

J.P.Morgan

J.P. Morgan Working Capital Index 2021

Helping companies
benchmark for success



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1 Introduction

This edition of the Working Capital Index report captures the working capital trends of 2020 – a year marked by the onset of the pandemic and the recovery outlook across industries that today continues to unfold and where its full impact on the global economy and business landscape will likely not be known until years from now.

Despite vaccination programs being rolled out globally, many countries are still experiencing new waves of infections, making it difficult to predict how much longer the pandemic will last, or when a full recovery will happen and how that might play out.

For corporates, the key to growth during this period is the strategic shift from capital preservation to capital deployment, where efficient working capital management will play a critical role in sourcing for capital to fund business and expansion opportunities.

Through insights derived from the analysis of working capital metrics, this report aims to help finance practitioners track the working capital trends and guide their initiatives to enhance their working capital management as they prepare for recovery in 2021.

In this issue, we will:

- Examine the performance of Working Capital Index, Cash Index and Cash Conversion Cycles (CCC) of the S&P 1500 companies in the past year
- Provide industry insights and assess the impact of pandemic on working capital
- Analyze the road to recovery and risks by industry

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 companies 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 companies 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

We have established the base levels of 100 for both the Working Capital Index and the Cash Index, using 2011 as the base year.

III. The **Cash Conversion Cycle (CCC)** is the number of days it takes to convert inventory purchases into cash flows from sales. The CCC is a metric that helps quantify the working capital efficiency of a company and is derived from three different 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 to suppliers



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

Note:

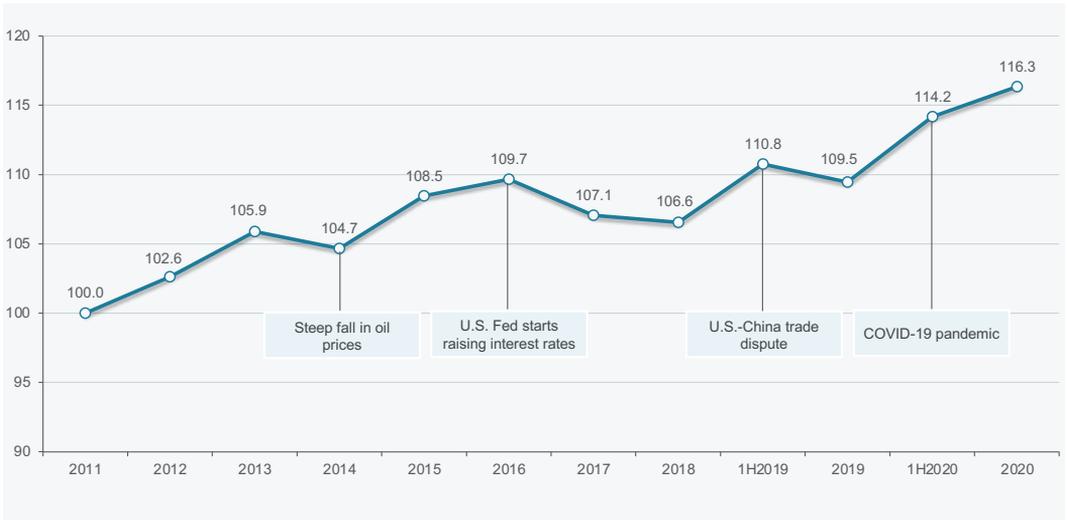
To avoid the distortion of data, financial services and real estate firms in the S&P 1500 were excluded from the calculations due to their distinct business models and unique working capital metrics in comparison to other industries. Companies with high volatility in working capital and those with incomplete data were also removed, bringing the total number of companies used for this analysis to over 900.

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.

2 Key Findings

I. Working Capital Index rose to highest level in a decade



Source: Capital IQ

In 2020, the Working Capital Index rose to its highest level in 10 years, as the widespread lockdowns that impacted supply chains as a result of the pandemic crisis, combined with the stalling of demand for products and services across multiple industries as the global economy went into recession, left corporates with high levels of excess inventories. The situation was exacerbated as companies stocked up on inventories to mitigate further supply chain disruptions.

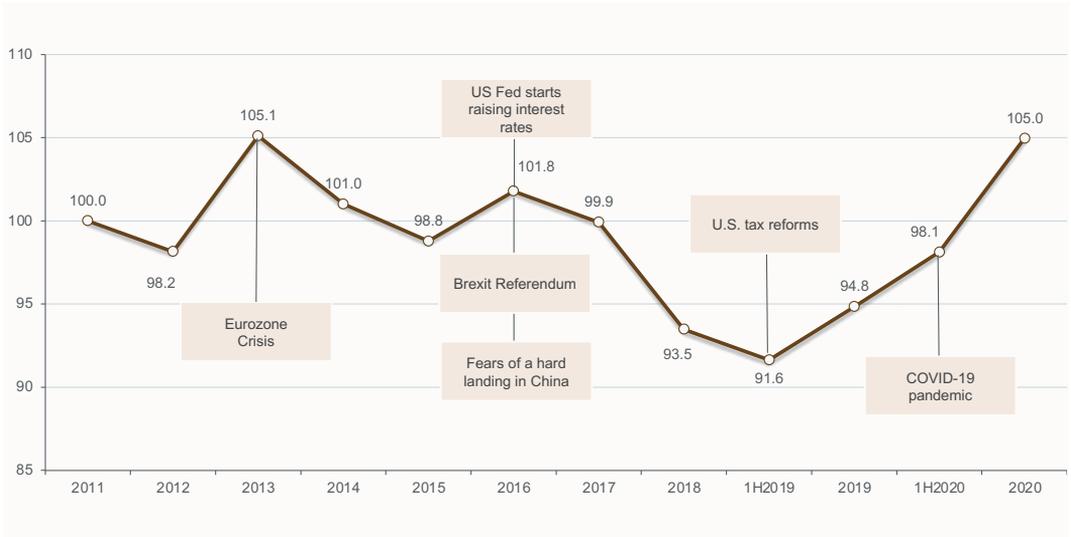
As business sentiment recovered towards the end of the year, sales in some industries improved and receivables levels subsequently rose, further contributing to the increase in working capital levels.

With the global economy expected to recover this year, working capital levels in 2021 will likely trend lower as consumer confidence rebounds and demand for goods and services returns.

Takeaway:

Treasurers should continue to focus on enhancing their working capital management. Significant amounts of liquidity currently trapped in working capital if released in a timely manner can provide the much-needed capital to fund future growth.

II. Cash index rose significantly on fortified liquidity buffers



Source: Capital IQ

The Cash Index also rose in 2020 to levels not seen in seven years as corporates turned to fund-raising initiatives and cash preservation measures to shore up their liquidity buffers amid the pandemic.

Cash preservation initiatives employed included putting a pause on share repurchases, cutting back capital expenditure and reducing external spending. The record low interest rate environment coupled with the massive stimulus from the U.S. government further made it easier for companies to boost their cash holdings,

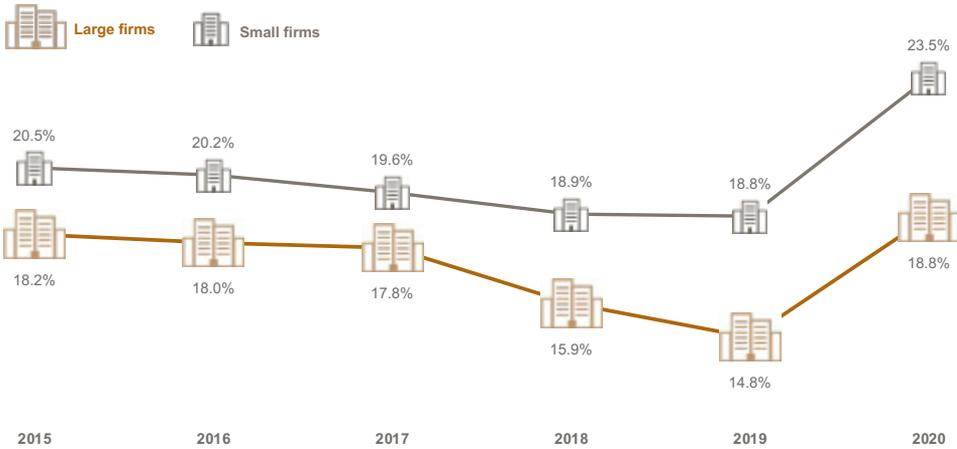
With a recovery taking shape in 2021, we expect corporates to start deploying the excess cash through capital investments, share buybacks, dividends payout, debt repayments or M&As, reducing their cash holdings.

Takeaway:

As corporates prepare for a recovery in their businesses, treasurers should revisit their cash management strategies and shift focus from cash preservation to cash deployment to support the business growth.

III. Widening gap in cash levels between small and big companies

Cash-to-Sales ratio for big companies and small companies



Source: Capital IQ

Note:

Historical ratios restated according to latest S&P 1500 constituents as of 2020. Values for big companies are derived by calculating the averages across the top 50 percent of companies (by revenue) of every industry. For small companies, the value is calculated using the averages of the bottom 50 percent of companies (by revenue) across each industry.

The pandemic crisis posed unique challenges in the ability to procure funding, resulting in a widening gap in cash levels between small and big companies.

Small companies generally maintain higher cash levels than their larger counterparts, as bigger companies tend to have more efficient cash management practices and better access to external capital. During the pandemic, the propensity for lenders to provide capital to small companies relative to big companies reduced, prompting smaller companies to beef up their cash buffers.

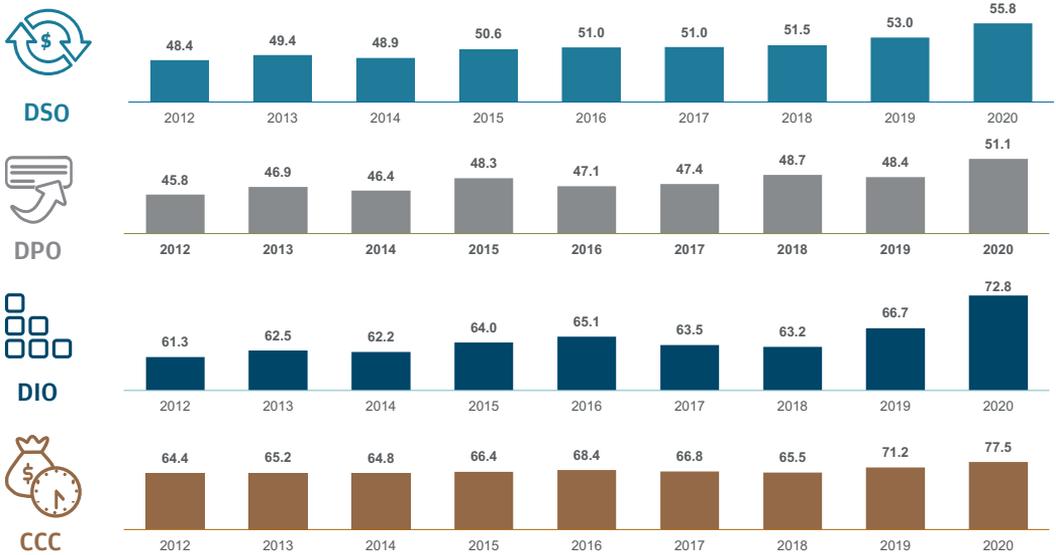
For this reason, 2020 saw an increase of 4.7 percent in cash levels for small companies vis-a-vis a 4.0 percent rise for their bigger counterparts.

Takeaway:

Corporates should assess and create cash management strategies best suited for them, keeping the balance between managing the risks arising from the pandemic crisis and supporting business growth as recovery takes shape.

IV. Cash Conversion Cycle lengthened the most in nine years

Average working capital performance parameters across the S&P 1500 companies 2012-2020 (in average number of days)



Source: Capital IQ

The Cash Conversion Cycle (CCC) of the S&P 1500 companies lengthened by 6.3 days in 2020, representing the biggest increase in nine years, largely due to a rise in inventory levels.

Weakened demand and supply chain disruptions resulted in the inventory buildup, prompting the days inventory outstanding (DIO) to reach a new high where companies were carrying inventories for 6.1 more days on average.

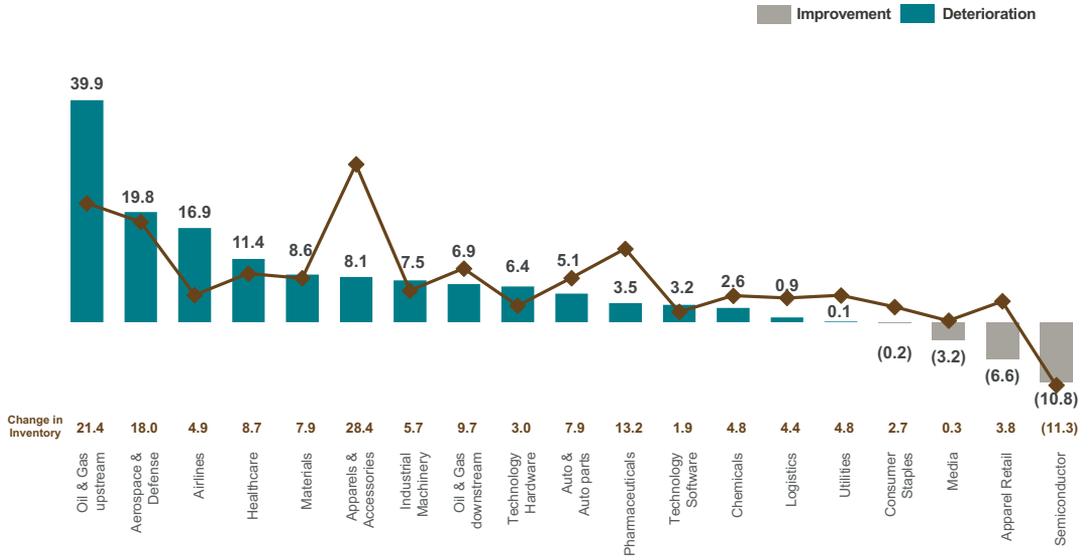
The days payable outstanding (DPO) and days sales outstanding (DSO) also showed sharp increases last year as some companies extended payment terms with their suppliers, customers and leveraged solutions like supply chain finance to manage working capital challenges.

Takeaway:

The pandemic exposed the vulnerabilities of global supply chains, where companies are now focused on reviewing their end-to-end supply chains. By understanding the inherent risks, they need to develop sustainable action plans to build resiliency in their supply chains that can withstand future shocks and mitigate any negative impact on working capital. In addition, the increased interest from investors and corporates on the importance of environmental, social and governance (ESG) will require treasury and finance teams to focus on digitization and sustainable supply chain solutions.

V. Majority of industries experienced deterioration of CCC

Changes in Cash Conversion Cycle by sector (days) 2019-2020



Source: Capital IQ

In terms of the CCC performance across sectors, 15 of the 19 industries saw deterioration, or longer CCCs, due to accumulated inventories.

Among the industries, the CCC of the oil & gas upstream lengthened the most as inventory piled up as a result of reduced demand for oil. The CCC of the aerospace & defense sector also increased significantly amid cancellations of aircraft orders and a drop in demand for aviation parts.

On the other hand, the semiconductor industry experienced the biggest improvement in their CCC due to leaner inventories as a result of strong demand for data storage firms and personal computer manufacturers with the majority of the global workforce pivoting to remote work arrangements.

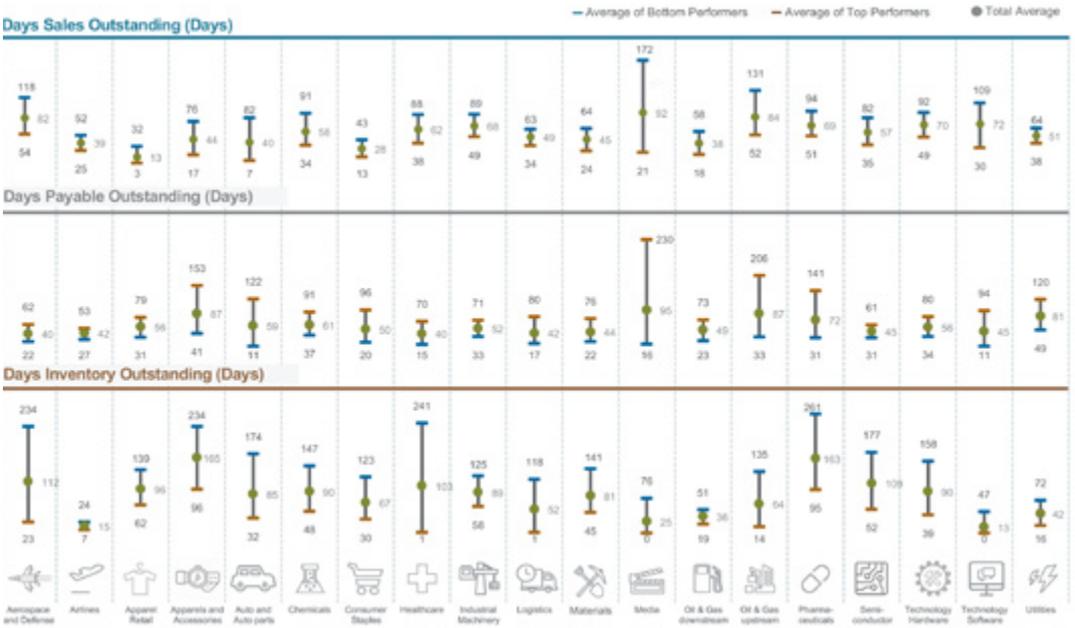
Takeaway:

The pandemic caused significant challenges in working capital management, where some treasurers resorted to tactical short-term measures like delaying their payments to suppliers. For the longer term, treasurers should reassess the levers driving their CCC and devise a more sustainable strategy to manage working capital.

VI. More than \$500 billion estimated in potential working capital

There remains significant amount of liquidity tied up in supply chains across the S&P 1500 companies observed in the DSO, DIO and DPO metrics, as well as the cash levels within industries (see chart below).

Snapshot of the average working capital performances between the top and bottom performers across 19 industries in 2020 (in number of days)



Source: Capital IQ

Snapshot of the average cash levels between top and bottom performers across 19 industries in 2020 (in percentage of revenue)



Source: Capital IQ

Assuming every organization improved its working capital and moved into the next performance quartile¹ in their respective industries across the DSO, the DPO and the DIO metrics, an estimated \$507 billion in working capital could have been released as of year-end 2020, up from \$497 billion in 2019.

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

Takeaway:

The increase in trapped working capital implies a widening gap between the leaders and laggards in working capital management. Companies with less efficient working capital management should look at industry best practices and measure their performance on a continuous basis to identify and release some of this trapped capital as they plan for recovery.

3 Post-pandemic Recovery Outlook Across Industries

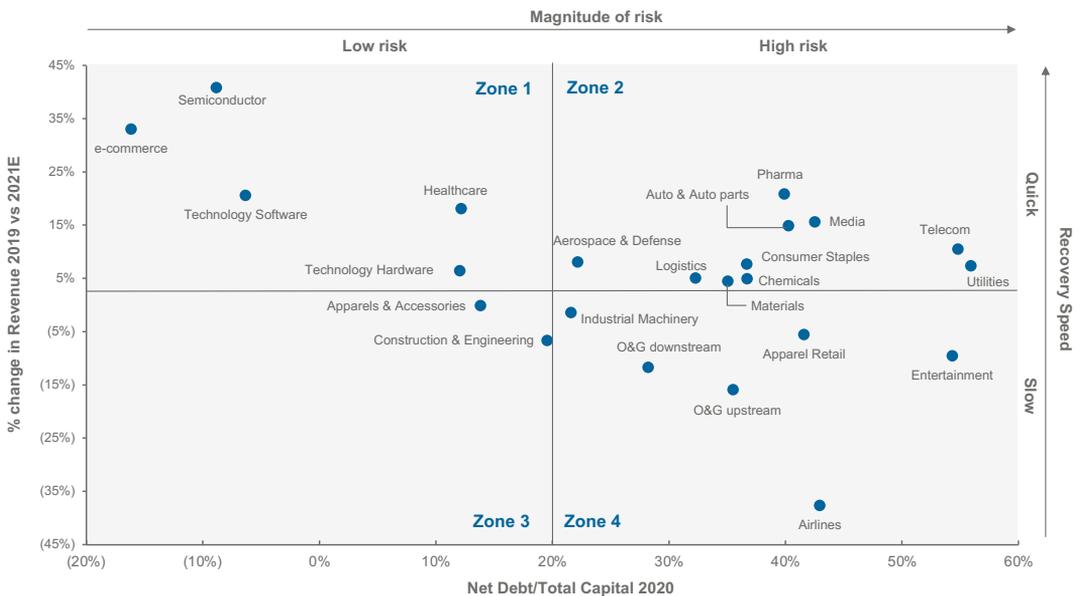
As a result of the pandemic crisis, the global economy in 2020 suffered its worst downturn since World War II, with widespread impact to the business landscape worldwide. However, the extent of the impact varied significantly across industries with sectors like technology and healthcare flourishing and airlines and hospitality severely challenged.

Likewise, the speed of recovery across the industries in 2021 is also expected to be uneven, with growth in some sectors rebounding quickly while others likely to take years before returning to pre-pandemic levels.

To quantify the recovery pace and the inherent risk (measured by debt levels) across industries, we compared the percentage change in revenues of S&P 1500 companies in 2019 (pre-pandemic) versus 2021 estimates¹, against the extent of indebtedness (or net debt to total capital levels) in 2020.

The chart below categorizes findings into four zones:

- Zone 1: Quick recovery, low risk
- Zone 2: Quick recovery, medium risk
- Zone 3: Slow recovery, medium to high risk
- Zone 4: Slow recovery, very high risk



Source: Capital IQ

¹2021 Revenue estimates as of March 25, 2021

Industries that lie within **Zone 1**, such as e-commerce, semiconductor and technology software, were either positively or minimally impacted by the pandemic. With low debt levels, these industries are expected to experience revenue growth this year and will have little need to preserve excess cash. They are likely to initiate aggressive cash deployment towards expansionary measures like capital expenditure and M&A to drive growth in the next few years.

Sectors in **Zone 2** like media, auto & auto parts, and consumer staples will also likely see business rebound this year but they have stretched balance sheet positions due to high net debt levels. Companies in this zone should be cautious with their growth plans, and focus on enhancing working capital and liquidity efficiencies to fund expansion from internal sources without impacting their leverage positions.

Industries within **Zone 3** suffered a steep fall in revenues, but their relatively strong balance sheets provide them room to take on further debt. As these industries could experience slower recovery this year, they may have to play a waiting game and continue to focus on building their liquidity reserves to fund growth when the opportunities arise.

Sectors with **Zone 4** - including airlines, oil & gas, and entertainment – were the hardest hit and recovery will take some time. With high leverage levels and having suffered adverse impacts to cash flows and liquidity, these industries will find themselves on the defensive with no room to stretch their balance sheets further. Cash deployment will be subdued and companies in this zone should maintain focus on preserving cash, enhancing liquidity management and generating working capital efficiencies.

Key industry insights

To illustrate the extent of pandemic impact on different industries, we examined four sectors representing the different zones:

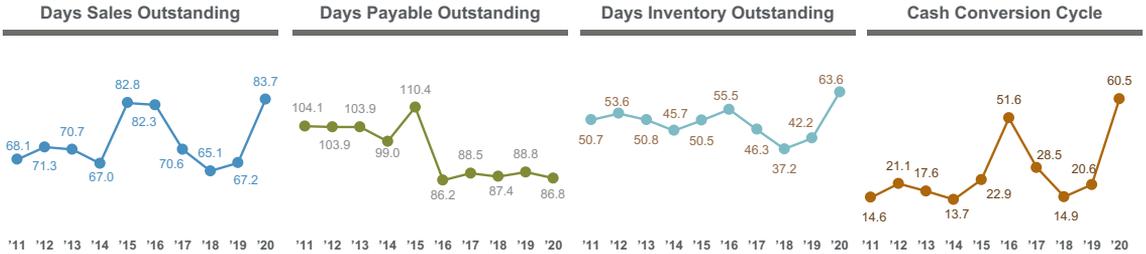
- Oil & Gas upstream
- Auto & Auto parts
- Apparel & Accessories
- Semiconductor

The analysis also breaks down the working capital parameters into four performance quartiles (with the first quartile representing the performance of the top 25 percent companies within the industry and the fourth quartile corresponding to the bottom 25 percent) to enable finance practitioners to identify industry averages and benchmark their organizations' working capital performances against peers.

I. Oil and Gas upstream



Comparison of working capital parameters within the oil and gas upstream sector 2011-2020 (in average number of days)

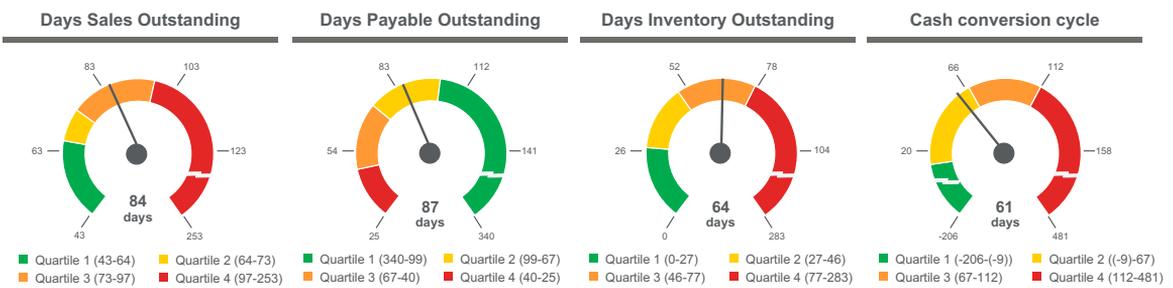


Source: Capital IQ

2020 was a year of disruption for the oil and gas upstream sector with the CCC deteriorating by 40 days. The industry was already experiencing headwinds prior to the pandemic as a result of the global trade tensions and oil price wars between global oil producers. The onset of pandemic caused global demand to slump, driving down oil prices to levels not seen since the aftermath of September 11 terrorist attacks in 2001. The oversupply led to excess oil inventory levels, resulting in a rise of approximately 21 days in DIO on average for the upstream sector.

The companies in the upstream sector faced severe liquidity challenges particularly related to delayed payments and payment defaults by their customers, leading to an average increase of 17 days in DSO.

Working capital parameters within the oil and gas upstream industry 2020 (in average number of days)



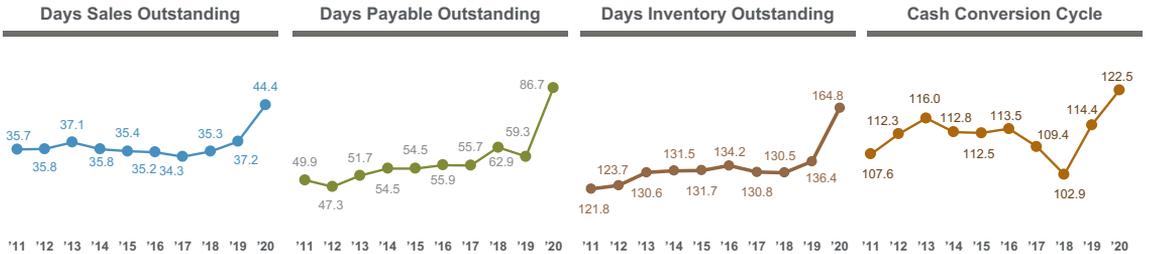
Source: Capital IQ

In 2020, upstream companies took an average of 87 days to pay its suppliers while cash from sales was realized in 84 days. On average, companies maintained 64 days' worth of inventory.

II. Apparel and Accessories



Comparison of working capital parameters within the apparel and accessories sector 2011-2020 (in average number of days)



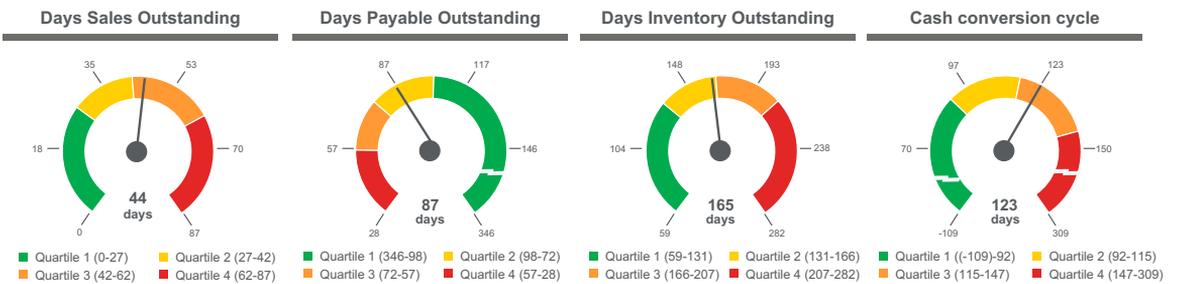
Source: Capital IQ

The apparel and accessories industry experienced one of its most challenging years in recent memory as the widespread lockdowns due to pandemic kept stores shut and disrupted supply chains.

While consumers took to e-commerce platforms for shopping, helping to reduce inventory levels, the industry still saw an average increase of 28 days in DIO from 2019 levels. Delays in payments by customers also led to an increase in the DSO by 7 days on average.

However, a large part of the CCC increase was offset by increase in DPO that rose by 27 days on average as companies delayed their vendor payments or used supply chain financing solutions to manage their liquidity needs.

Working capital parameters within the apparel and accessories industry 2020 (in average number of days)



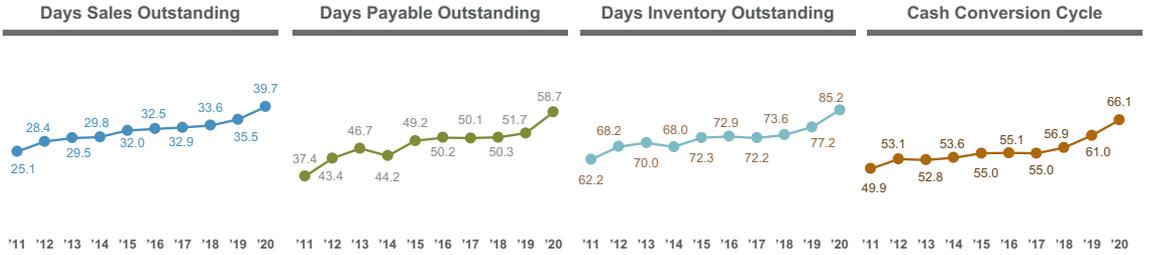
Source: Capital IQ

In 2020, companies within the apparel and accessories industry took an average of 44 days for to turn sales into cash proceeds. The sector held 165 days' worth of inventory, and payments to suppliers were generally made within an average of 87 days.

III. Auto and Auto parts



Comparison of working capital parameters within the auto and auto parts sector 2011-2020 (in average number of days)



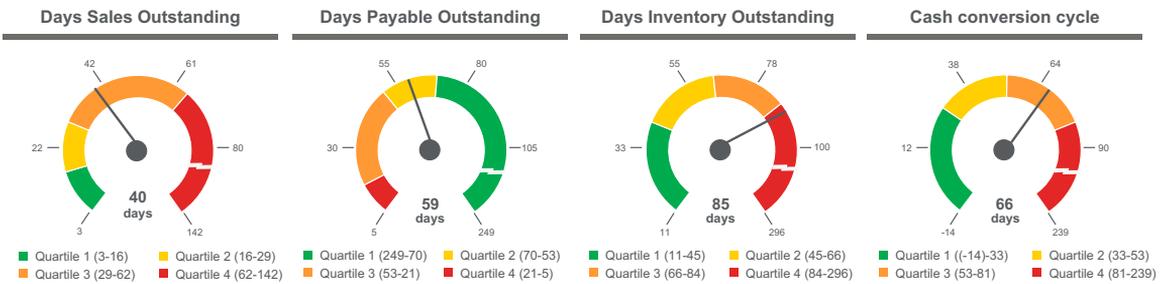
Source: Capital IQ

The auto and auto parts industry was one of the hardest hit sectors at the onset of pandemic as widespread factory closures, slumping car sales and massive layoffs led to supply and demand shocks for both auto suppliers and automakers. Inventory levels rose significantly in the first half of 2020 as demand collapsed.

A rebound in demand in the second half of 2020 helped to reduce inventories from the highs of first half 2020. On average, the DIO rose by 8 days compared to 2019 levels.

The DPO rose by an average of 7 days as companies negotiated for temporary extensions of payments terms with suppliers and service providers in response to the pandemic. The 4 days on average rise in the DSO was reflective of the increase in receivables in the fourth quarter when demand for auto parts rebounded.

Working capital parameters within the auto and auto parts industry 2020 (in average number of days)



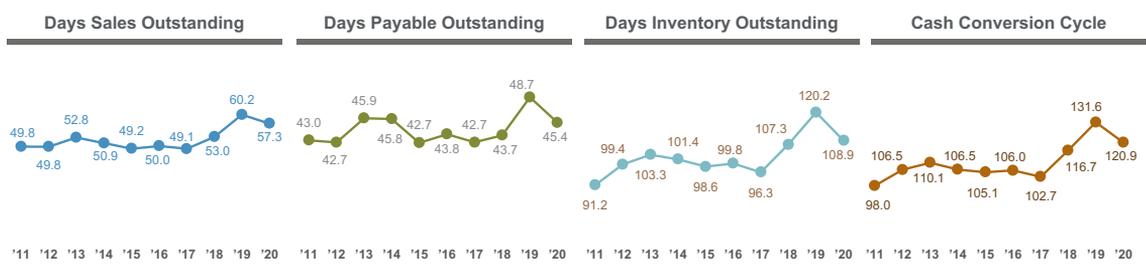
Source: Capital IQ

As of 2020, auto and auto parts companies took an average of 59 days to pay off supplier invoices. They maintained an average of 85 days' worth of inventory and took 40 days to convert sales into cash proceeds.

IV. Semiconductor



Comparison of working capital parameters within the semiconductor sector 2011-2020 (in average number of days)

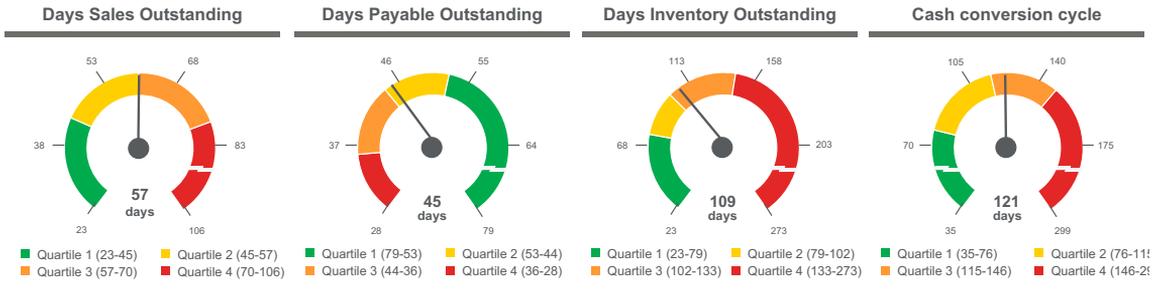


Source: Capital IQ

As majority of the global working population pivoted to remote work arrangements as a result of movement restrictions and lockdowns, the semiconductor industry experienced a surge in demand on the back of strong sales of consumer electronics goods and increased demand for cloud services. Combined with additional factors including the adoption of 5G technologies, resurgence in demand for automobiles towards the end of the year, and an increase in size of orders by customers to build inventory reserves due to supply chain concerns, the semiconductor industry was at the brink of exhausting its manufacturing capacity by the end of 2020. The industry's DIO decreased by approximately 11 days in 2020 as compared to 2019.

High demand for semiconductor-related products also resulted in lower DSO as the firms could bargain for faster collections from their customers. The DSO improvement was however largely offset by a reduction in the DPO as the industry passed on the benefits to their suppliers. Overall, the industry's CCC decreased by an average of 11 days in 2020.

Working capital parameters within the semiconductor industry 2020 (in average number of days)



Source: Capital IQ

In 2020, the semiconductor industry took an average of 45 days to pay off suppliers, maintained 109 days of inventory and took 57 days to turn sales into cash proceeds.

4 Managing Liquidity Risks

A Lesson from History

As the focus of businesses turns towards recovery, we wanted to examine past economic downturns of similar magnitude to derive lessons we can apply to the current recovery phase.

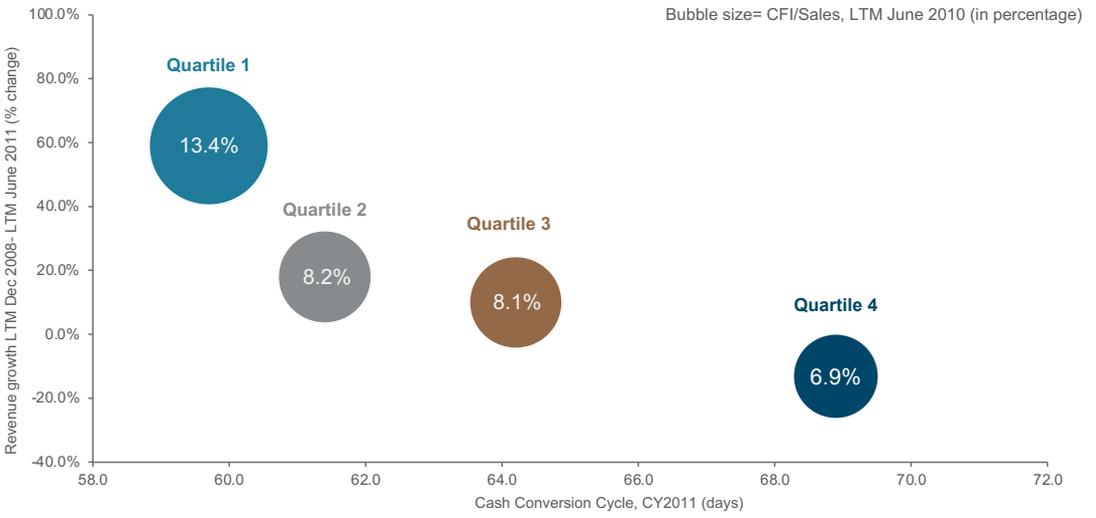
Using data from the S&P 1500 companies during the global financial crisis (GFC) of 2008, we calculated the percentage change in their revenue at the height of the crisis (the 12 months ending December 2008) and post recovery from the crisis (12 months ending June 2011). We also calculated their cash flow from investing (CFI) as a percentage of sales from July 2009 to June 2010 - widely viewed as the initial phase of the recovery from the GFC and a period we are using as a benchmark to compare recovery trends in the current environment. Finally, we cross checked the S&P 1500 companies' CCCs in 2011 against growth rates during GFC recovery period.

We observed a strong correlation between the amount companies invested during the early phase of recovery and the pace of rebound in their revenue growth. Also, the companies who invested the most and registered strong revenue growth also displayed low CCC readings (categorized in Quartile 1), reflecting robust working capital efficiencies.



This demonstrates the importance of working capital management during the recovery phase of a crisis in facilitating a rebound; the S&P 1500 companies that were able to manage working capital efficiently could access cheap internal source of funding during recovery phase of the GFC allowing them to quickly deploy more cash towards growth activities.

Correlation between revenue growth and working capital efficiency as well as cash deployment



Source: Capital IQ

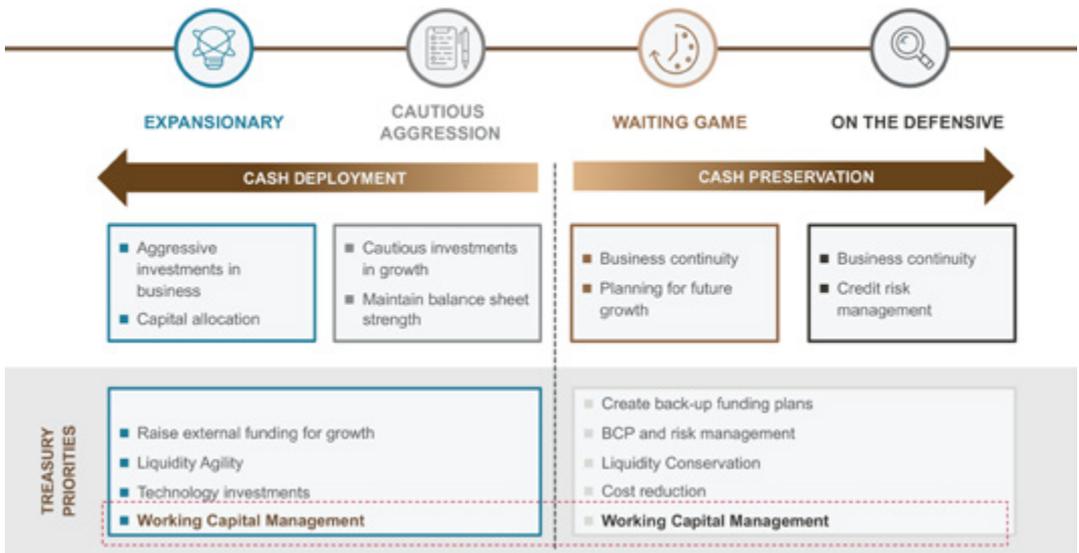
Note:

S&P 1500 companies have been categorized into four quartiles based on their revenue growth, with the first quartile representing the top 25% companies with the highest revenue growth within their industries, while the fourth quartile corresponds to the bottom 25% companies with the lowest revenue growth in their respective sectors.

5 Conclusion

The pandemic has put unprecedented financial pressures on businesses, compelling CFOs and corporate treasurers to re-evaluate their cash and liquidity management to ensure business and operational continuity

Treasurers will continue to play an important role as businesses recover from the pandemic. We highlight four different approaches treasurers can take to navigate the crisis this year, depending on the speed of recovery and the strength of their balance sheets.



Expansionary: Companies with strong balance sheets and are expecting a fast recovery would likely invest aggressively either through organic or inorganic means for growth in 2021. Cheap cost of funding and high cash levels can provide the necessary firepower for these companies to execute their plans. The key priority for treasury in these companies will be to ensure that necessary cash is available at the right place, at right time and in right currency to fund high value transactions.

Cautious aggression: Companies that are expecting quick recovery but have high leverage ratios may have challenges accessing external capital due to limitations to further stretch their balance sheet. Treasurers will need to balance funding growth while ensuring the company does not face liquidity challenges.

Waiting game: Companies with slow expected recovery but with strong balance sheets will likely wait a little longer to invest in the growth. Focus for treasurers in these companies will likely be to continue with cash preservation activities like reduction in capex, M&A activities and discretionary expenses to create reserves for funding growth when the opportunities arise.

On the Defensive: Companies with slow expected recovery and weak balance sheets will be the most at risk of further impacts from the crisis. Conserving liquidity will be the key priority as treasurers look to ensure the company has enough cash until the crisis blows over.

While there are varied paths treasurers will have to take during recovery in 2021, we expect working capital optimization to continue to remain a key priority for treasurers. With ~US\$507bn currently trapped in working capital that can potentially be released, it can provide a cheap source of funding to either support the growth for companies experiencing strong recovery or provide the liquidity cushion for businesses waiting to ride out the crisis.

6 Summary of Findings

**\$507
BILLION**

Estimated working capital that can be released across the S&P 1500 companies

Top three industries showing deterioration in CCC in 2020

(Number of days the CCC lengthened by)



16.9

Airlines



19.8

Aerospace & Defense



39.9

Oil & Gas upstream

Top three industries showing improvement in CCC in 2020

(Number of days the CCC shortened by)



10.8

Semiconductor



6.6

Apparel Retail



3.2

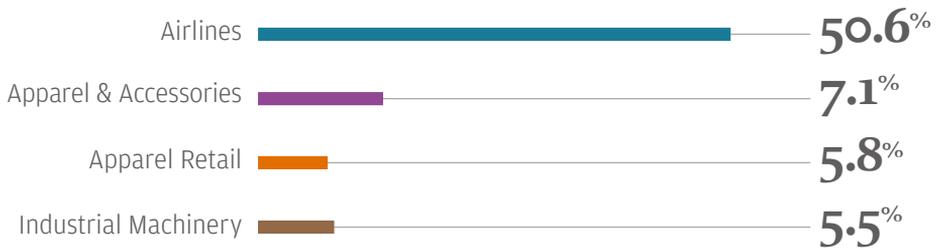
Media



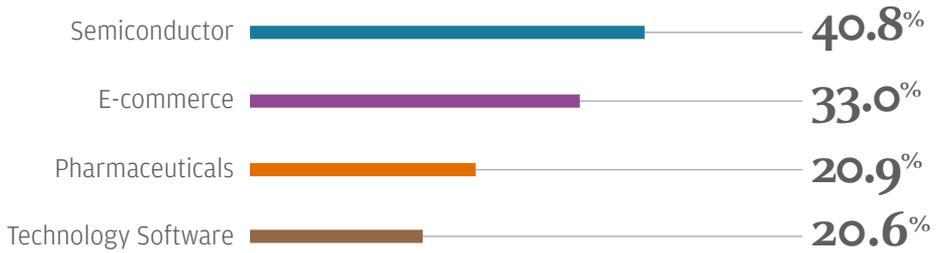
of companies in the S&P 1500 saw a deterioration in CCC of which:

- **86%** showed a lengthening in DSO
- **87%** experienced an increase in DIO

Top four industries with the highest rise in cash levels in 2020



Top four industries with maximum growth expected during recovery (based on estimates in 2021 revenue)



Growth in revenue during global financial crisis recovery (December 2008 – June 2011)



7 Authors



Gourang Shah

Global head for Treasury and Working Capital Optimization
Wholesale Payments
J.P. Morgan
gourang.shah@jpmorgan.com



Varoon Mandhana

Head of Wholesale Payments Solutions, Asia Pacific
J.P. Morgan
varoon.mandhana@jpmorgan.com



Vikrant Verma

Advisor, Wholesale Payments Solutions, Asia Pacific
J.P. Morgan
vikrant.verma@jpmorgan.com



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