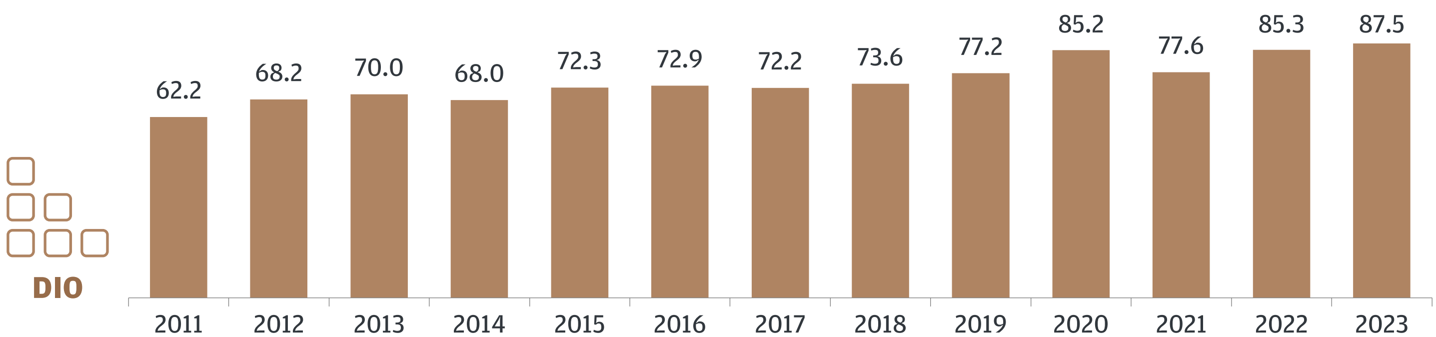
Note: Leverage is Net Debt / EBITDA for FYE 2023, Revenue growth is change in revenue estimates for next 12 months, International suppliers is calculated based on the headquarter location of suppliers, according to Factset as of April 2024. ESG risk score is taken from Sustainalytics.

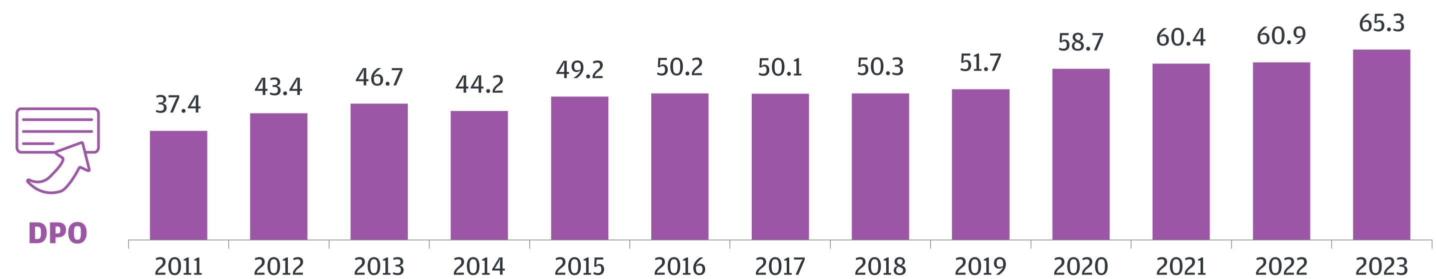
Key highlights

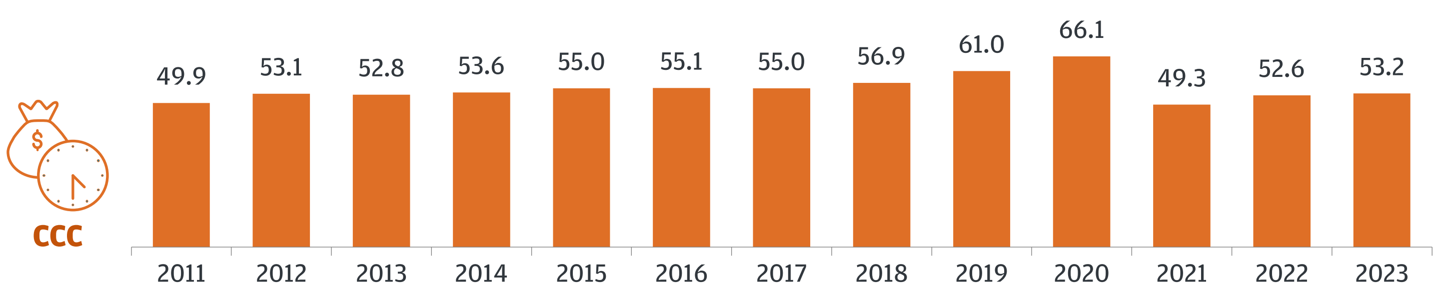
- The semiconductor industry witnessed a notable 28-day extension in its CCC during 2023. This increase was predominantly driven by a 24.6-day surge in DIO and a 6.6-day rise in DSO, partially offset by a 3.3-day increment in DPO.
- Post-pandemic, many industries faced severe chip shortages affecting production of a wide variety of products including automobiles and consumer electronics. In response, end-user industries over-ordered semiconductors to build ample inventory buffers and avoid disruptions.
- However, as supply chains stabilized and demand slowed down, companies saw a sharp decline in new semiconductor orders, with end-user industries shifting their focus to selling existing inventory. Consequently, the semiconductor industry now grapples with inflated inventory levels, reflected in a 24.6-day DIO increase in 2023.
- While the sector has likely passed the most difficult stage, normalization of inventory levels may take several quarters to materialize.

Diversified industrials industry analysis: Auto and auto parts









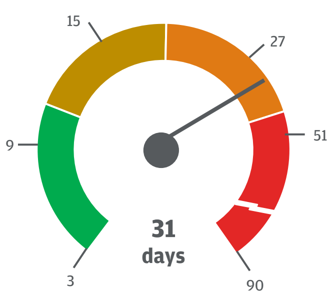
5% Forecasted revenue growth

3.7 Leverage

66% International suppliers

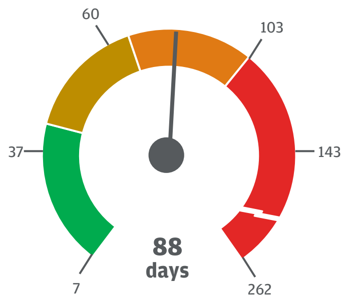
16.7 ESG risk

Days Sales Outstanding



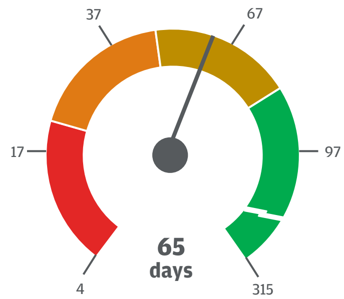
- Quartile 1 (3-10)
- Quartile 2 (10-21)
- Quartile 3 (21-48)
- Quartile 4 (48-90)

Days Inventory Outstanding



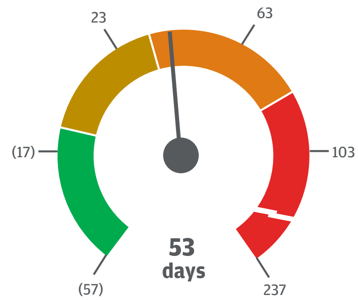
- Quartile 1 (7-42)
- Quartile 2 (42-62)
- Quartile 3 (62-103)
- Quartile 4 (103-262)

Days Payable Outstanding



- Quartile 1 (71-315)
- Quartile 2 (50-71)
- Quartile 3 (19-50)
- Quartile 4 (4-19)

Cash Conversion Cycle



- Quartile 1 ((57)-30)
- Quartile 2 (30-43)
- Quartile 3 (43-70)
- Quartile 4 (70-237)

Source: Capital IQ, Factset, Sustainalytics

Note: Leverage is Net Debt / EBITDA for FYE 2023, Revenue growth is change in revenue estimates for next 12 months, International suppliers is calculated based on the headquarter location of suppliers, according to Factset as of April 2024. ESG risk score is taken from Sustainalytics.

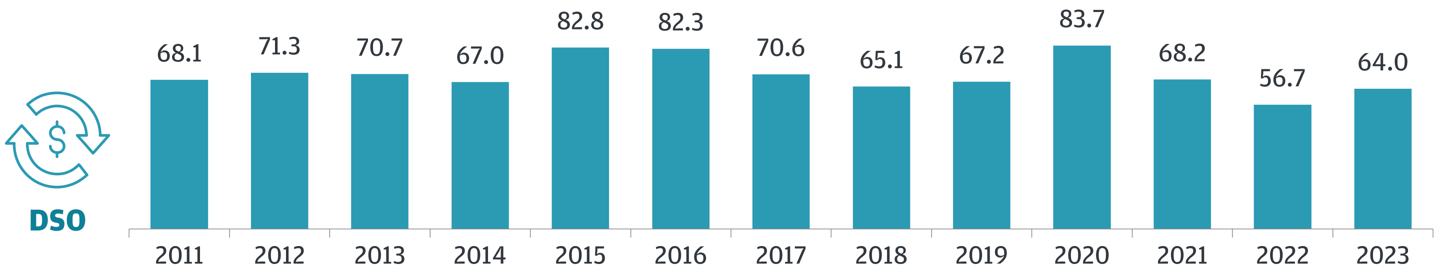
Key highlights

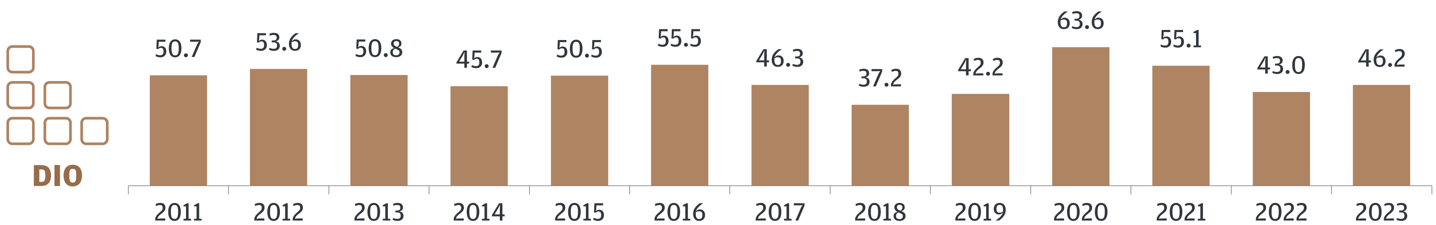
→ The auto and auto parts industry saw slight increase in its CCC by 0.6 days. Despite the high interest rates, the auto sector experienced modest growth in sales in 2023. However, inventory build up had been faster than the sales growth, resulting in DIO increase of 2.2 days from 85.3 in 2022 to 87.5 in 2023. Slower than expected EV sales also contributed to increased DIO.

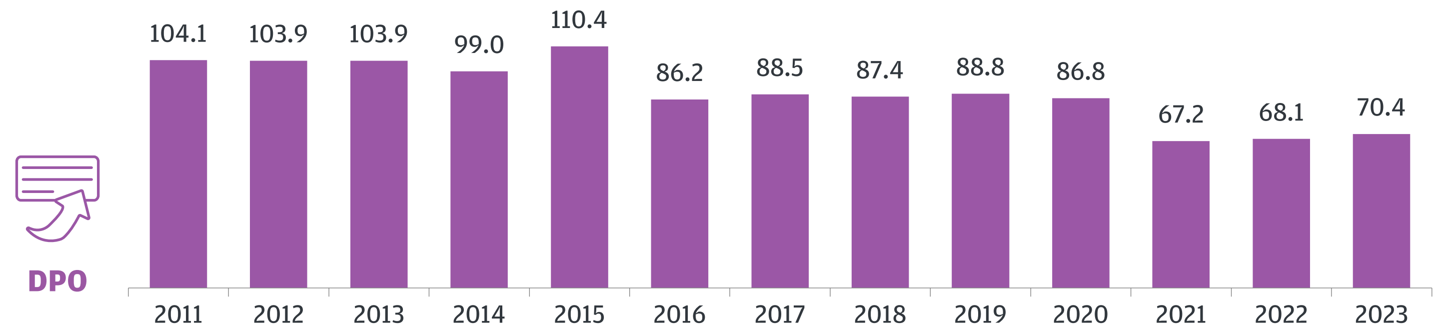
→ We also observe increase in DSO in 2023 by 2.6 days to 30.9 days, bringing it closer to pre-COVID levels. This can be attributed to the easing of semiconductor chip shortages which had previously resulted in order backlogs and better collection terms in 2022.

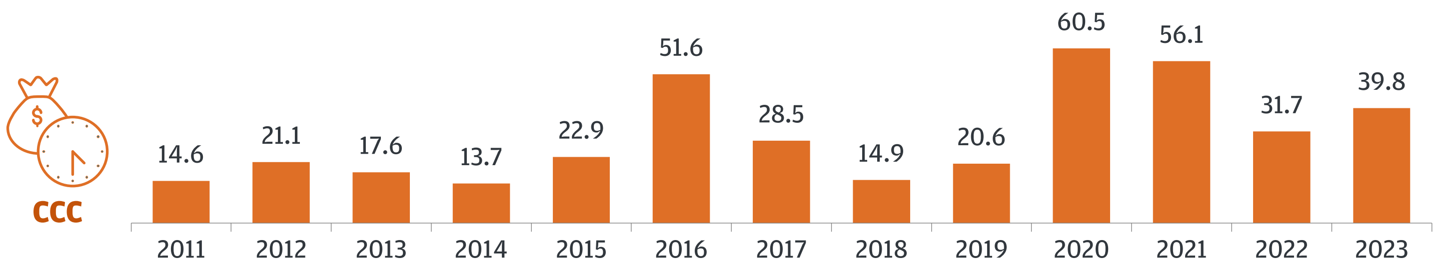
→ The rise in DSO and DIO, however, has been largely compensated by longer payment terms, which increased by 4.4 days in 2023 from 60.9 days in 2022 to 65.3 days in 2023. This industry has seen a consistent increase in DPO levels over the past 12 years and various auto parts retailers in U.S. report high supply chain financing as percentage of accounts payables. This could be attributed to improved penetration and higher take-up of supply chain finance programs in the sector.

Energy industry analysis: Oil & gas upstream









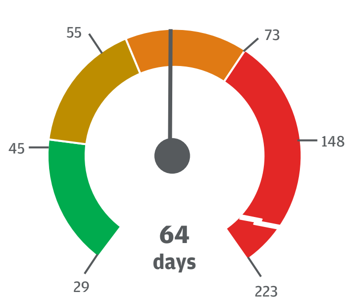
10%
Forecasted revenue growth

1.2
Leverage

31%
International suppliers

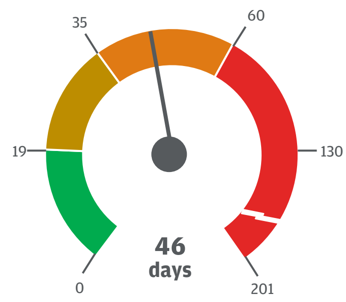
33.4
ESG risk

Days Sales Outstanding



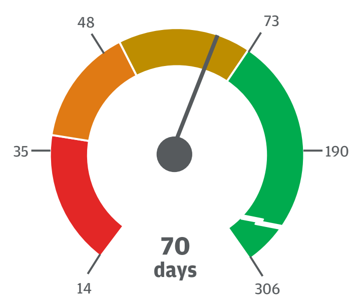
- Quartile 1 (29-45)
- Quartile 2 (45-60)
- Quartile 3 (60-73)
- Quartile 4 (73-223)

Days Inventory Outstanding



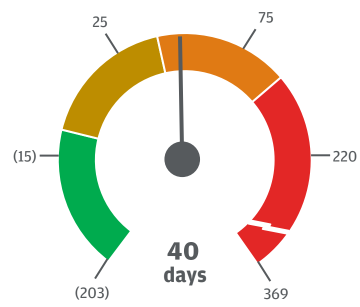
- Quartile 1 (0-19)
- Quartile 2 (19-35)
- Quartile 3 (35-60)
- Quartile 4 (60-201)

Days Payable Outstanding



- Quartile 1 (73-306)
- Quartile 2 (51-73)
- Quartile 3 (37-51)
- Quartile 4 (14-37)

Cash Conversion Cycle



- Quartile 1 ((203)-(10))
- Quartile 2 ((10)-36)
- Quartile 3 (36-79)
- Quartile 4 (79-369)

Source: Capital IQ, Factset, Sustainalytics

Note: Leverage is Net Debt / EBITDA for FYE 2023, Revenue growth is change in revenue estimates for next 12 months, International suppliers is calculated based on the headquarter location of suppliers, according to Factset as of April 2024. ESG risk score is taken from Sustainalytics.

Key highlights

→ The oil & gas upstream sector experienced an 8.1-day increase in CCC in 2023, mirroring broader working capital index levels. This is primarily attributed to a slower collection cycle and higher inventory levels.

→ Following a sharp inventory decline in 2022, primarily due to the Russia-Ukraine war, inventory levels rebounded in 2023 by 3.2 days from 43 days in 2022 to 46.2 days in 2023. This was driven by U.S. oil production touching an all-time high of 13.5 million barrels per day to compensate for supply disruptions. As the demand-supply gap narrowed, collection times also normalized, with DSO increasing by 7.3 days in 2023 to 64 days from the unusually low DSO of 56.7 days during 2022.

→ Demand and supply dynamics for this industry will continue to be impacted by external factors like geopolitical tensions, the evolving Middle East crisis and global monetary tightening. These factors will directly impact working capital requirements for oil & gas upstream players.

07

Conclusion

Working capital strategies and funding solutions offer alternative sources of cash for redeployment to growth and shareholders

With a fast-evolving macroeconomic environment, higher interest rates and supply chain uncertainties, businesses should focus on strong balance sheet management while always maintaining access to liquidity. Companies should also continue to focus on working capital optimization opportunities. There isn't a one-size-fits-all solution, and treasury and finance teams should look to improve overall working capital efficiency by analyzing and adopting multiple strategies including but not limited to:

- Financial and commercial efficiency peer benchmarking
- Economic health of supplier and customer relationships
- Payment and credit terms relative to sub-sector norms
- Spend vs supplier leverage and optimal pay methods
- Pro-forma capital efficiency impact vs process changes
- ESG tiering and DEI financial impact

J.P. Morgan prides itself on giving clients constructive and unbiased advice so they can make informed decisions on what's best for their organization. Our client connectivity and data resources span industries at scale, globally. This enables the firm to advise companies on working capital strategies and execution through a range of solutions, unlocking trapped capital from their payables, receivables and inventory management cycle.

Payables

- Supply chain finance
- Dynamic discounting
- Virtual cards
- Pre-payments
- Bills of exchange
- Pre-shipment finance

Receivables

- Receivables purchase
- Sales finance
- Securitization
- Contract monetization
- B2B Buy Now Pay Later (BNPL)

Inventory & others

- Inventory finance
- Trade loan
- Borrowing base facility
- E-Commerce merchant financing

End notes

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