J.P.Morgan

Unlocking Billions: Working Capital Index China Report 2022





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01 Introduction

This edition of the Working Capital Index report captures the working capital trends of 2021 for Chinese companies, including those listed on onshore exchanges as well as in offshore key markets like Hong Kong and the U.S. In 2021, the global economy and business community continued to face the impact from an ongoing COVID pandemic, as well as other key challenges such as geopolitical tensions and supply chain disruptions.

For Chinese corporates, as important players in global supply chain, there is a series of strategic considerations to ensure business growth in turbulent times, including navigating through restrictive measures caused by new local outbreaks, shifting demands in the international markets, and the need to further upgrade and optimize treasury management practices to achieve higher efficiency in global operations.

Through insights derived from the analysis of working capital metrics, this report aims to help treasury and finance professional for Chinese companies track working capital trends, benchmark against peers to understand relative performance and opportunity, and guide their initiatives to enhance working capital management for recovery and growth in 2022.

This report covers:

- → The performance of the Working Capital Index, Cash Index and Cash Conversion Cycles (CCC) for China's listed companies*
- → Opportunities for Chinese companies in an evolving operating environment
- → Insights into working capital management performance for key sectors in 2021

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 listed Chinese companies and is calculated as follows:

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

I. The Cash Index tracks the average cash/sales values across the companies and is calculated as follows:

Average Cash =
$$\sum_{K=1}^{n} Cash_{k} / Sales_{k}$$

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 Payable Outstanding (DPO) or the number of days from the time a company procures raw materials to payment to suppliers
 - → Days Inventory Outstanding (DIO) or the number of days the company holds its inventory before selling it
 - → Days Sales Outstanding (DSO) or the number of days taken to collect cash from customers



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 which helps unlock cash and reduces the operating liquidity needed to run day-to-day operations of any business.

Note:

* Listed companies included in this report are constituents of Indices including CSI 800, S&P US China 50, HSCEI. To avoid distortion of data, financial services and real estate firms in the list of companies 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 700.

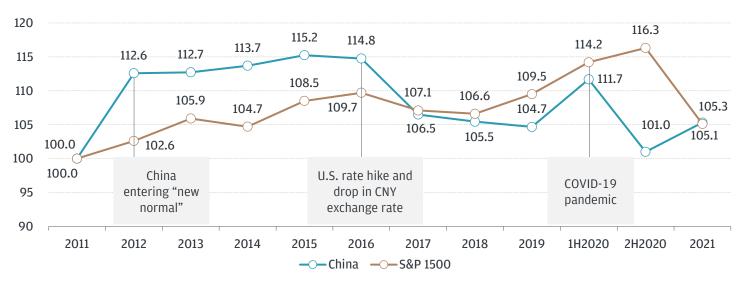
All numbered data have been gathered from Capital IQ for the purpose of calculations. Capital IQ normalizes reported financial numbers for more balanced comparison across markets applying China or U.S. accounting standards.

For Chinese companies which are dual listed on different markets, i.e., China mainland and Hong Kong, only one listing ticker is taken for calculations for avoidance of double counting.

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

02 Key Findings

I. Working Capital Index back at pre-pandemic level



Source: Capital IQ

In general, the Working Capital Index for Chinese companies has followed a similar trend as the S&P 1500 Working Capital Index over the past 10 years. However, the COVID-19 pandemic impacted the index differently.

From 2012-2015, the Working Capital Index for Chinese companies remained stable with mild increases as China entered a "new normal" stage in economic growth. This period featured stagnant growth, overcapacity across traditional industries and investment slowdowns. The index trended down in 2016 following a drop of CNY exchange rate, which made Chinese exports more competitive in overseas markets and boosted working capital performance.

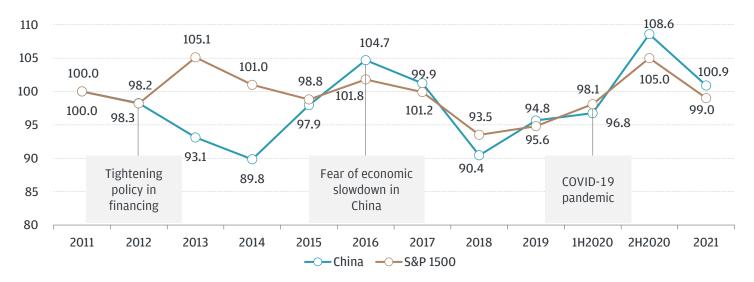
China's swift and decisive pandemic control measures ensured that the country emerged first from the pandemic crisis, so business activities resumed, supporting an economic recovery. At the same time, increased export demand helped business performance for Chinese companies. As a result, the Working Capital Index significantly declined at the end of 2020 when global demand shifted towards China as other parts of the world were still heavily impacted by the pandemic and supply chain disruptions.

During 2021, China encountered new challenges including the impact of pandemic lockdowns, softer domestic demand growth, subsiding policy support and a decrease in investment and export demand due to strong global economic bounce-back. Global supply chains were disrupted, and prolonged geopolitical tensions existed as well. As a result, the index rose 4.3 points to reach 105.3, which is close to pre-pandemic level.

Takeaway:

Chinese businesses benefitted from the country emerging as one of the first economies to recover from the pandemic. However, the global operating environment continued to present multi-faceted challenges, which introduced pressure to working capital management. Companies should take the opportunity to upgrade treasury management and enhance working capital management to achieve optimal balance between operational needs and resources for investing in future growth.

II. Cash index dropped from its highest level in recent years



Source: Capital IQ

Overall, the Cash Index of Chinese companies has followed a similar pattern as the S&P 1500 companies since 2015.

In 2013, a tighter regulatory stance on financing led to a cash crunch for Chinese corporates, which resulted in higher external financing costs and more limits to financing channels. Between 2013 and 2016, corporates held back investments and kept higher cash levels given fears of hard landing for the Chinese economy. In 2016, the country experienced the highest volume of outbound investment, marked by aggressive international expansion by Chinese companies.

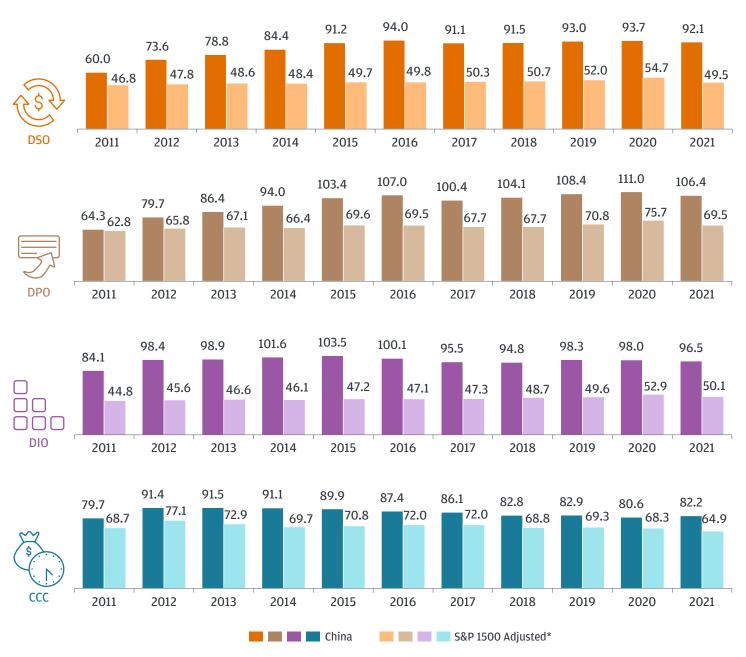
During the Covid-19 pandemic in 2020, companies increased fundraising activities and leveraged cash preservation measures to shore up their liquidity buffers. In 2021, as the global economy started to recover from the pandemic, and investment activities picked up as companies looked to sustain the growth momentum through more aggressive cash deployment.

Takeaway:

A company needs to know and have the right level of operating liquidity to manage working capital effectively. Chinese companies may consider setting up optimal liquidity management structures and mechanisms for efficient cash management, which can include advanced data and analytical cash flow forecasting tools, automated pooling structures etc. Maintaining an optimal cash position also means sustaining financial health and resiliency to uncertainty, allowing corporates to pave the way to further expand their global footprint and unlock growth potentials through continued strategic investments onshore and offshore.

III. Cash Conversion Cycle of Chinese companies lags U.S. counterparts

The Cash Conversion Cycle (CCC) of Chinese companies lengthened in 2021, following the shortest level in 2020 since 2012. The below illustrates the average working capital performance parameters across China's listed companies for 2011-2021 (average number of days) as compared to U.S. multinational companies.



Source: Capital IQ

Note

* S&P1500 numbers have been normalized by assigning same sector weight as Chinese company set for making comparison of components on the same basis

The CCC performance of Chinese companies lags the U.S. multinationals by over 10 days. This difference is mostly explained by a large gap in inventory efficiency (almost twice longer DIO days). Meanwhile, DSO and DPO are both considerably longer in China's business environment.

Over the past six years, the CCC performance of Chinese companies can be attributed to modest collection and payment improvements, and a seven-day decline in inventory days from 2015.

Nevertheless, the overall CCC performance of Chinese companies has been lagging multinational peers due to significantly longer collection cycles and higher inventory levels, indicating room for improvement in operational efficiency.

Takeaway:

Chinese companies can take measures to improve overall CCC performance. For instance, they can shorten collection cycles by implementing best practices in the entire order to cash cycle, using banking solutions such as advanced invoice matching and reconciliation tool for automated cash application, leveraging financing solutions such as receivables discounting to get paid faster, and improving inventory efficiency by optimizing supply chain management to reduce surplus inventory, and consider inventory financing solutions.

IV. Cash Conversion Cycle comparison for Chinese companies by size

The companies have been categorized into two tiers: Tier 1 and Tier 2 according to their relative and respective sizes. Values for Tier 1 companies are derived by calculating the averages across the top 50 percent of companies (by revenue) of every industry. For Tier 2 companies, the value is calculated using the averages of the next 50 percent of companies (by revenue) across each industry. For 2021, Tier 1 company average revenue was 10.3 times the average revenue of Tier 2 companies.

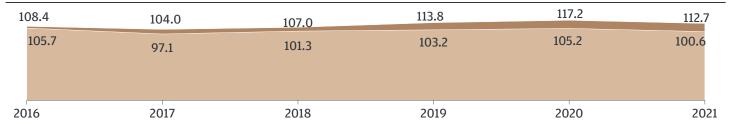
Tier 1 vs. Tier 2 - Significant Difference in CCC



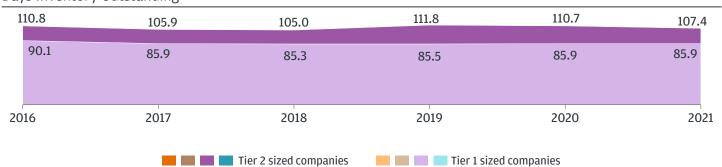
Days Sales Outstanding

109.3	104.1	103.8	107.9	111.2	107.7
79.7	79.0	80.1	78.9	77.0	77.2
2016	2017	2018	2019	2020	2021

Days Payable Outstanding

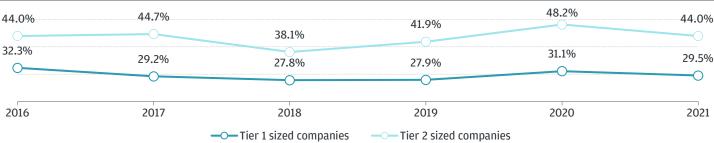


Days Inventory Outstanding



One noteworthy takeaway is that the Cash Conversion Cycle for Chinese companies greatly varies for organizations based on their size. Tier 1 sized companies collected 30.5 days faster and turned over inventory 21.5 days quicker than Tier 2 sized companies. That's because Tier 1 sized companies benefit from a stronger position in the supply chain and larger market share. Tier 2 sized companies have seen longer inventory turnovers than Tier 1 sized companies in recent years. For the past two years, the gap has decreased, but the difference is still about 20 days.

Tier 1 vs. Tier 2 - Gap Closing in Cash Index



Tier 2 sized companies generally maintain a higher cash buffer than their larger counterparts, as Tier 1 sized companies tend to have better access to external capital.

During the pandemic in 2020, Tier 2 sized companies increased their cash buffers to widen the gap to its biggest breadth in the past five years. In 2021, cash levels for Tier 2 sized companies substantially decreased to close the gap as cash deployment stabilized.

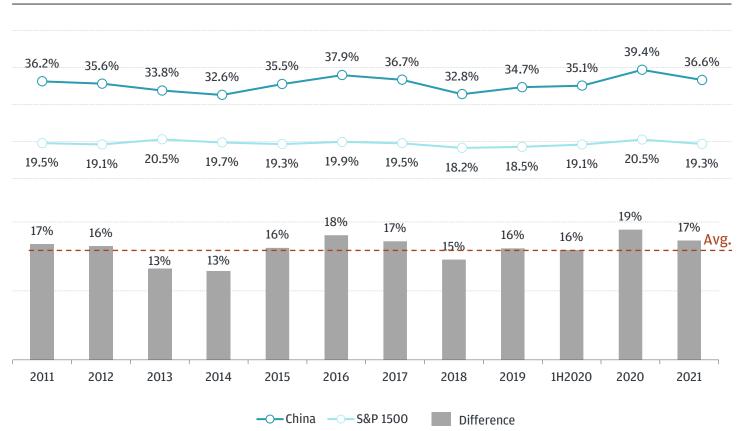
As the economy recovered in 2021, Tier 1 sized companies saw a drop of 1.6 percentage points in cash levels compared to a 4.2 percentage point drop for their smaller counterparts. Investing and cash deployment became more active as corporations across sectors sought to build up momentum for recovery and business growth going forward.

Takeaway:

Tier 2 sized companies have more opportunities to further optimize their collection methods and supply chain strategies to improve their DSO and DIO. There are opportunities for Tier 1 sized companies to step up cash deployment to catch up with global peers by optimizing liquidity solutions and capital planning to build momentum.

V. Cash level comparison - China vs. U.S. multinationals

Cash / Sales (%) 2011-2021



Compared to U.S. multinationals, Chinese companies usually keep significantly higher cash levels. The average annual difference is around 16%. Through analysis including benchmarking against global peers in their sectors, Chinese companies may identify potential opportunities to release trapped cash, which can be leveraged for investing in business growth and optimizing shareholder value.

As Chinese companies continue to navigate more challenging domestic and international business environments, optimizing cash utilization to invest in the future will be a key strategic agenda.

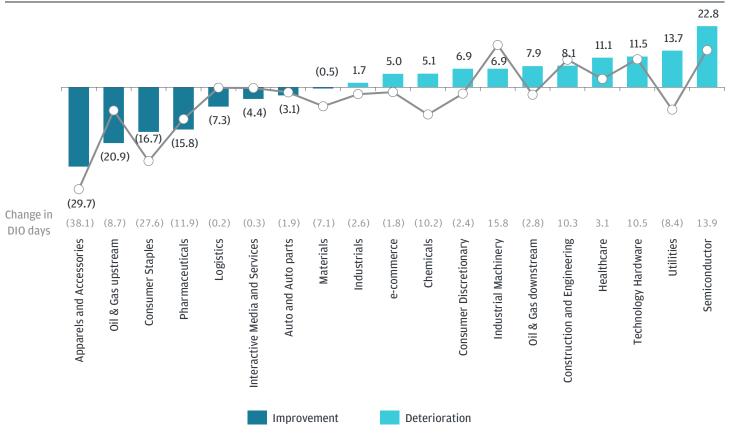
Takeaway:

Chinese companies generally have higher cash levels compared to their multinational counterparts. Releasing some of this cash offers significant potential to create more value for the shareholders. The priority is to ensure that cash requirements for sustainable business operations are fully considered while developing clear metrics for efficient cash deployment and working capital management.

VI. CCC performance varies across major industries in China

Though Chinese companies were some of the first to emerge from pandemic setbacks, these businesses continued to face a challenging domestic and global operating environment. Demand-side dynamics and international supply chain structure shifts tested corporates in optimizing working capital and balancing risk management and business growth.

Change in cash conversion cycle (days) 2020-2021



Source: Capital IQ

In 2021, e-commerce and consumer discretionary sectors experienced some CCC metric declines due to subsiding demands and new market challenges. These changes occurred after improvements in 2020.

The semiconductor industry had the largest conversion cycle extension. This change was primarily due to quick inventory build-up in 2021 given ongoing geopolitical tension, which interrupted the operational environment for the sector.

Compared to 2020 levels, 11 out of 19 industries showed deterioration of CCC performance.

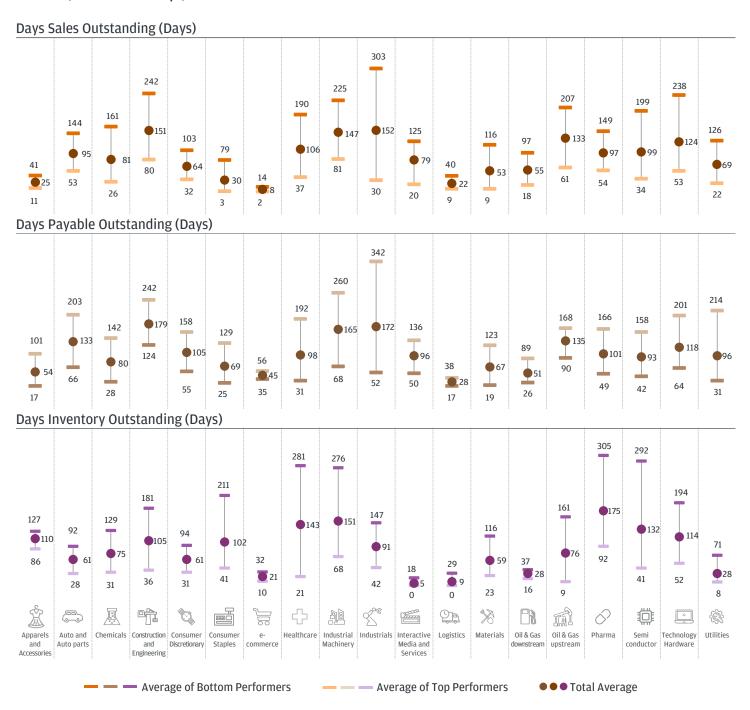
Takeaway:

Treasurers within Chinese companies should consider underlying drivers to improve overall CCC performance for their respective industries. These improvements can also optimize working capital in a new environment while meeting various operational challenges.

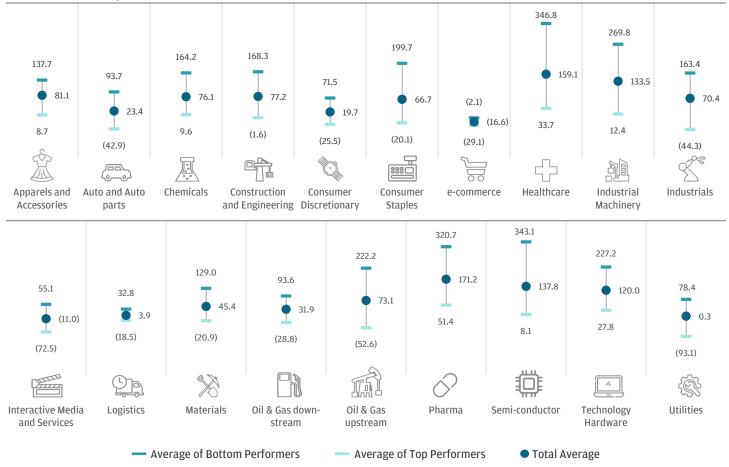
VII. A huge opportunity for treasurers - unlocking over US\$330 billion

There remains a significant amount of liquidity tied up in supply chains across the companies observed in the DSO, DIO and DPO metrics, as well as the cash levels within industries.

Snapshot of the average working capital performances between the top and bottom performers across 19 industries in 2021 (in number of days)



Cash Conversion Cycle



Assuming every organization improved its working capital and moved into the next performance quartile where applicable in their respective industries across the DSO, the DPO and the DIO metrics, an estimated \$335 billion in working capital could have been released as of year-end 2021.

Takeaway:

The huge working capital optimization potential implies a wide 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 the trapped working capital as they plan for recovery and growth in the future.

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

03

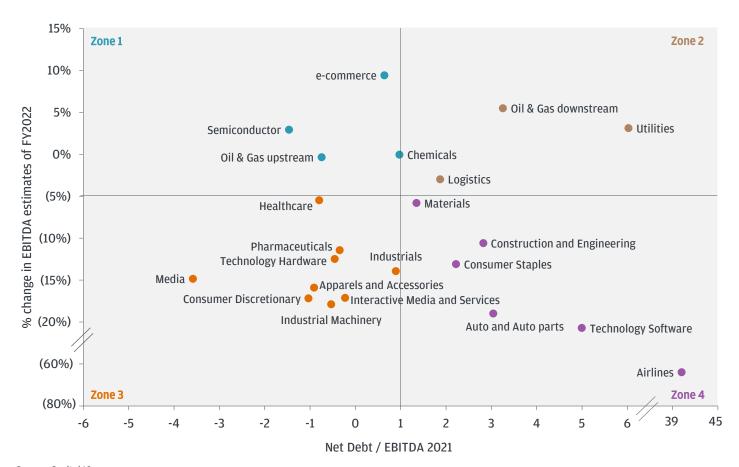
Impact of new risk events on industries - outlook for 2022

In the first half of 2022, regional conflict and extensive new Chinese Covid-19 lockdowns created pressure for Chinese companies across industries.

We quantified the worsening of outlook and debt burden across industries by comparing the state of indebtedness (or net debt to EBITDA levels) in 2021 and the extent of adjustments in earnings outlook (or FY2022 EBIDTA estimation) by the end of June 2022 as compared to the view at the beginning of the year.

Categorizing the industries into four zones to assess the extent of liquidity stress:

- → Zone 1 Low impact
- → Zone 2 Low-to-medium impact
- → Zone 3 Medium-to-high impact
- → Zone 4 High impact



Source: Capital IQ

Note:

Dates used to retrieve estimates for before and after the risk events were start of January 2022 and end of June 2022 respectively.

Industries expected to suffer heavy hits to their earnings performance given the negative impacts of the risk events include:

- → Airlines
- → Auto and auto parts
- → Technology software

Other industries less impacted or positively impacted thanks to new market demand and dynamics include:

- → E-commerce
- → Oil & Gas upstream / downstream
- → Semiconductors

Key industry insights

We picked four sectors from the different zones as representing sectors to have a closer look at their performance:

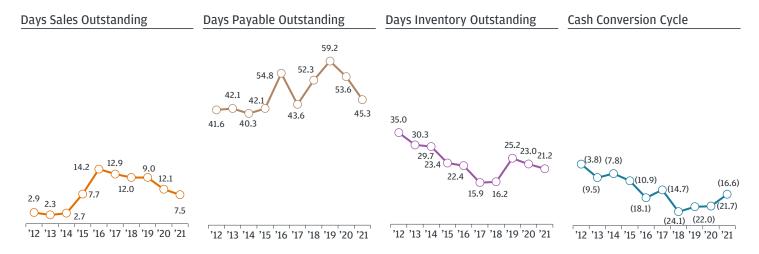
- → E-commerce
- → Oil and gas downstream
- → Pharmaceuticals
- → Auto and auto parts

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. E-commerce



Comparison of working capital parameters within e-commerce sector 2012-2021 (in average number of days)



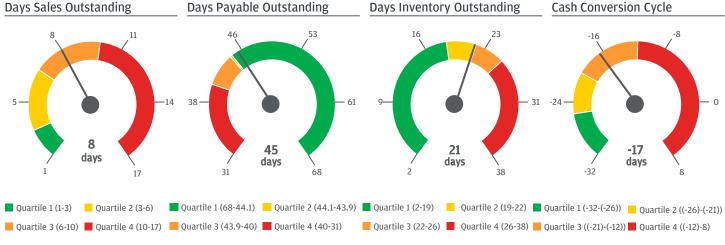
Source: Capital IQ

The e-commerce sector is mostly represented by online retail marketplaces such as JD.com, Alibaba and Pinduoduo.

The sector, compared to others, enjoys a faster collection cycle. It benefits from the mass market-facing nature of its business model with mostly payments upon check-out and highly efficient real-time online and mobile payment methods.

Despite collection efficiency improvements, DPO trended down in 2020 and 2021. E-commerce companies more quickly paid suppliers to ensure sustainable inventory levels in response to online shopping market demand.

E-commerce enterprises face rapid business innovations and evolving consumers expectation and need to continuously keep up with technology advancements to stay ahead of the game. As these companies expand their operation overseas, international and cross-border business flows will also become significant, providing the potential to leverage more advanced FX, global liquidity management and innovative pay-in and pay out solutions to improve processes, manage risks, enhance experience for merchants and consumers.

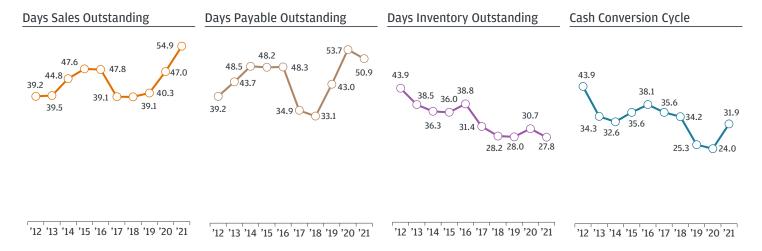


Source: Capital IQ

II. Oil and gas downstream



Comparison of working capital parameters within the oil and gas downstream 2012-2021 (in average number of days)



Source: Capital IQ

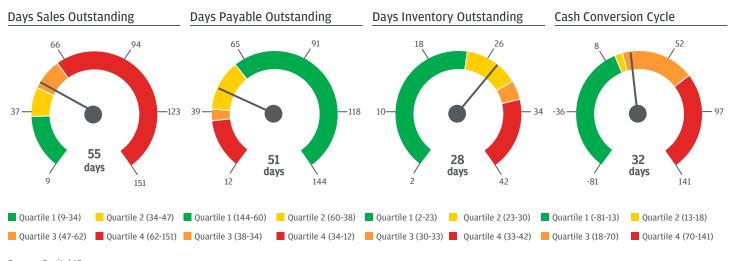
The Oil and Gas Downstream sector consists of integrated oil and gas groups and energy distribution companies like PetroChina, Sinopec, China Merchants Energy Shipping and COSCO Shipping Energy Shipping.

The sector had improved inventory turnover compared to 2020 as energy demand continued to be strong in support of continued economic recovery. But as a wide range of industrials and manufacturing sectors faced new challenges, DSO continued to expand for this sector as DPO dropped back, impacting overall CCC performance.

With increased consciousness around global clean energy, oil and gas giants need serious strategic considerations around transitions in business models and readiness for a greener future.

As the sector continues to face high leverage, capex and ESG expectations, working capital optimization becomes critical in mobilizing internal liquidity.

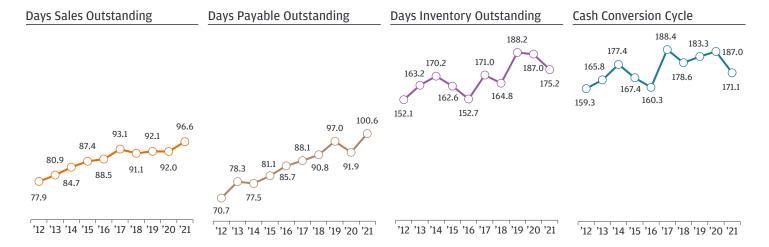
Major global peers are adopting strategic transformational structures such as in-house bank, on-behalf-of processing and supply chain financing to support legacy growth and unlock potential for future developments.



III. Pharmaceuticals



Comparison of working capital parameters within pharmaceuticals sector 2012-2021 (in average number of days)



Source: Capital IQ

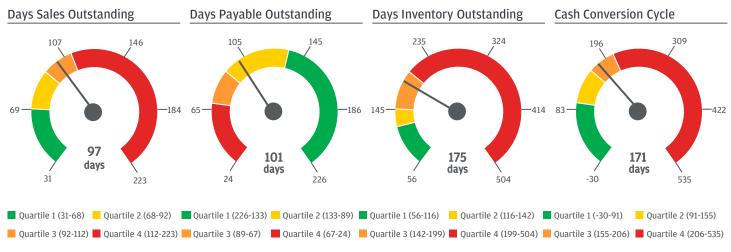
The sector mainly consists of pharmaceutical manufacturers such as Sino Biopharmaceutical, Fosun Pharmaceutical, Yun'nan Baiyao and Tong Ren Tang.

The sector's CCC performance improved in 2021 given that high market demand for pandemic-related vaccine and antiviral drugs decreased inventory levels.

Reinforced government centralized procurement further weakened the bargaining power for the pharmaceutical manufacturers, introducing margin erosion risks.

The domestic market structure continued to experience more adjustments and policy-led reforms. Companies need to adapt quickly to changes such as the flattening distribution channels and emerging business models like D2C e-commerce.

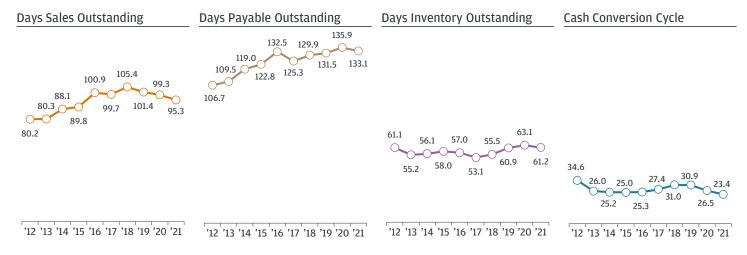
In 2022, new risk events brought bigger threats to overall economic growth, which impacted the sector's earnings potential. Optimization of working capital and financing resources will be crucial for future business growth under such a challenging operating environment.



IV. Auto and auto parts



Comparison of working capital parameters within auto/auto parts sector 2012-2021 (in average number of days)



Source: Capital IQ

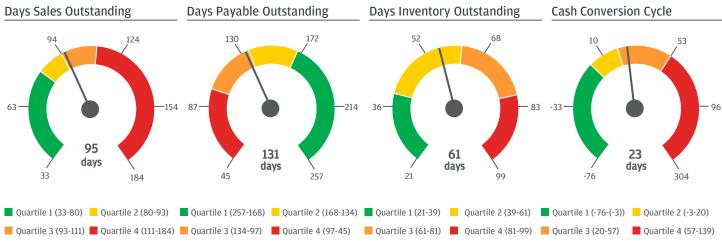
The auto and auto parts industry consists mainly of auto makers such as SAIC, BYD, Geely Auto and Great Wall Auto.

In 2021, the sector witnessed its first year-over-year sales growth in four years as well as noticeable increases in CCC and DIO. The increase in DIO can be attributed to the prolonged production cycle caused by the shortage of chip supply.

In addition, the influence of pandemic control measures in the country led to a decline in demand for consumer discretionary products.

Looking ahead, the industry will likely see easing supply constraints. However, the demand growth for auto will likely moderate in 2022, which implies limited incremental growth potential. Companies will need to focus on internal funding and working capital structure optimization to prepare for liquidity challenges.

They must also adapt quickly to capture business opportunities presented by the transition to electric vehicles (EV) and new business models, including online direct sales to consumers, connected car, and mobility solutions.



Source: Capital IQ

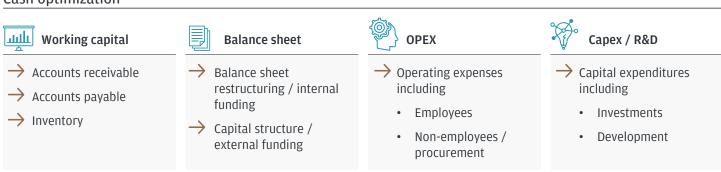
04 Conclusion

In a global business environment that continues to evolve under uncertainties and opportunities, China's corporates need to stay alert to address a multitude of issues including risk management, financing, and supply chain flexibility.

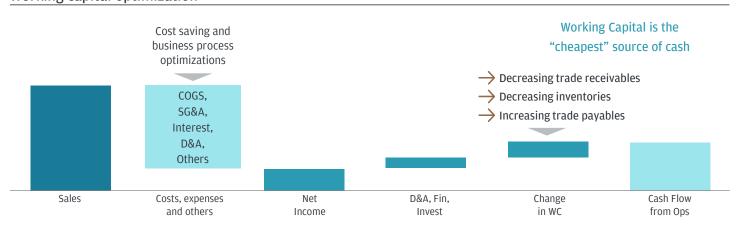
The year 2021 marked the initiation year for China's "14th Five-Year Plan". Following the recovery period in the second half of 2020, China's GDP growth rate reached double digits in early 2021 before the momentum subsided later that year. With repeated rounds of global pandemic outbreaks, the emergence of new virus variants, global supply chain disruptions, oil price fluctuations and geopolitical tensions, Chinese businesses are constantly facing significant challenges. These underlying trends in global and domestic economy growth and business dynamics are presenting both challenges and opportunities to treasury management practitioners in Chinese enterprises.

Treasury plays a crucial role in ensuring resilient business operations against various risks and uncertainties, while helping to sustain investments for achieving future growth. At the same time, business groups in China would benefit from the transformation of treasury management infrastructure and digitalization. With the evolution of technology and increased digitalization, business systems and financial and treasury systems will be more connected and integrated. A comprehensive and efficient treasury management mechanism as well as a customized set of treasury strategies will create tremendous value for corporates in China.

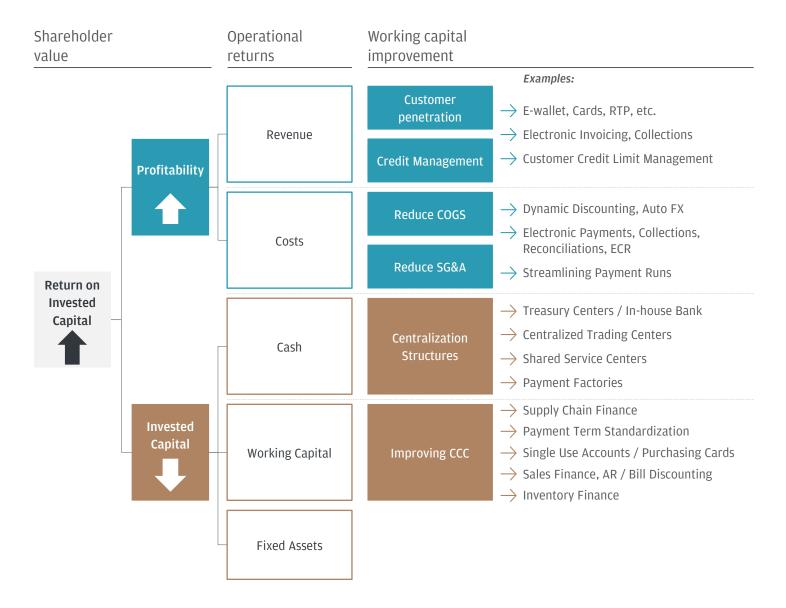
Cash optimization



Working capital optimization



While treasurers will take varied paths for business growth in 2022, we expect cash and working capital optimization to remain a key priority. With over US\$330 billion in optimization potential within working capital management, there is good opportunity for Chinese enterprises to identify more cost-efficient funding. This funding can either provide an adequate liquidity cushion for businesses waiting to navigate through times of turbulence, or support growth for companies achieving strong recovery and looking to further develop and expand their domestic and international businesses, which creates more value to shareholders.



05

Summary of Findings



In a global business environment, which continues to evolve under new uncertainties and opportunities, China's corporates need to stay on the alert to address a multitude of issues



For 2021, China continued its journey of economic recovery from the pandemic from 2H2020, yet the momentum was disrupted. With multiple headwinds affecting the economy, businesses in China were faced with more challenging operational environment in 2021 and need to build resilience and readiness for the road ahead



Compared to U.S. multinationals, Chinese companies in general have a **17.3-day longer CCC** and a **17.3-percentage-point higher cash level**



Tier 1 sized companies have a 39.9-day advantage in CCC performance vs. Tier 2 sized counterparts



China recovered from the pandemic half a year earlier than the rest of the world, driving Working Capital Index down quickly by 2020 for Chinese companies, before it rose back in 2021



Looking ahead, some sectors in China (airlines, auto & auto parts and software) are expecting more challenges in 2022 with dampening outlook

\$335 BILLION

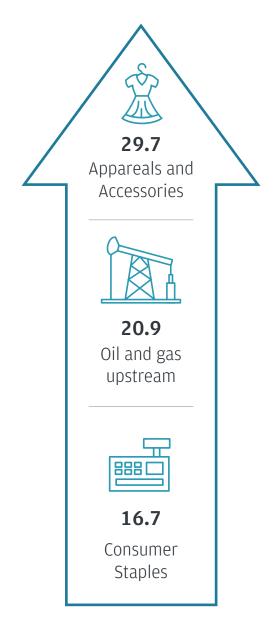
Estimated working capital that can be released across sectors

Top three industries showing deterioration in CCC in 2021

(Number of days the CCC lengthened by)

Technolgy hardware 13.7 **Utilities** 22.8 Semiconductor Top three industries showing improvement in CCC in 2021

(Number of days the CCC shortened by)

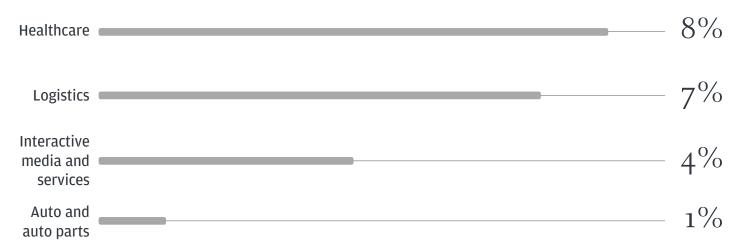




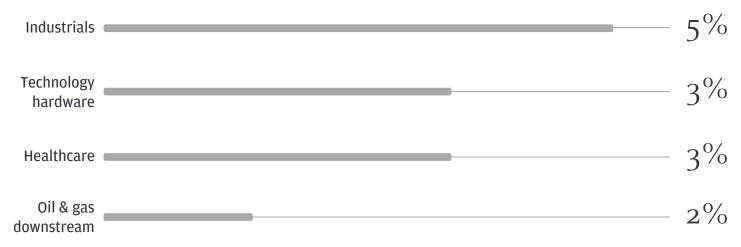
of Chinese companies saw extension in CCC of which:

- 49% showed a expanded DSO
- 63% experienced increased in DIO
- 77% presented a decreased DPO

Top four industries with the highest rise in cash levels in 2021:



Top four industries with fastest rise in working capital levels in 2021:



Source: Capital IQ

06 Authors



Gourang Shah
Global Head of Treasury and SSC Optimization
J.P. Morgan Payments
gourang.shah@jpmorgan.com



Jasmine Tan
Head of Payments Advisory, Asia Pacific
J.P. Morgan Payments
jasmine.tan@jpmchase.com



Becky Chen
Advisor, Payments Advisory, Asia Pacific
J.P. Morgan Payments
becky.chen@jpmorgan.com



Shilling Zhang
Senior Analyst, Payments Advisory Research & Analytics
J.P. Morgan Payments
shilling.xl.zhang@jpmorgan.com

J.P.Morgan

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