

Special Report

Macro Signals From Corporate Balance Sheets Around The World

Listen to a short summary of this report

In this Issue

- 03 **How Thin Is The Ice?**
- 03 **Insight #1: The US Will Play A Central Role In Pulling The Global Economy Out Of The Next Recession**
- 07 **Insight #2: Short-Term Debt Build-Up In China Is A Risk**
- 10 **Insight #3: Japan Inc: Looking Resilient**
- 11 **Insight #4: An Unusually Large Share Of Euro Area Assets Are Intangible**
- 13 **Investment Conclusions**

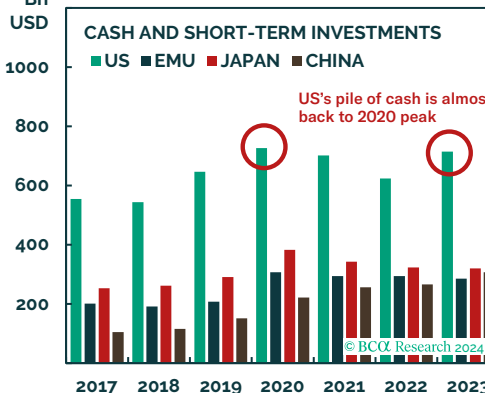
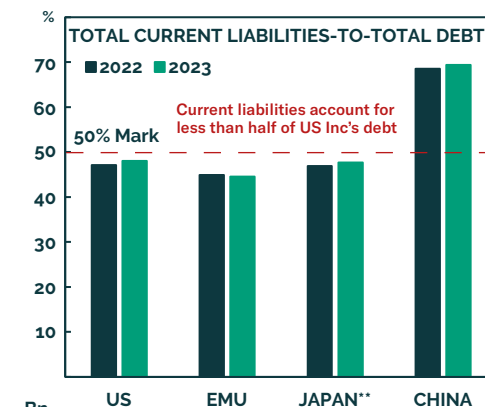
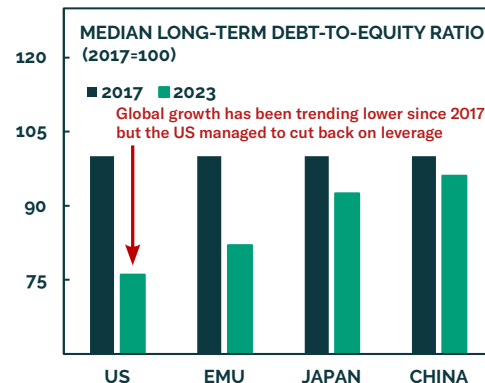
Editorial Board

- Peter Berezin**
Chief Global Strategist
- Ritika Mankar, CFA**
Editor/Strategist
- Melanie Kermadjian**
Senior Analyst
- Miroslav Aradski**
Editor/Strategist
- Lucas Laskey, CFA**
Associate Vice President
- Chanhyuck Lee**
Research Analyst
- Saifali Lokhandwala**
Research Associate
- Allen Li**
Research Associate
- Garry Evans**
Chief Global Asset Allocation Strategist

Executive Summary

- Global equity markets are skating on thin ice. Besides being severely overvalued, we also worry that a recession may be around the corner.
- Against this backdrop, we check in on the balance sheet health of large, listed nonfinancial firms around the world.
- We do so because while the recession can be timed using macro frameworks, the region-wise impact will be influenced by company-level vulnerabilities.
- Our analysis suggests that US corporates are poised to play a central role in pulling the global economy out of the next recession. This is thanks to US corporates generally having strong balance sheets, with many holding large war chests of cash.
- Euro area corporates could end up playing a supporting role when it comes to reviving global growth. This is because European balance sheets are far less geared today than they were a few years ago and Europe’s short-term debt is modest too.
- The main risk that Europe must contend with is a potential fall in the value of intangible assets – a risk which is nontrivial given that these assets account for about a third of the region’s assets.
- Japan’s investment case looks strong because top Japanese corporations’ balance sheets exhibit no major red flags while the underlying economy is on the mend.
- Lastly, we worry that China will underperform. Access to capital will dry up once the recession arrives – a factor that could adversely affect certain Chinese corporates since bank lending is already slowing, many Chinese corporations are neck deep in debt, and a large part of this debt is maturing soon.

US Corporates: Poised To Outperform During The Next Recession



* SUM OF CURRENT AND NON-CURRENT LIABILITIES
** JAPAN DATA IS BASED ON 2021 AND 2022.
SOURCE: REFINITIV.
NOTE: BASED ON DATA OF COMPANIES THAT CONSTITUTE 40% OF THE COUNTRY'S MSCI INDEX. DATA FOR 2023 IS ESTIMATED FOR COMPANIES THAT HAVE NOT RELEASED THEIR 2023/24 BALANCE SHEETS.

Bottom Line: The health of corporate balance sheets will play an important role in determining the magnitude of the next recession. From this perspective, large nonfinancial companies in the US and Japan appear most resilient (in that order), Europe is less resilient, and China is the least resilient of all.

Macro Signals From Corporate Balance Sheets Around The World

Dear Client,

This week we are sending you a Special Report from my colleague Ritika Mankar. Ritika takes a deep dive into the balance sheets of top-listed firms around the world to see how investors can protect themselves from the next recession.

Best regards,

Peter Berezin

Chief Global Strategist

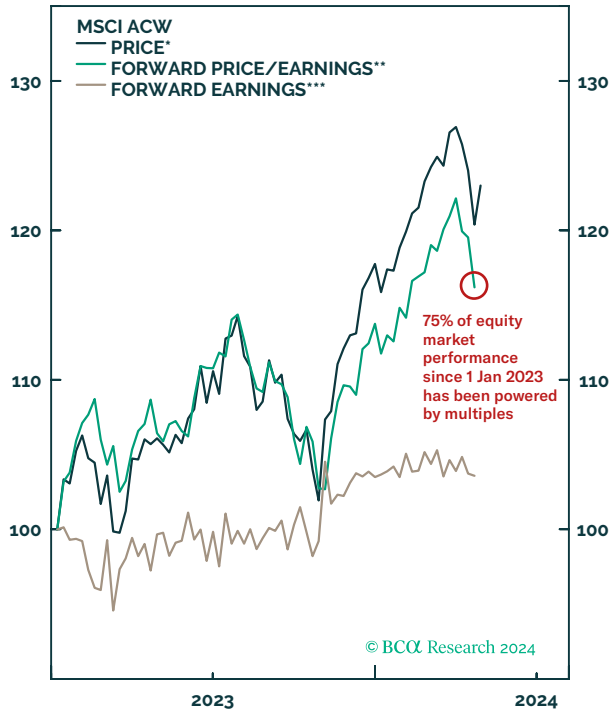
A US recession was widely expected at the beginning of last year, but never arrived. Since then, global equities have rallied by 29% in US dollar terms, outperforming global hedged 7-to-10-year government bonds by 23%.

We worry, however, that equities may soon begin to underperform bonds for two sets of reasons. Firstly, our kinked Phillips curve framework is predicting that [a recession may be around the corner](#). This framework has been very helpful in the recent past – it predicted both the inflationary surge of 2022 and the immaculate disinflation of 2023.

Secondly, equity market valuations today rest on questionable foundations. Earnings growth has accounted for a small fraction of the stock market's gains since the beginning of 2023, with a multiple re-rating being the driving force behind this rally (**Chart 1**). As a result, equity markets today are at the most extreme level of overvaluation seen since the early 2000s.

With global equity markets visibly skating on thin ice, in this *Special Report* we identify the strengths and weaknesses of key regional equity markets using a balance-sheet approach. We see merit in this approach because while the recession can be timed using macro frameworks, the region-wise impact will be influenced by company-level vulnerabilities.

CHART 1
**Global Equity Performance Of Late:
Powered Less By Earnings, More By Multiples**



* SOURCE: MSCI INC. (SEE COPYRIGHT DECLARATION).
 ** SOURCE: REFINITIV / IBES.
 *** FORWARD EARNINGS IS CALCULATED AS
 PRICE INDEX / FORWARD PRICE-EARNINGS.
 NOTE: ALL SERIES ARE REBASED TO JANUARY 2023 = 100.

- We examined the balance sheets for each of these 81 firms over the last ten years. We then extracted data on balance sheet line items that have macro implications such as the value of a company's debt relative to its equity. To gain even deeper insight, we also extracted information tucked in the footnotes of balance sheets such as, say, what proportion of a company's long-term debt is maturing in the short term.
- Finally, we aggregated firm-level data into four regional buckets (the US, EMU, Japan, and China), and carefully compared signals generated by this bottom-up dataset with that provided by our macro frameworks.

The goal of these bottom-up checks is to uncover insights that asset managers can leverage to inform their regional equity allocation calls.

Below, we present the key insights that emerged from these checks.

| How Thin Is The Ice?

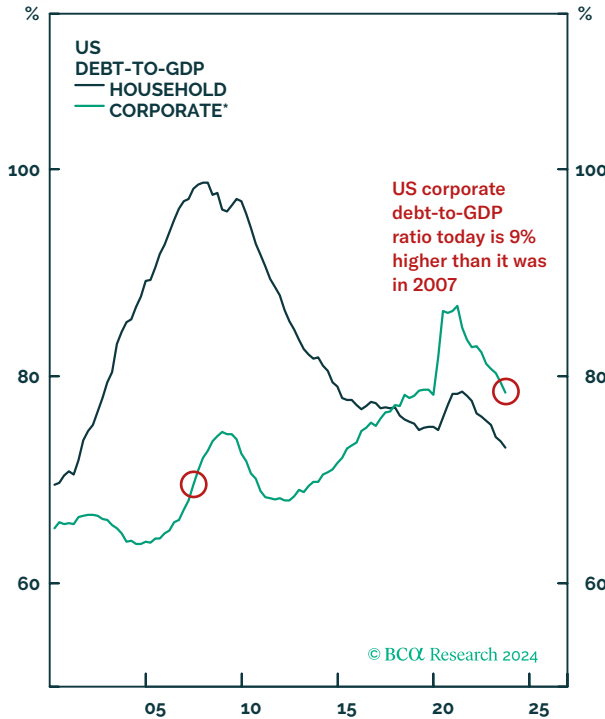
We followed a three-step process to examine corporate balance-sheet health. Specifically:

- First, we employed a sample approach that zeroed in on large nonfinancial firms that together account for around 40% of the weight of the MSCI US, euro area (EMU), Japan, and China indices. This produced a sample of 81 listed nonfinancial firms that we used as indicators of global corporate health.

| Insight #1: The US Will Play A Central Role In Pulling The Global Economy Out Of The Next Recession

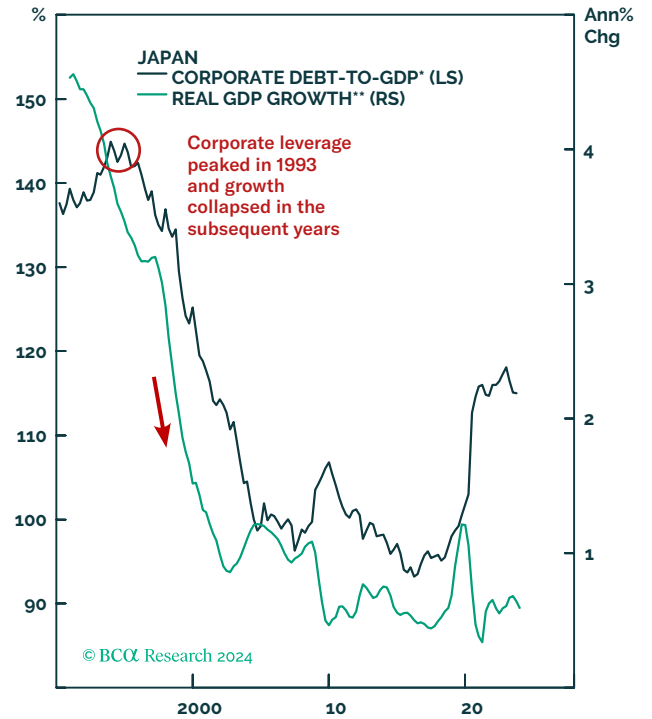
We noted above that the US economy will likely slip into recession by early 2025. But what will the shape of this recession be? Will this be a short and shallow recession or a prolonged one?

CHART 2
The US Corporate Debt-To-GDP Ratio Appears Stretched But Can Expand



* DENOTES NONFINANCIAL CORPORATE DEBT.
SOURCE: BANK FOR INTERNATIONAL SETTLEMENTS.

CHART 3
Corporate Indebtedness Was A Powerful Leading Indicator In The 1990s



* NONFINANCIAL CORPORATE DEBT.
SOURCE: BANK FOR INTERNATIONAL SETTLEMENTS.
** SHOWN AS 10-YEAR MOVING AVERAGE.
SOURCE: CABINET OFFICE, JAPAN.

As the largest economy in the world, the extent of private-sector indebtedness in the US serves as a good starting point for answering this question. Today, US households have space to take on more leverage, but the debt-to-GDP ratio of US corporates appear to be overstretched (**Chart 2**). Given that corporates can be canaries in the coal mine, it is tempting to conclude that the next recession will be a lengthy one based on this macro data point. After all, Japan's corporate debt-to-GDP ratio peaked in 1993 and economic growth collapsed in the subsequent decade (**Chart 3**).

While corporate sector debt-to-GDP ratios have historically proved to be a useful gauge, this metric is not as effective as before because today, companies can also use equity capital to fund growth. The global market capitalization of listed companies has risen from 56% of GDP in 2008 to 107% in 2022. Even if an economy's corporate debt-to-GDP ratio is high, listed firms can still take on more debt as long as there is enough equity on the table.

Another reason why corporate debt-to-GDP is not a good measure of corporates' ability to take on more debt is because this metric

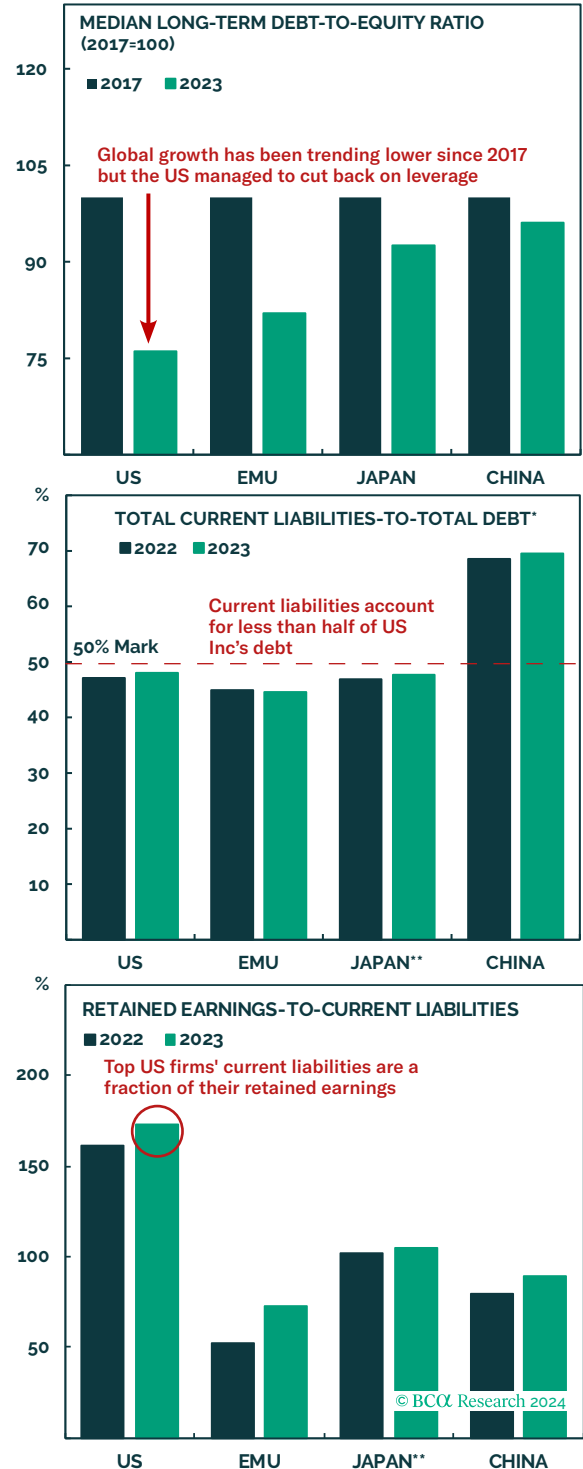
fails to take into account the maturity profile of debt. If short-term debt accounts for an unusually large share of a company's debt, then even if the headline corporate debt-to-GDP ratio is low, the firm may struggle to roll over its debt.

For these reasons, a singular focus on top-down corporate indebtedness can lead to inaccurate conclusions. To get an early sense of whether corporates can take on more debt and fire up economic growth, macro data ought to be supplemented with bottom-up inputs.

Throwing in balance sheet data into the corporate indebtedness equation makes it clear that the US will play an important role in ensuring that the next recession is a comparatively mild one. This is because even though global growth peaked in 2017, top US corporates have been able to lower their debt-to-equity ratio over the last seven years (**Chart 4**). Furthermore, the short-term debt component of top US corporates' debt is modest (more about this in **Insight #2**).

Looking back at the last few years, 2021 marked a break from the past as access to long-term debt dried up and equity capital became king (**Chart 5**). In this equity dominated market, US firms managed to account for the lion's share of the increase in the value of shareholders' equity. US corporates managed to grow the book value of their equity, despite heavy buybacks, largely thanks to the steady flow of profits which enriched equity through higher retained earnings.

CHART 4
Top US Corporates Have Cut Back On Gearing, Short-Term Debt Is Manageable Too



* SUM OF CURRENT AND NON-CURRENT LIABILITIES.
** JAPAN DATA IS BASED ON 2021 AND 2022.
SOURCE: REFINITIV.
NOTE: BASED ON DATA OF COMPANIES THAT CONSTITUTE 40% OF THE COUNTRY'S MSCI INDEX. DATA FOR 2023 IS ESTIMATED FOR COMPANIES THAT HAVE NOT RELEASED THEIR 2023/24 BALANCE SHEETS.

CHART 5
Top US Corporates Have Healthy Amounts Of Equity On Their Books

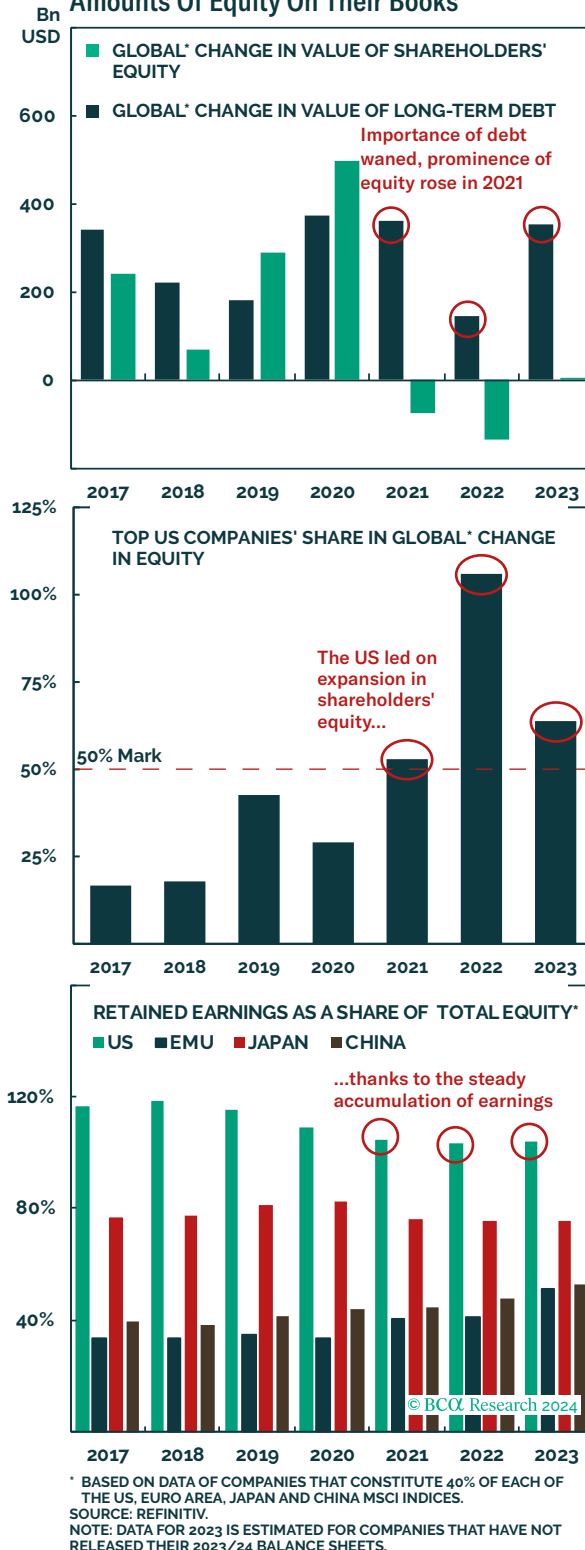
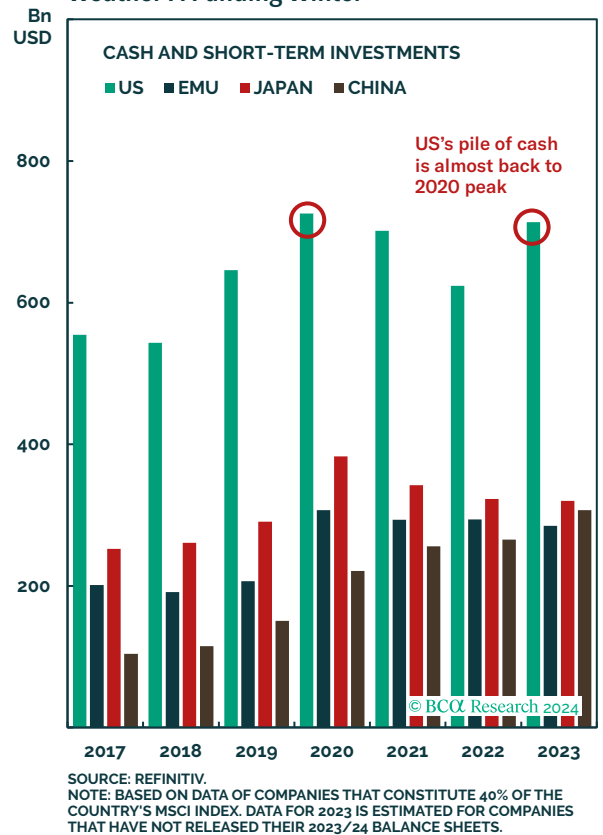


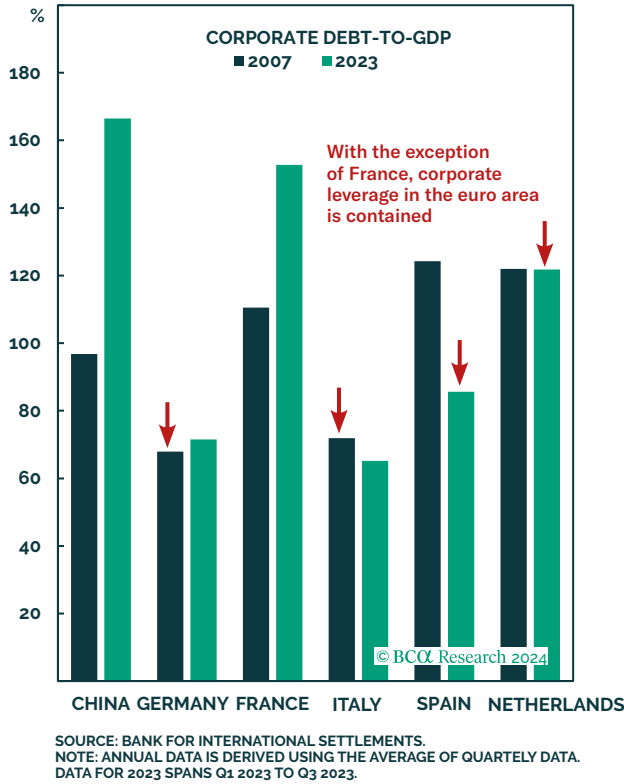
CHART 6
US Corporates Have Adequate Dry Powder To Weather A Funding Winter



Distinct from the above stated factors, another factor that should ensure that US firms can weather the coming recession with relative ease is the fact that US corporates today have a war chest of cash. Top US firms' cash levels peaked in 2020, then declined slightly in the following two years, and are now back to being in the pink of health (**Chart 6**).

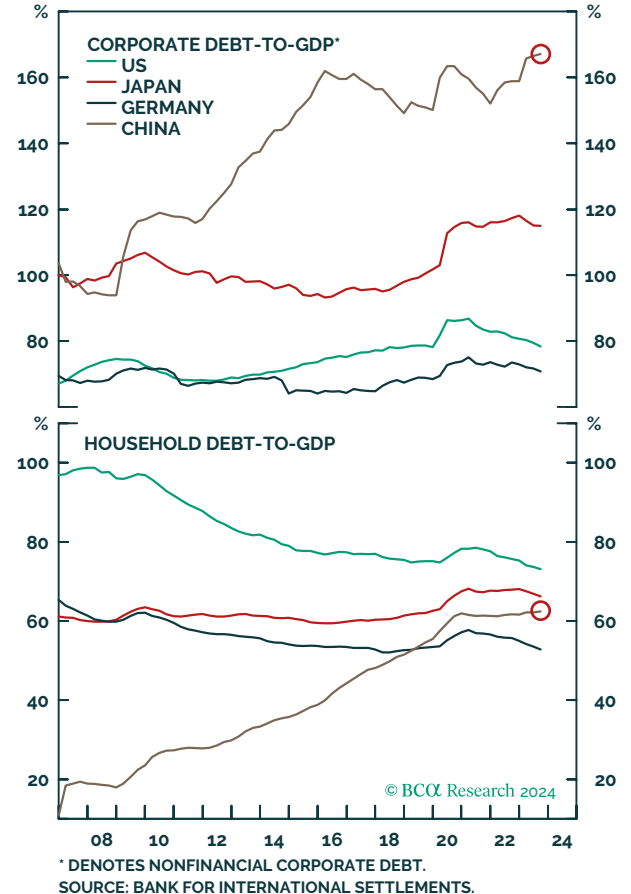
Given that the US recovery is likely to be propelled by both the corporate and household sector engines firing, the US should be able to catalyze a turn in the business cycle relatively swiftly.

CHART 7
Unlike China, The Euro Area's Corporate Sector Is Not Overextended



Across the Atlantic, top euro area firms have been able to bring down their gearing, albeit to a lesser extent than their American counterparts. Furthermore, except for France (where debt may be overstated due to unique reporting norms), the corporate debt-to-GDP ratios for most major euro area economies are nowhere close to being too stretched today (**Chart 7**). This should mean that when the next recession arrives, US Inc. will emerge as the protagonist when it comes to reviving global demand, with euro area corporates set to play a supporting role.

CHART 8
China Is More Indebted Today Than It Was In 2007 As Well As 2019



Insight #2: Short-Term Debt Build-Up In China Is A Risk

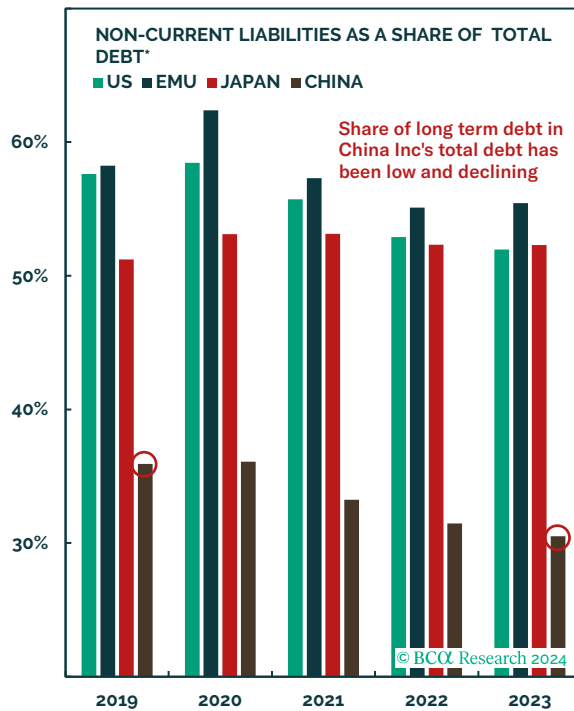
A year before the pandemic, China's corporate debt-to-GDP ratio stood at an eye-watering 152%. This led many investors to conclude that China's corporate debt was maxed out and was unlikely to be able to support aggregate demand in a big way from this point on. But the reality turned out to be different. China's corporate sector proved to be an important source of economic growth, with China's corporate debt-to-GDP ratio rising to 167% last year. So, can China Inc yet again take on more debt and save the day?

This appears unlikely for two sets of reasons. Firstly, both China’s households and corporates are more indebted today than they were in 2007 and 2019 (**Chart 8**). Moreover, among corporates, a notably high proportion of debt is in the form of ‘current liabilities’ i.e., liabilities that are due to be paid within one year (**Chart 9**). China’s current liabilities have been growing and their quantum today exceeds China’s non-current liabilities by a wide margin. This is in sharp contrast to other key markets where the value of current liabilities on average is lesser than the value of non-current liabilities.

Distinct from elevated levels of short-term debt, we also found that the proportion of debt maturing over the next two-to-three years is on the higher side for several large Chinese firms (**Chart 10**). While disclosure on this variable is patchy, the data that exist suggest that top Chinese corporates may be at the higher end of this spectrum.

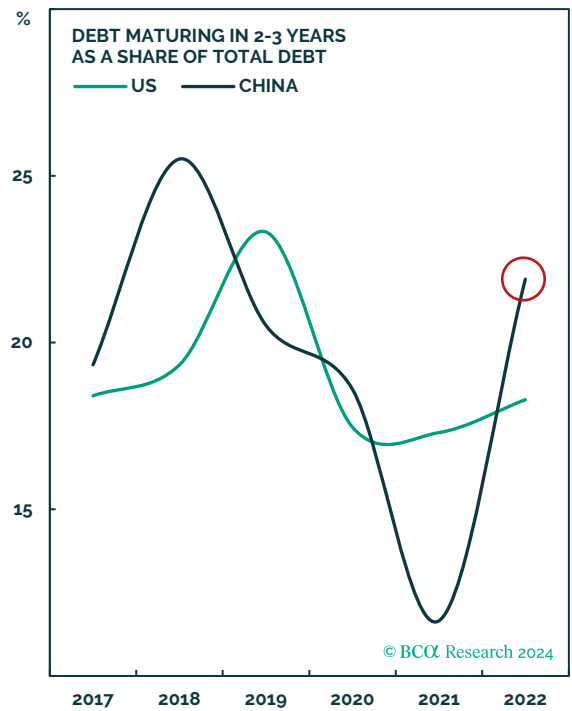
While Chinese corporates do have high levels of equity on their balance sheets, their leverage ratios have not seen an improvement as is the case with the US or euro area. Also, while China Inc has a reasonable amount of cash on its balance

CHART 9
Macro Data Conceals China Inc's High Reliance On Short-Term Debt



* SUM OF CURRENT AND NON-CURRENT LIABILITIES.
SOURCE: REFINITIV.
NOTE: BASED ON DATA OF COMPANIES THAT CONSTITUTE 40% OF THE COUNTRY'S MSCI INDEX. DATA FOR 2023 IS ESTIMATED FOR COMPANIES THAT HAVE NOT RELEASED THEIR 2023/24 BALANCE SHEETS.

CHART 10
China Inc: Debt Due In The Medium Term Is On The Higher Side



SOURCE: REFINITIV.
NOTE: BASED ON DATA OF COMPANIES THAT CONSTITUTE 40% OF THE COUNTRY'S MSCI INDEX. DATA ON THIS VARIABLE IS VERY PATCHY HENCE COUNTRY-LEVEL VALUES ARE CALCULATED BY USING THE MEDIAN OF AVAILABLE VALUES IN A GIVEN YEAR.

sheets, an unusually high share is parked in short-term investments.

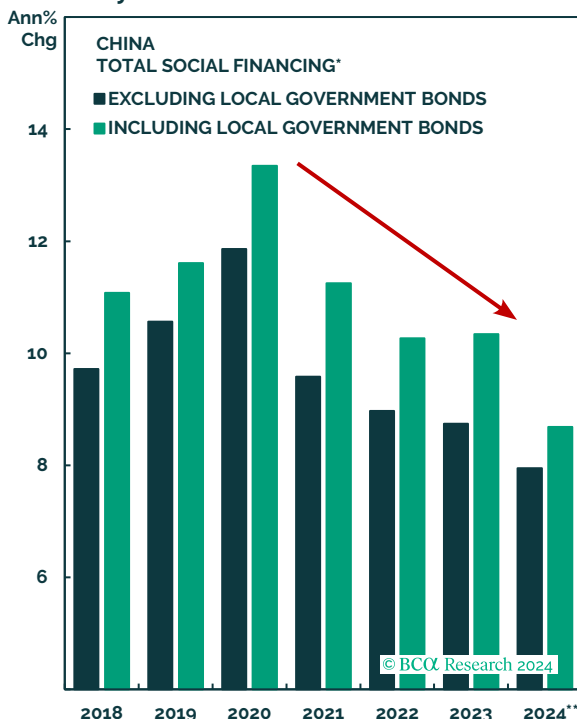
Secondly, back in 2019, long-term capital was more accessible for China Inc. This was thanks to both a buoyant stock market up until 2021 and forthcoming policy support.

China's corporate sector consists of two types of firms: Large state-owned enterprises (SOEs) that rely on cheap bank financing from state-owned banks; and more nimble private firms, some of the largest of which are in the tech sector. The latter benefited from a major increase in the book value of their equity from 2019 to 2021. The cumulative shareholder equity held by top Chinese firms expanded by about 70% over 2019-2021 with Alibaba,

Tencent, and JD.com being the prime drivers of this change. SOEs on the other hand benefited from state-owned banks being supportive of debt rollovers. The supportive policy environment meant that growth in total social financing (excluding local government bonds) in China picked up from 10.6% year-on-year in 2019 to 11.9% by 2020 (**Chart 11**).

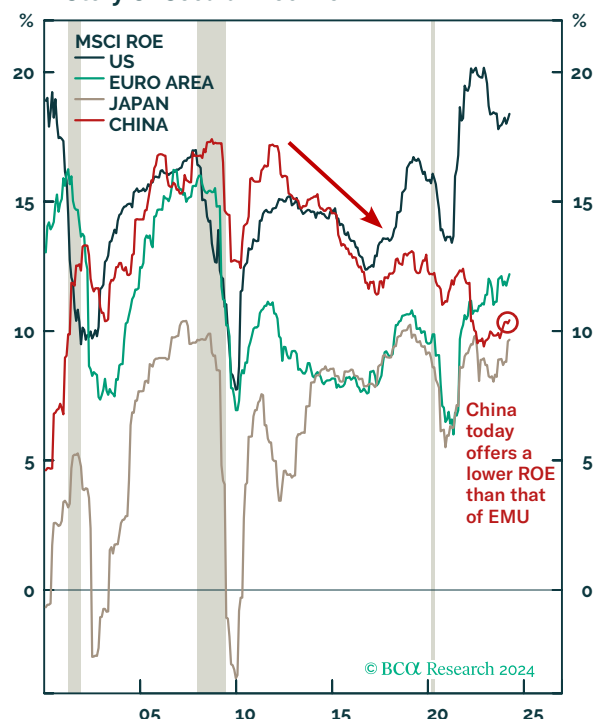
Today, things are different. The Chinese stock market is no longer booming, and profits will come under pressure when a recession arrives. The Chinese authorities also have become increasingly uncomfortable with state-owned banks hastily rolling over debt. Instead, the Chinese government is in favor of workouts

CHART 11
Chinese Banks Are Lending At A Slower Pace Today



* EXCLUDING EQUITY FINANCING.
** 2024 IS BASED ON 3-MONTH ANNUALIZED CHANGE OF SEASONALLY ADJUSTED SERIES.
SOURCE: BCA CALCULATIONS.
NOTE: ANNUAL DATA BASED ON YEAR-END VALUES.

CHART 12
China's Return On Equity Post-GFC:
A Story Of Secular Decline



SOURCE: MSCI INC. (SEE COPYRIGHT DECLARATION).
NOTE: SHADED AREAS DENOTE NBER-DESIGNATED RECESSIONS.

and restructuring of bad debt. This is partially the reason why financing growth (excluding local government bonds) has dropped from 11.9% year-on-year in 2020 to 8.0% YTD in 2024.

Turning back to the macro view, economic strain in China over the next 12-to-24 months is likely to be meaningful. This is because not only are Chinese corporates overstretched, China's households also have been deleveraging for the last two years – a dynamic that could pose a [significant challenge](#).

At the market level, return prospects for equity investors look uninspiring as well. China's return on equity (ROE) has been systematically trending lower since the GFC and today is even lower than that of EMU (**Chart 12**). And yet, there is limited visibility around how China's ROE can improve.

The ROE of a market is the product of its net profit margins, asset turnover, and financial leverage. Against the backdrop of persistent [deflation](#) and slowing demand, it is difficult to expect the former two elements that constitute ROE to improve dramatically. This means that higher leverage is the only lever that can drive China's ROE higher. But as highlighted in this section earlier, any further increase in corporate leverage could portend liquidity risks when the economy is slowing.

Another risk that equity investors in China must contend with is the risk of dilution. Historically, retained earnings and equity capital issuance have been the two main constituents of shareholder equity in China. If economic growth in China slows, the role

of retained earnings in powering equity will wane which, in turn, could necessitate the issuance of more equity.

Historically, our Global Asset Allocation service notes that even though China experienced an economic miracle over the last two-and-a-half decades, the country has made for a poor investment due to [extreme rates of equity issuance](#).

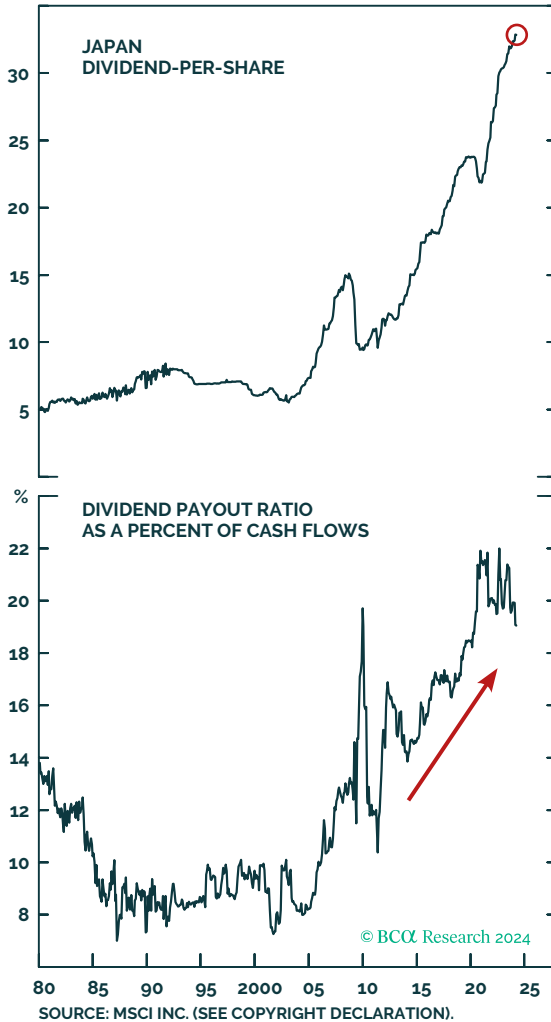
Insight #3: Japan Inc: Looking Resilient

Notwithstanding the issue of equity crossholdings in Japan, Japan's top corporates have managed to reduce their debt-equity ratios from 2017 until now, i.e., a period over which global growth has been trending lower. Furthermore, the share of current liabilities in Japan's debt mix is low.

Much like the US, Japan Inc is cash-rich too. To be fair, Japan has always had a reasonable stockpile of cash, but the difference lies in the fact that today, this cash no longer represents a deadweight. This is thanks to the fact that growth in this beleaguered economy is on the mend which creates avenues for the productive use of this cash. Also, corporate governance reforms are afoot in Japan which could boost dividends, thereby adding to total returns (**Chart 13**).

With bottom-up checks indicating that Japan Inc's balance sheets are not too geared, and with top-down data suggesting that Japan's releveraging cycle has just begun anew, certain Japanese corporations could emerge as a port in the storm when the next recession arrives (**Chart 14**).

CHART 13
Cash In Japan Has More Value Today



Insight #4: An Unusually Large Share Of Euro Area Assets Are Intangible

The developed world's transition from manufacturing-centric economies to those dominated by services has been accompanied by a structural increase in intangible assets (Chart 15). Cyclically speaking, the surge in M&A activity following the pandemic may have added to this trend, given that the price paid to acquire a company in excess of its book value ends up

CHART 14
Corporate Releveraging In Japan Has Just Begun

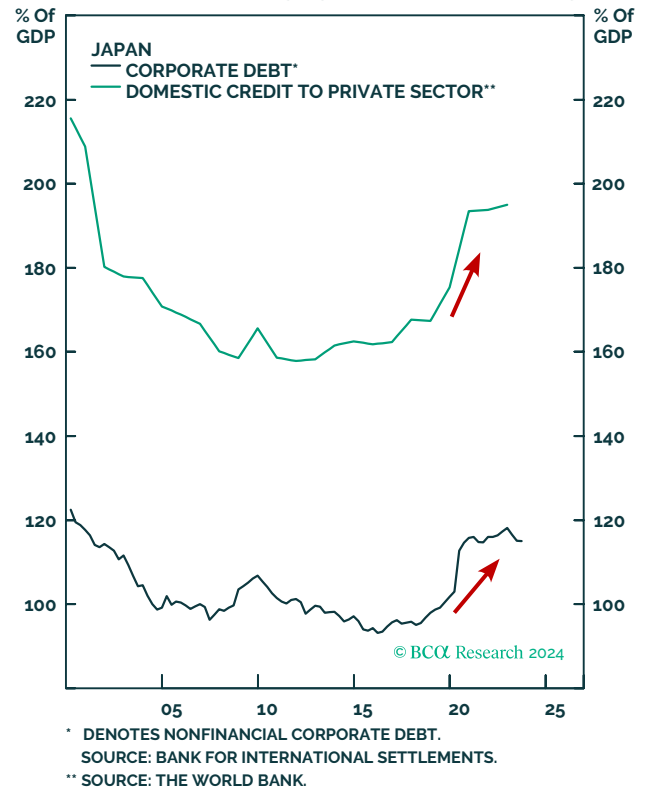


CHART 15
The 2000s Saw A Structural Increase In Intangible Assets

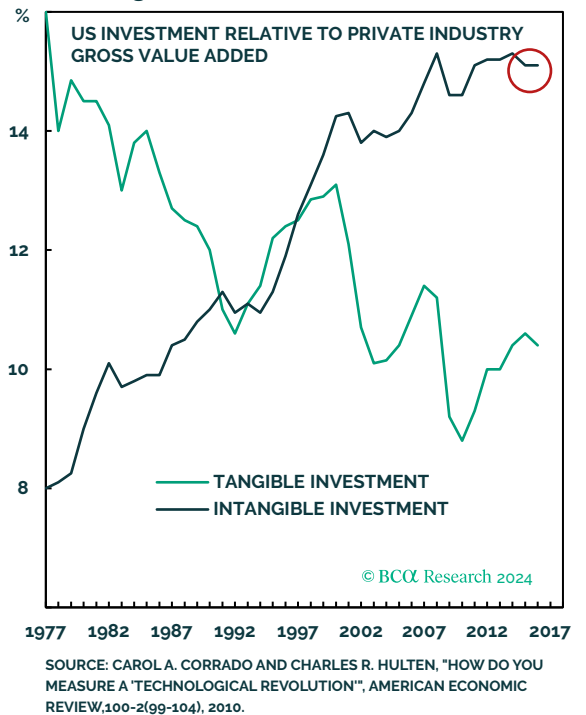
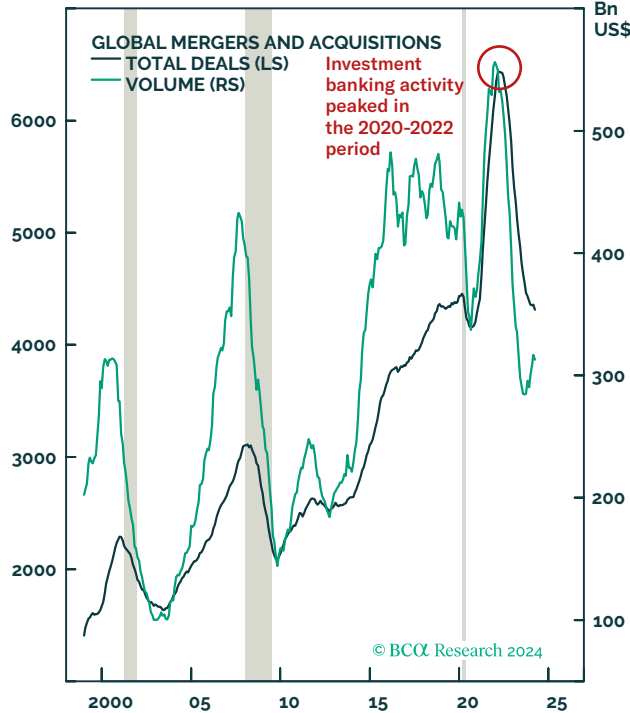


CHART 16
The Recent Surge In M&A Activity May Have Added To Intangibles Too



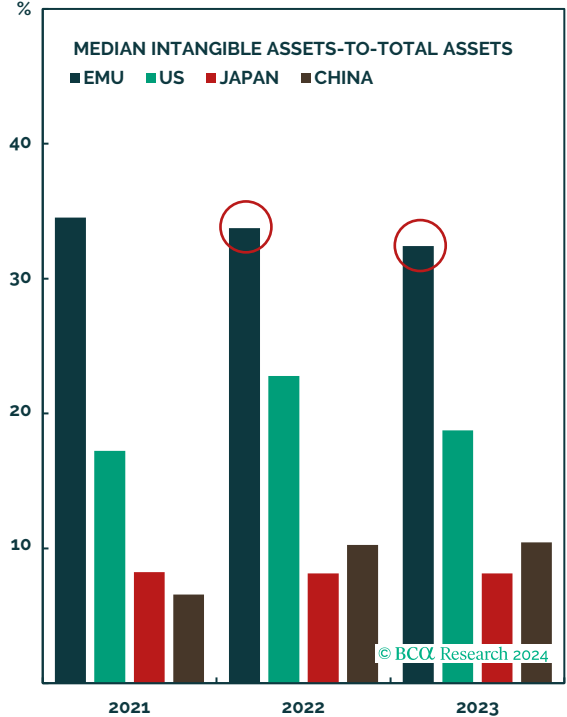
SOURCE: BLOOMBERG FINANCE L.P.
NOTE: BOTH SERIES SHOWN AS A 12-MONTH MOVING AVERAGE. SHADED AREAS DENOTE NBER-DESIGNATED RECESSIONS.

being recorded as an intangible asset of the acquiring firm (Chart 16).

While intangible assets usually generate genuine value, global corporate history is replete with examples of such assets suddenly losing value when a recession arrives. Furthermore, there is some evidence suggesting that impairment charges are most likely to surge a few years after an investment banking boom.

The service-centric nature of Western economies has always meant that the relative value of ‘assets that cannot be seen’ is higher on both sides of the Atlantic.

CHART 17
Europe Inc Has An Unusually Large Pile Of Intangible Assets



SOURCE: REFINITIV.
NOTE: BASED ON DATA OF COMPANIES THAT CONSTITUTE 40% OF THE COUNTRY'S MSCI INDEX. DATA FOR 2023 IS ESTIMATED FOR COMPANIES THAT HAVE NOT RELEASED THEIR 2023/24 BALANCE SHEETS.

However, euro area stocks present an extreme case: Intangible assets account for nearly a third of top-listed euro area companies' total assets (Chart 17). Intangibles, on the other hand, account for only a fifth of the total assets of top-listed US firms today.

While a high value of assets locked in the form of intangibles is not a sufficient condition for a market to be hit harder by a recession, the fact that almost a third of the value of total assets in Europe is locked in intangible assets presents a notable red flag.

Investment Conclusions

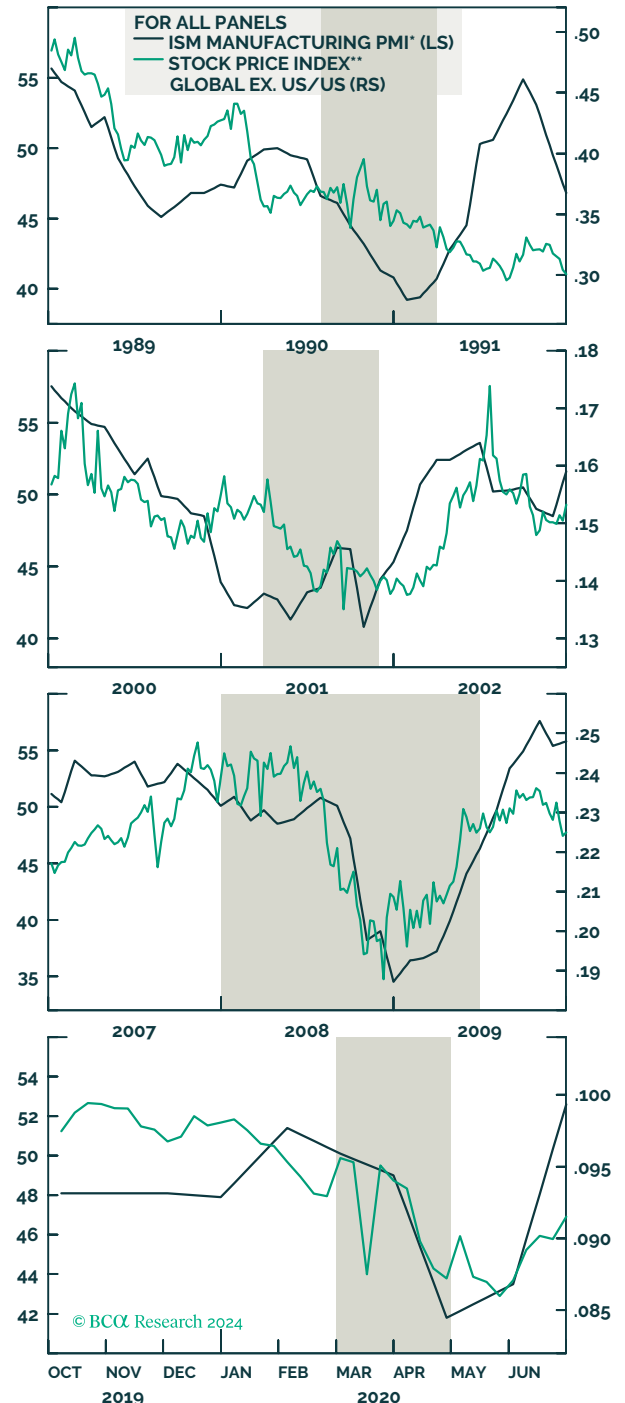
From a top-down perspective, the empirical evidence shows that US stocks typically outperform their non-US peers during recessions (**Chart 18**). This can be attributed to the fact that defensive sectors have a higher weighting in the US and because the greenback typically strengthens during recessions.

That said, we have been of the view that while US equities will outperform during the next recession, the extent might not be that meaningful. US stocks may not outperform by as much as they have in the past due to their relatively frothy valuations today and because the US dollar will not strengthen much if the recession is a mild one.

In the context of regional equity allocation, four key points emerge from our analysis of balance sheets of large listed firms:

- **US:** When the next recession arrives (which in our view is most likely by early 2025), US equities appear to be best positioned to weather the storm that ensues. Besides the significant build-up of equity on the books of US firms, the war chest of cash held by US corporates will insulate them from the tightening in credit conditions that typically occurs during recessions.
- **China:** On the other hand, China presents multiple macro and micro risks. Distinct from the corporate debt-to-GDP ratio being elevated, the fact that a large proportion of Chinese firms' liabilities are due over the short term is a major red flag.

CHART 18
US Stocks Tend To Outperform During Recessions

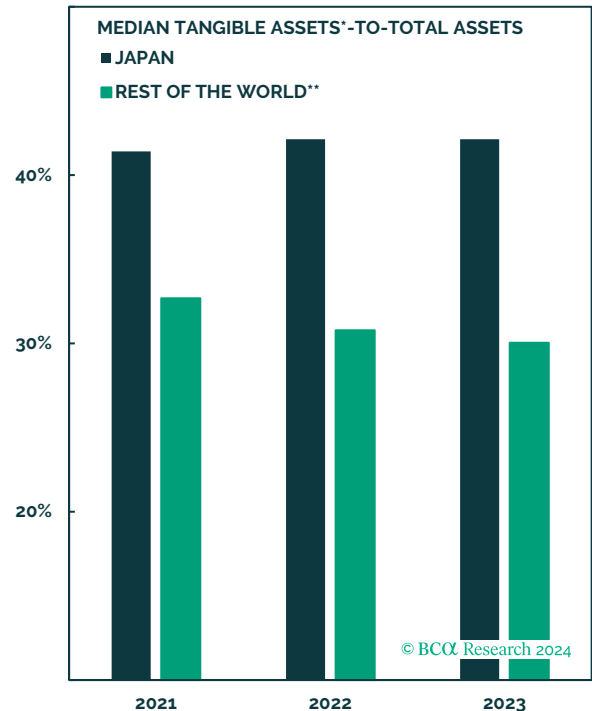


* SOURCE: INSTITUTE FOR SUPPLY MANAGEMENT.
** IN US DOLLARS. SOURCE: MSCI INC. (SEE COPYRIGHT DECLARATION).
NOTE: SHADED AREAS DENOTE NBER-DESIGNATED RECESSIONS.

- **EMU:** While the euro area stands out for its unusual buildup of intangible assets, the fact that euro area corporates are not excessively loaded up on debt augurs well for euro area equities. Investors should nonetheless track euro area firms with high intangible assets in the run-up to a recession for any signs that these assets are not earnings-generative and are instead symptomatic of corporate excesses.
- **Japan:** Japan's investment case looks strong because it exhibits no major red flags with respect to key balance-sheet parameters that can herald trouble when a recession arrives. Furthermore, investors can draw comfort from the fact that the majority of assets held by Japanese firms today are of the variety that are tangible (**Chart 19**). That being said, Japanese equities are cyclical in nature and a soaring yen could prove to be a headwind for earnings. The Global Investment Strategy service is neutral on Japanese equities over a 6-to-12 month horizon.

Bottom Line: A recession is likely to arrive over the next 12-to-24 months. Our deep dive into the balance sheets of top-listed firms around the world suggests that corporate health differs substantially across key equity markets.

CHART 19

Japan Inc Boasts A Large Base Of Tangible Assets

* DEFINED AS NON-CURRENT ASSETS MINUS INTANGIBLE ASSETS.

** MEDIAN OF MSCI US, EMU AND CHINA.

SOURCE: REFINITIV.

NOTE: BASED ON DATA OF COMPANIES THAT CONSTITUTE 40% OF THE COUNTRY'S MSCI INDEX. DATA FOR 2023 IS ESTIMATED FOR COMPANIES THAT HAVE NOT RELEASED THEIR 2023/24 BALANCE SHEETS.

The health of corporate balance sheets will play an important role in determining the magnitude of the next recession. From this perspective, large nonfinancial companies in the US and Japan appear most resilient (in that order), Europe is less resilient, and China is the least resilient of all.

Ritika Mankar, CFA

Editor/Strategist

ritika.mankar@bcaresearch.com

Archive Of Previous Reports – Global Investment Strategy

Please click on the links below to view reports:

1. [Commodities Stand On Shaky Ground - April 18, 2024](#)
2. [The Mel Rule Says A US Recession Is Already Baked In The Cake - April 11, 2024](#)
3. [MacroQuant Model Update: MacroQuant's Equity Score Dips Below Average For The First Time In 12 Months - March 28, 2024](#)
4. [Second Quarter 2024 Strategy Outlook: Balancing Act - March 26, 2024](#)
5. [What Is Sweden Telling Us About The Global Cycle? - March 20, 2024](#)
6. [And The Winner Is... - March 14, 2024](#)
7. [The "Gratuitous" 1994 Fed Tightening Cycle Is A Bad Analogue For Today - March 7, 2024](#)
8. [A Potential Second Trump Presidency: Bullish or Bearish? - February 29, 2024](#)
9. [MacroQuant Model Update: Still Dancing - February 29, 2024](#)
10. [Chilling With The Maytag Repairman - February 22, 2024](#)
11. [The Coming Seinfeld Recession - February 15, 2024](#)
12. [The US Consumer: The Last Domino To Fall? - February 8, 2024](#)
13. [Making Money With Macro: Introducing MacroQuant 2.0 - January 30, 2024](#)
14. [These Labor Market Indicators Are Pointing To A Hard Landing - January 19, 2024](#)
15. [The Global EV Revolution: Mind The Blind Spots - January 12, 2024](#)
16. [The Soft Landing Debate: The Difference Between The Consensus And Us Hinges On One Word - January 4, 2024](#)
17. [What Else To Read - December 12, 2023](#)
18. [Strategy Outlook – 2024 Key Views: Here Comes The Kink - December 8, 2023](#)
19. [The Immaculate Disinflation Of 2023, Explained - November 23, 2023](#)
20. [Watch Taiwan, Not US-China, For Détente - November 17, 2023](#)
21. [Signs Of Cracks In DM Labor Markets - November 10, 2023](#)
22. [Wile E. Coyote And The Twilight Zone Between Boom And Bust - November 2, 2023](#)
23. [Inflation: A Story Of Eras - October 26, 2023](#)
24. [2024: The Year Of The Yen - October 19, 2023](#)
25. [Bonds Are Great Again - October 12, 2023](#)

Global Offices

Main Office

Montreal, Canada

1001 de Maisonneuve West,
Suite 1510
Montreal, Quebec H3A 3C8
Phone +1 888 840 4665
+1 514 499 9550

London, United Kingdom

4 Bouverie Street
London, EC4Y 8AX
Phone +44 0 207 556 6008

New York, United States

1270 Ave of the Americas, 11th Floor
Suite 1100, New York, NY 10020
Office +1 212 224 3300

West Coast, United States

Phone +1 210 219 9924

Hong Kong

12/F, 8 Queen's Road East,
Wan Chai, Hong Kong

Sydney, Australia

Suite 311
3 Spring Street
Sydney 2000
Australia NSW

Singapore

Level 7,
23 Church Street,
Singapore 049481

Shanghai, China

Unit 609, 6/F,
Jin Mao Tower,
88 Century Avenue,
Pudong New District,
Shanghai 200121,
China

Copyright 2024, BCA Research Inc. All rights reserved.

The text, images and other materials contained or displayed on any BCA Research Inc. product, service, report, e-mail or web site are proprietary to BCA Research Inc. and constitute valuable intellectual property. No material from any part of any BCA Research Inc. web site may be downloaded, transmitted, broadcast, transferred, assigned, reproduced or in any other way used or otherwise disseminated in any form to any person or entity, without the explicit written consent of BCA Research Inc. All unauthorized reproduction or other use of material from BCA Research Inc. shall be deemed willful infringement(s) of BCA Research Inc. copyright and other proprietary and intellectual property rights, including but not limited to, rights of privacy. BCA Research Inc. expressly reserves all rights in connection with its intellectual property, including without limitation the right to block the transfer of its products and services and/or to track usage thereof, through electronic tracking technology, and all other lawful means, now known or hereafter devised. BCA Research Inc. reserves the right, without further notice, to pursue to the fullest extent allowed by the law any and all criminal and civil remedies for the violation of its rights.

Non-residents of Canada confirm that they do not, and have never had the right to use any of BCA Research Inc.'s materials in Canada, and agree that they have not and never will use any of the materials in Canada unless they acquire this right by paying the applicable Canadian and Quebec sales taxes. All unauthorized use of the materials in Canada shall be deemed willful infringement of BCA Research Inc. copyright and other proprietary and intellectual property rights.

While BCA will use its reasonable best efforts to provide accurate and informative Information Services to Subscriber, BCA cannot guarantee the accuracy, relevance and/or completeness of the Information Services, or other information used in connection therewith. BCA, its affiliates, shareholders, directors, officers, and employees shall have no liability, contingent or otherwise, for any claims or damages arising in connection with (i) the use by Subscriber of the Information Services and/or (ii) any errors, omissions or inaccuracies in the Information Services. The Information Services are provided for the benefit of the Subscriber. It is not to be used or otherwise relied on by any other person.

Some of the data contained in this publication may have been obtained from Bloomberg Indices; Bloomberg Finance L.P.; MSCI Private Capital Solutions (Not for Redistribution); CBRE Inc.; CEIC data; Copyright © 2024, S&P Global Limited. All rights reserved and all intellectual property rights retained by S&P Global Limited; PitchBook Data, Inc; MSCI Inc. Neither MSCI Inc. nor any other party involved in or related to compiling, computing or creating the MSCI Inc. data makes any express or implied warranties or representations with respect to such data (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such data. Without limiting any of the foregoing, in no event shall MSCI Inc., any of its affiliates or any third party involved in or related to compiling, computing or creating the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. No further distribution or dissemination of the MSCI Inc. data is permitted without MSCI Inc.'s express written consent. Prequin Ltd.; Real Capital Analytics Inc.; Reis Services LLC; Copyright © 2024, S&P Global Market Intelligence (and its affiliates as applicable). Reproduction of any information, opinions, views, data or material, including ratings ("Content") in any form is prohibited except with the prior written permission of the relevant party. Such party, its affiliates and suppliers ("Content Providers") do not guarantee the accuracy, adequacy, completeness, timeliness or availability of any Content and are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, or for the results obtained from the use of such Content. In no event shall Content Providers be liable for any damages, costs, expenses, legal fees, or losses (including lost income or lost profit and opportunity costs) in connection with any use of the Content. A reference to a particular investment or security, a rating or any observation concerning an investment that is part of the Content is not a recommendation to buy, sell or hold such investment or security, does not address the suitability of an investment or security and should not be relied on as investment advice. Credit ratings are statements of opinions and are not statements of fact; Standard and Poor's ("S&P") Copyright © 2024 The McGraw-Hill Companies, Inc., S&P is a division of The McGraw-Hill Companies Inc. All rights reserved; or from Refinitiv, "The Refinitiv Kinesis Logo and Refinitiv are trademarks of Refinitiv and its affiliated companies in the United States and other countries and used herein under license." In addition to the foregoing, Client shall display or print the following notice in the Help About section or in a general attribution page. "Copyright © Refinitiv, 2024. All Rights Reserved. Use, duplication, or sale of this service, or data contained herein, except as described in the BCA Research products subscription agreement, is strictly prohibited."

Important Disclaimer

This communication reflects our analysts' current opinions and may not be updated as views or information change. Past results do not guarantee future performance. Business and market conditions, laws, regulations, and other factors affecting performance all change over time, which could change the status of the information in this publication. Using any graph, chart, formula, model, or other device to assist in making investment decisions presents many difficulties and their effectiveness has significant limitations, including that prior patterns may not repeat themselves and market participants using such devices can impact the market in a way that changes their effectiveness. BCA Research believes no individual graph, chart, formula, model, or other device should be used as the sole basis for any investment decision.

BCA or its affiliated companies or their respective shareholders, directors, officers and/or employees, may have long or short positions in the securities discussed herein and may purchase or sell such securities without notice.

Neither BCA Research nor the author is rendering investment, tax, or legal advice, nor offering individualized advice tailored to any specific portfolio or to any individual's particular suitability or needs. Investors should seek professional investment, tax, legal, and accounting advice prior to making investment decisions. BCA Research's publications do not constitute an offer to sell any security, nor a solicitation of an offer to buy any security. They are designed to provide information, data and analysis believed to be accurate, but they are not guaranteed and are provided "as is" without warranty of any kind, either express or implied. BCA RESEARCH DISCLAIMS ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY, SUITABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE.

BCA Research, its affiliates, officers, or employees, and any third-party data provider shall not have any liability for any loss sustained by anyone who has relied on the information contained in any BCA Research publication, and they shall not be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the information or opinions contained BCA Research publications even if advised of the possibility of such damages.

Important copyright and other information are available here: <https://www.bcaresearch.com/general/disclaimer>, www.refinitiv.com/benchmarkdisclaimer.