IMCO WORLD VIEW 2024

Investing to capitalize on the long-term trends shaping our future

JANUARY 2024

IMCO
Investment Management
Corporation of Ontario

INTRODUCTION

Since the IMCO World View was first shared in early 2023, there have been several major economic, technological and political developments that will shape the investment landscape for years to come. From spy balloons to tech trade wars, regional bank failures to artificial intelligence (AI) – the interim period has underscored the necessity for long-term investors to discern the signal from the noise as they make investment decisions.

THEMES

- Addressing Inequality
- Deglobalization
- Policy Inflection
- ESG & Climate Change
- Disruptive Technologies
- Evolving Market Structure

IMPLICATIONS

- End of Low for Long
- Heightened Volatility & Greater Dispersion
- Capital Investment Boom
- Growing Role for Private Investments
- Scope for Unintended Exposures
- Need for Innovation & Flexibility

Although it may not be obvious at first glance, these developments have consequences for the Themes and Implications lying at the heart of our World View. As will be highlighted later, the collapse of Silicon Valley Bank in March 2023, for example, can be linked to the **Policy Inflection** Theme and **Growing Role for Private Investments** Implication. This Update aims to connect the dots and translate the short-term "noise" of daily headlines into "signal" that can inform our long-term economic outlook and investment strategy.

It is impossible to account for every single bit of macroeconomic and geopolitical news that hits our screens. With this in mind, the first step in formulating our Update was to identify what we saw as the key developments shaping not just the recent past, but the future structural backdrop as well. While there has been no dearth of potentially influential events to choose from since the World View was initially formulated, our analysis led us to the following narrowed down list of four **key developments**:

- **Further fraying in US-China relations**
- **Passage of the IRA & CHIPS Act**
- **US regional banking crisis**
- **The year of artificial intelligence (AI)**

Once identified, we then considered ways in which these four key developments relate to the IMCO World View, including the question of whether they add to or detract from its Themes and Implications. Aside from a few instances of potential (mostly very long term) headwinds, this analysis suggests that the *World View's conclusions have become further supported and entrenched*. The analysis also highlighted some new specific Actions that investors can consider given recent macroeconomic, technological and geopolitical developments.

Analysis of these four key developments did not lead to the identification of any new Themes or Implications. However, we expect new ones to emerge as external conditions evolve, and our own internal research efforts point to compelling investment narratives. A good example on this front is demographics, where we have already initiated some preliminary research around the impact of aging populations on key macroeconomic variables (e.g., growth, inflation, productivity), asset markets (e.g., risk appetite, supply of investment capital), and sectors (e.g., health care, pharmaceuticals, shelter).

The remainder of this report comprises mini "deep dives" into the four key developments noted above, with links drawn between them and the IMCO World View. We first provide some background on each of these key developments, including a timeline of noteworthy headlines, events, announcements, etc. The ways in which these evolving stories relate to our Themes are then briefly noted and discussed. Finally, and perhaps most interestingly, we connect the dots between these headlines and investment decision-making by drawing links between them and our previously identified Implications, noting the potential advantages investors might consider taking, and/or mitigating resulting opportunities and risks.

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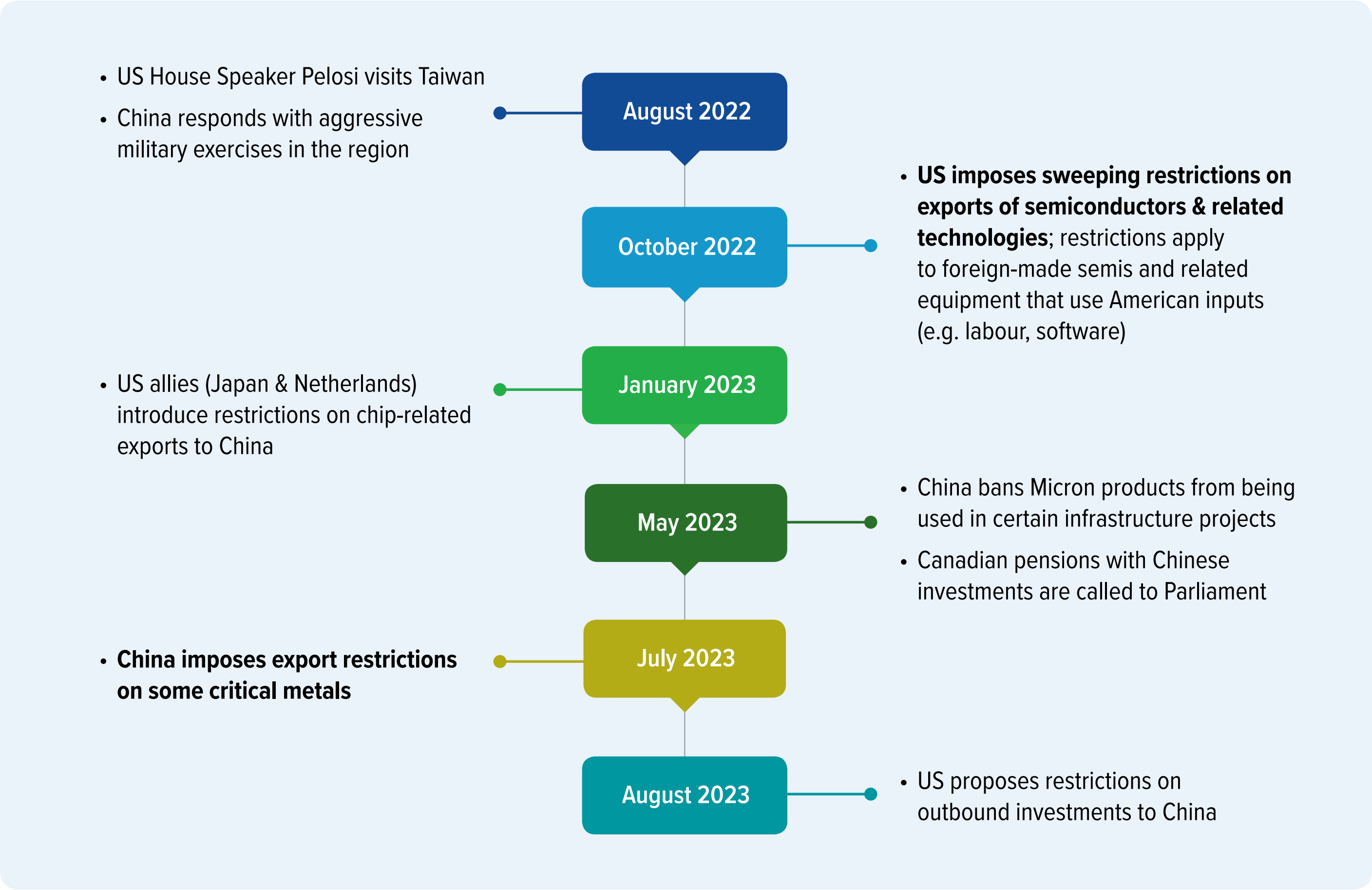
FURTHER FRAYING IN US-CHINA RELATIONS

A key assumption underlying the IMCO World View is that globalization – the process of international economic integration, facilitated by free-flowing trade/capital and a relatively benign geopolitical backdrop – is on the decline. Taking its place are rising protectionist policies, introduced alongside (and indeed the result of) intensifying competition amongst global economic powerhouses. This competition has seen economic efficiency and free-trade take a back seat to new priorities such as de-risking of critical supply chains, domestic employment, climate, and security (military as well as economic).[1] Nowhere is this more apparent than in the evolving – and deteriorating – relationship between the US and China.

The relationship has been fraying for some time, with negative momentum building since 2018, when then-President Trump appealed to populist sentiment as he introduced tariffs and restrictions on Chinese made goods. Since then, the relationship has deteriorated further with the two economic powerhouses lobbing trade restrictions at one another, while also turning up the geopolitical heat around Taiwan. If anything, the battleground has widened further under President Biden's watch to now include foreign policy, as well as industrial policy at home (more on that in the Inflation Reduction Act [IRA]/The Chips and Science [CHIPS] Act section).



August 2022

- US House Speaker Pelosi visits Taiwan
- China responds with aggressive military exercises in the region

October 2022

- **US imposes sweeping restrictions on exports of semiconductors & related technologies**; restrictions apply to foreign-made semis and related equipment that use American inputs (e.g. labour, software)

January 2023

- US allies (Japan & Netherlands) introduce restrictions on chip-related exports to China

May 2023

- China bans Micron products from being used in certain infrastructure projects
- Canadian pensions with Chinese investments are called to Parliament

July 2023

- **China imposes export restrictions on some critical metals**

August 2023

- US proposes restrictions on outbound investments to China

[1] This is apparent at the highest levels of policymaking. See, for example, this quote from US National Security Advisor Jake Sullivan's speech at the Brookings Institution in April 2023: *"So that's why we're working with so many other WTO members to reform the multilateral trading system so that it benefits workers, accommodates legitimate national security interests, and confronts pressing issues that aren't fully embedded in the current WTO framework, like sustainable development and the clean-energy transition."*

WORLD VIEW FRAMEWORK

THEMES: Deglobalization, Policy Inflection, Addressing Inequality and Disruptive Technologies

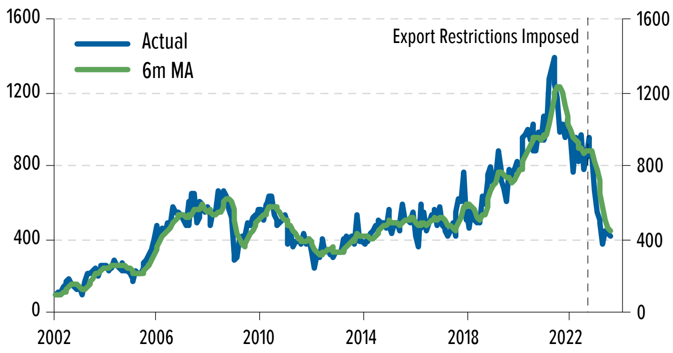
The above Actions cast light on the increasingly confrontational stance the US and China are adopting. As Treasury Secretary Janet Yellen's April 2023 speech suggested, China-related issues are now being viewed through the prism of national security – rather than primarily commercial or trade – considerations.[2] This adds momentum and durability to the **Deglobalization** Theme, especially given that confronting China is one of the few issues both US political parties agree on, thus making it more likely to endure election cycles and leadership changes in years to come.

The deterioration in US-China relations also adds support for other IMCO World View Themes. For example, it reinforces the ongoing **Policy Inflection**, wherein policymakers take a more active approach to shaping global and domestic outcomes. And while China-related security concerns are a primary driver of these policies, so too are other domestic objectives such as **Addressing Inequality** via the creation/reshoring of jobs away from China and/or other cheaper jurisdictions.

Efforts to promote American competitiveness on the technology front vis-à-vis China could encourage a faster development of **Disruptive Technologies**, with possible knock-on support for **ESG & Climate goals** (e.g., through the promotion of green tech).

FIGURE 1: The US has started to cut China off from US chips

US Exports of Semiconductors to China ($mln)



Source: U.S. Census Bureau

IMPLICATIONS AND ACTIONS FOR INVESTORS

IMPLICATIONS: Heightened Volatility & Greater Dispersion, End of Low for Long, Scope for Unintended Exposures and Innovation and Flexibility

Heightened Volatility and Greater Dispersion: The unpredictability that goes along with broadening trade restrictions, investment limitations, and geopolitical sparring is likely to create an increasingly opaque investment backdrop – one that is more prone to unexpected headlines and political twists and turns, and thus harder to plan for. Combined with policymakers' growing role in "picking winners" and directing capital investment flows, this increases the potential for **Heightened Volatility and Greater Dispersion**. While this makes for a riskier investment environment, it also creates opportunities for investors.

For one, it adds to the scope for active management and a research-driven investment process (around policy monitoring and sector analysis, for example) to catalyze outperformance by identifying the relative beneficiaries of policy announcements and geopolitical developments. It can also focus attention on particular technologies or segments, with strategically important industries such as AI, semiconductors, batteries, and clean energy being natural potential beneficiaries.[3] Similar logic applies across geographies, with certain countries and regions (e.g., Canada, Europe, India, Mexico) likely to benefit disproportionately from US efforts to friend-shore critical supply chains.

Additionally, volatility could generate opportunities for total portfolio rebalancing, as well as market dislocations within particular asset classes (e.g., "collateral damage" in areas that are not directly impacted by new trade restrictions).

End of Low for Long: As capital flows less freely and economic efficiency wanes against the backdrop of deteriorating US-China relations, costs are apt to rise. US efforts to lessen its reliance on China for critical inputs will likely result in redundant supply chains that are not only less efficient, but that also draw labor, materials and capital away from alternate uses, driving up their costs in the process. At the same time, central bankers may find themselves less capable of quelling inflationary pressures in such an environment given

[2] Janet Yellen, "Remarks by Secretary of the Treasury Janet L. Yellen on the US - China Economic Relationship at Johns Hopkins School of Advanced International Studies", April 20th, 2023, https://home.treasury.gov/news/press-releases/jy1425

[3] A timely specific example is provided by metals and materials landing in the US-China tension crosshairs, such as lithium – a key input into EV batteries that also happens to have much of its supply controlled by China. This combination could generate opportunities around domestic and/or friendly sources of this in-demand metal.

that their main tool – policy interest rates – seeks to influence *demand* rather than supply. Shocks and shortages related to the latter are much more likely in a world where geopolitical tensions play an elevated role. These dynamics support the likelihood of an **End of Low for Long** when it comes to inflation and interest rates and – by extension – bolsters our case for increased allocations to inflation-sensitive assets such as inflation-linked bonds and real assets.

Scope for Unintended Exposures: Fraying US-China relations also increase the **Scope for Unintended Exposures**. This has been apparent on multiple occasions, including in early August 2023 when the Biden administration proposed restrictions on outbound US investment. These types of measures could turn certain China-related exposures into "stranded assets" – or at least ones facing steep markdowns. Escalating trade restrictions from both sides also jeopardize supply chains, thus increasing the risk that businesses – whether in China, the US, or its allies – have their operations disrupted. Reputational and reporting risks also rise in this type of environment, as attested to by the recent scrutiny faced by Canadian pensions with large China exposures on Parliament Hill this past spring.

There are Actions investors can take to help mitigate risks from these unintended exposures. At IMCO, for example, direct investments in China are avoided, with the focus instead being on liquid broadly held securities that can be easily adjusted in response to evolving conditions. Additionally, China's country allocation within IMCO's public equities program is capped at market-weight. Active investments are preferred as they allow for better alignment with IMCO's ESG objectives and improved navigation of the China-related policy landscape.

When assessing individual investment opportunities against this uncertain geopolitical backdrop, investors could consider applying a higher discount rate and/or adjusting assumed cash flows to better reflect China-specific country risks.

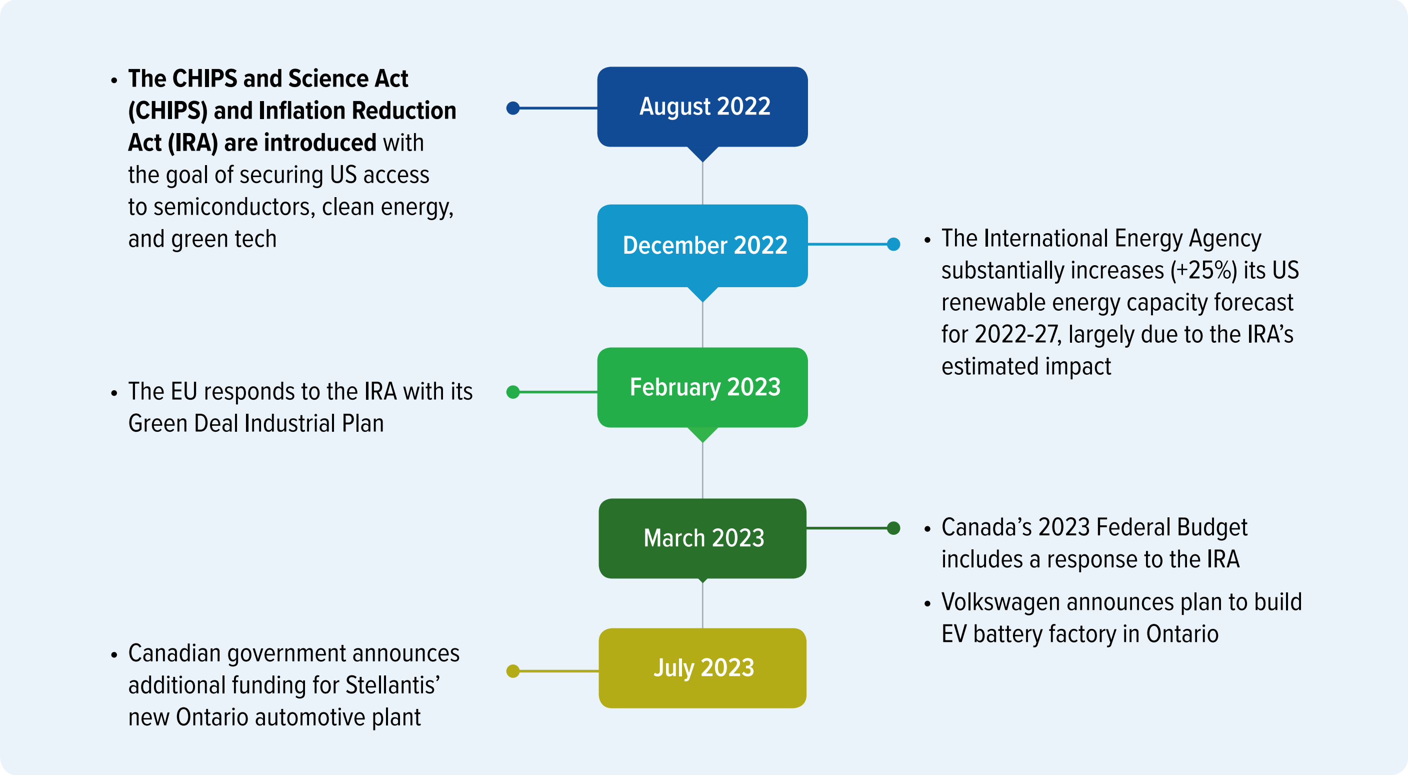
From a due diligence perspective, it will also become increasingly important to ensure that projects/companies under consideration do not have supply chains that are heavily-dependent on free flows into and out of China – and if they do, that there are contingencies in place should these flows be disrupted by new restrictions.

Innovation and Flexibility: Recent US-China events also provide a timely reminder of the potential risks investors could face if they do not have a plan and/or the innovation and flexibility to respond appropriately to fluid geopolitical events. IMCO's research-driven investment process – which includes monitoring of geopolitical developments, in addition to economic and market ones – helps ensure that these risks are incorporated into investment decision-making. Whatever specific Actions are chosen, investors will need to be increasingly vigilant in their monitoring of, and adapting to, the dynamic US-China relationship in the months and years to come.

Heightened Volatility & Greater Dispersion	• Monitor policy developments (trade rules and restrictions, recipients of policy support/hurdles) • Focus on strategically important sectors (semiconductors, AI, clean tech) • Take advantage of market dislocations ("collateral damage")
End of Low for Long	• Increase allocation to inflation-sensitive assets (inflation-linked bonds, real assets)
Unintended Exposures	• Favour broadly-held, liquid, actively-managed exposures in China (over direct and passive ones) • Cap country allocation to China • Apply a higher discount rate commensurate with China-specific country risks • Consider indirect Chinese exposures when conducting due diligence (re: supply chains, revenue)
Innovation & Flexibility	• Maintain a research-driven investment process that includes geopolitical and domestic policy monitoring • Consider contingency plans in response to major unexpected changes/events

PASSAGE OF THE IRA & CHIPS ACT

The post-pandemic era has been characterized by an increasingly "visible hand" on the part of governments, primarily in the form of major fiscal programs designed to grow targeted sectors and/or promote broader domestic social objectives. The US has been at the center of these developments, prompting several other nations to follow with policy initiatives of their own to better align – or, in some cases, compete – with those of America. The result has been a global "industrial policy race," with financial incentives made available to priority sectors and activities on a scale not seen since the immediate aftermath of World War II.



August 2022

- **The CHIPS and Science Act (CHIPS) and Inflation Reduction Act (IRA) are introduced** with the goal of securing US access to semiconductors, clean energy, and green tech

December 2022

- The International Energy Agency substantially increases (+25%) its US renewable energy capacity forecast for 2022-27, largely due to the IRA's estimated impact

February 2023

- The EU responds to the IRA with its Green Deal Industrial Plan

March 2023

- Canada's 2023 Federal Budget includes a response to the IRA
- Volkswagen announces plan to build EV battery factory in Ontario

July 2023

- Canadian government announces additional funding for Stellantis' new Ontario automotive plant

WORLD VIEW FRAMEWORK

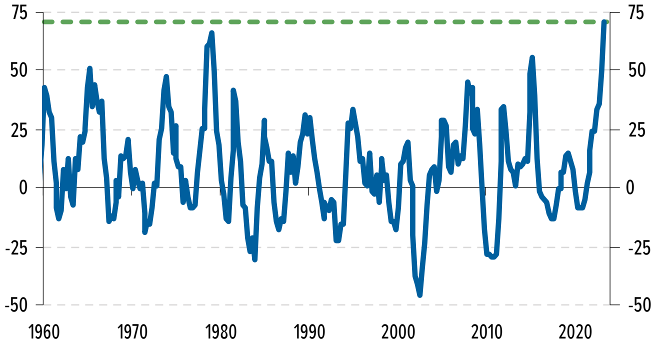
THEMES: Policy Inflection, Disruptive Tech, ESG & Climate Change and Deglobalization

The scope and breadth of these new initiatives – and governments' active role in pursuing them – bear little resemblance to the more hands-off approach to trade and economic policy seen since the "trickle down" economics of President Reagan. This is consistent with what we view as a secular shift away from the use of market forces and capital flows to allocate society's resources, in favor of a more prominent role for policymakers. That this more active policy approach is being used to pursue multiple strategic goals simultaneously – from national security to climate to jobs – adds to the strength and durability of the **Policy Inflection** Theme.

This is not to say that the IRA and CHIPS Act do not lean heavily on private-sector participation. In fact, quite the opposite. The legislation's goals are unachievable without private capital playing a major role. This public-private "government-enabled and private-sector led"[4] approach has been on full display since the IRA and CHIPS Act were signed into law in August 2022, most visibly in manufacturing capital expenditure and construction – an area that has seen unprecedented growth since the IMCO World View was produced (Figure 2). That tax incentives and credits for businesses are behind much of this activity adds to the Acts' appeal among Republicans, as does the fact that many of their benefits flow to Republican leaning states. Taken together, these features strengthen the policies' ability to survive election cycles and potential changes of government.

FIGURE 2: IRA & CHIPS Act have propelled manufacturing construction growth

Private Manufacturing Construction (YoY % Change)



Source: U.S. Bureau of Economic Analysis

Links to the **Disruptive Technologies** (re: CHIPS Act and semiconductors, IRA and clean tech) and **ESG & Climate Change** (re: IRA and energy transition) Themes are clear, given the Acts' funding of activities related to these Themes. Indirectly, they add credence to **Deglobalization** via their shared objective of improving US access to critical goods by encouraging production domestically or amongst allies, fragmenting China-centric supply chains in the process.

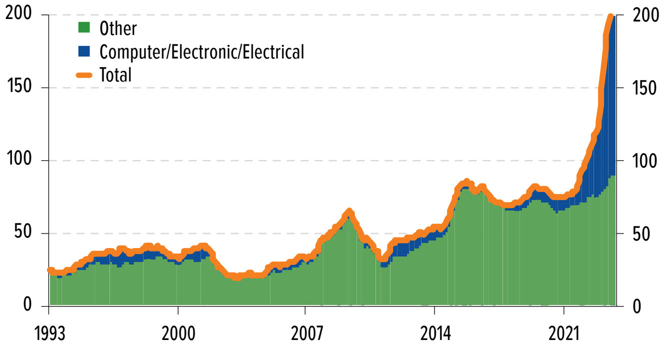
IMPLICATIONS AND ACTIONS FOR INVESTORS

IMPLICATIONS: Capital Investment Boom, Heightened Volatility & Greater Dispersion, Innovation and Flexibility and End of Low for Long

Capital Investment Boom: As noted earlier, US manufacturing construction has recently hit its highest growth rates since WWII. The hand of top-down policies is clear here, as virtually all incremental activity is accounted for by industries most directly impacted by the IRA and CHIPS acts (Figure 3). *While construction in many manufacturing industries has remained relatively flat over the past years, it has nearly tripled in policy-targeted sectors such as electrical equipment (e.g., electric vehicle (EV) batteries) and computer products (e.g., semiconductors).* The fact that this capital expenditure boom has occurred in the face of one of the most aggressive rate hiking campaigns in history further supports the notion that secular, rather than cyclical, forces are at work.

FIGURE 3: Industries targeted by IRA and CHIPS Act are driving the capex boom

US Manufacturing Construction Spending ($bln, SAAR)



Source: U.S. Census Bureau

This presents opportunities in targeted sectors, but also in areas supporting their build (e.g., construction services, materials, machinery and equipment, etc.).

[4] Economics-of-Investing-in-America.pdf (whitehouse.gov) https://www.whitehouse.gov/wp-content/uploads/2023/07/Economics-of-Investing-in-America.pdf

Capital investments facilitating the energy transition – such as grid modernization/expansion and energy storage – will likely enjoy a policy tailwind for years to come.

IMCO's recent investments in this space include the building of the Pulse Clean Energy platform (a developer of battery energy storage projects in the UK) and the purchase of a stake in NextWind Capital Ltd. (a German renewable energy company specializing in developing onshore wind farms). Similar policy tailwinds exist for projects that improve and secure US access to semiconductors and related technologies. At the same time, investors need to remain mindful of the risks associated with strong policy support, including the potential for price and revenue pressures in the face of rapidly expanding supply.

Heightened Volatility & Greater Dispersion: As governments step up their support for particular industries, there will likely be a growing divergence between the "haves" and "have nots" when it comes to enjoying support from credits, tax breaks, subsidies, etc. Divergences are also likely to grow across geographies, with some jurisdictions offering relatively more attractive supports than others for targeted activities and investments. The widening dispersion resulting from this global "race to the bottom" adds to the scope for potential returns from active management and a research-driven, policy-aware investment process.

Monitoring policy changes will be key as the return prospects of impacted sectors and projects become increasingly sensitive to such decisions. A timely example is provided by the IRA's "clean vehicle tax credit", which subsidizes purchases of new EVs by up to $7,500, thus boosting demand not just for EVs themselves, but also for the components going into these vehicles. Investors can take advantage of these shifting dynamics by identifying potential beneficiaries within the broader impacted ecosystem, as IMCO did in 2023 when it invested in Northvolt AB – a producer of lithium-ion batteries for EVs.

Innovation and Flexibility: The increasingly visible hand of policymakers brings with it not only new opportunities, but potential hazards as well. The scope for "stroke of the pen" risks to instantly change an investment's risk-return profile needs to be recognized and managed appropriately. A recent example is the Canadian government's support of the Volkswagen (VW) battery gigafactory in St. Thomas, Ontario, which was negotiated to scale up and down in proportion to changes in competing subsidies available in the US via the IRA.

Recognizing that a particular investment's profitability is not overly reliant on the assumed continuation of policy support is one measure investors can take in managing such risks. At IMCO, investment teams consider these risks when assessing prospective opportunities.

End of Low for Long: Contrary to its name, the Inflation Reduction Act seems more likely to bolster inflation over the next several years than reduce it. Efforts to mitigate reliance on geopolitically unstable supply chains can create redundancies that may be less efficient and more costly (and therefore inflationary). Additionally, these policies' reliance on the fiscal lever can further accentuate inflationary tailwinds, given deficits' boost to the financial position of the private sector. The structural nature of these expected trends adds to our case for inflation-sensitive assets, including inflation-linked bonds and real assets. Given enough time (10+ years), the IRA may very well end up living up to its name as increased productive capacity and supply potentially weigh on prices. This dynamic, however, appears to be far more uncertain than the policies' near-term inflationary impact.

Capital Investment Boom	• Consider opportunities in areas that support capital investments (e.g. construction services, materials, machinery & equipment, etc.) • Focus on investments that facilitate the energy transition, such as grid modernization/expansion
Heightened Volatility & Greater Dispersion	• Assess which countries/industries stand to benefit or face headwinds from current and prospective industrial policy • Monitor policy changes to help identify opportunites/risks (e.g., electric vehicles subject to clean tax credits, over-supply in electricity generation)
Innovation & Flexibility	• Avoid exposures that are highly-sensitive to "stroke of the pen risk" i.e., investments that could become uneconomical via policy shift (e.g., removal of subsidies)
End of Low for Long	• Increase allocation to inflation-sensitive assets (inflation-linked bonds, real assets)

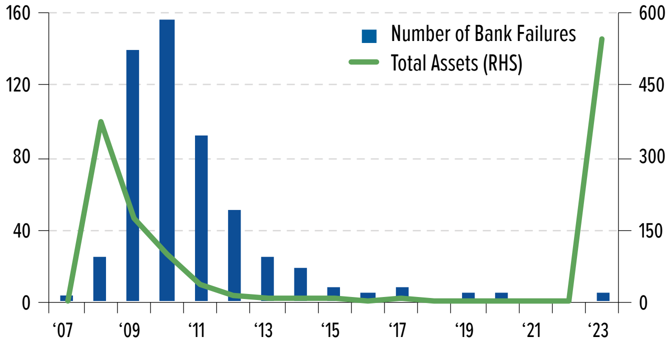
US REGIONAL BANKING CRISIS

The surge in US inflation during 2021-23 triggered one of the largest and fastest interest rate increases by the US Federal Reserve (Fed) in decades. As has occurred during past Fed hiking cycles, the sharp rise in borrowing costs deflated areas of market exuberance fueled by low funding costs such as tech startups and cryptocurrencies. Risk assets, such as equity markets generally also struggled.

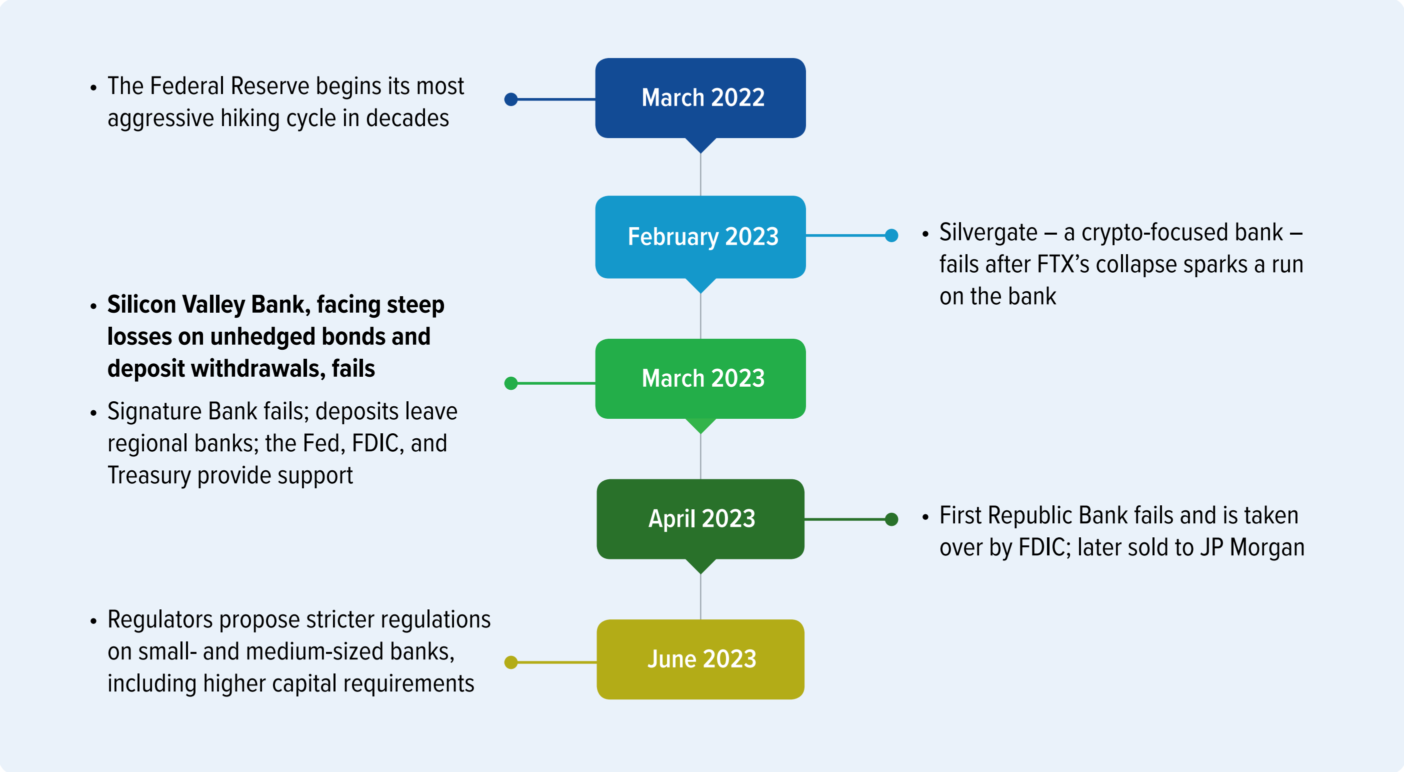
Such a rapid change in monetary conditions is often fraught with unforeseen and unintended consequences, with this Fed hiking cycle being no exception. The pace of interest rate increases, and the ensuing plunge in US Treasury prices, exacerbated asset-liability mismatches in lesser-known areas of the banking system tied to the ailing tech/crypto universe. When all was said and done, four US banks failed, making this one of the largest banking crises in US history in terms of impacted bank assets (Figure 4).

FIGURE 4: In terms of size, 2023 was an historic year for banking failures

US Bank Failures vs. Total Assets of Failed Banks (Annual, $bln)



Source: Federal Deposit Insurance Corporation



- The Federal Reserve begins its most aggressive hiking cycle in decades

March 2022

February 2023

- Silvergate – a crypto-focused bank – fails after FTX’s collapse sparks a run on the bank

- **Silicon Valley Bank, facing steep losses on unhedged bonds and deposit withdrawals, fails**
- Signature Bank fails; deposits leave regional banks; the Fed, FDIC, and Treasury provide support

March 2023

April 2023

- First Republic Bank fails and is taken over by FDIC; later sold to JP Morgan

- Regulators propose stricter regulations on small- and medium-sized banks, including higher capital requirements

June 2023

WORLD VIEW FRAMEWORK

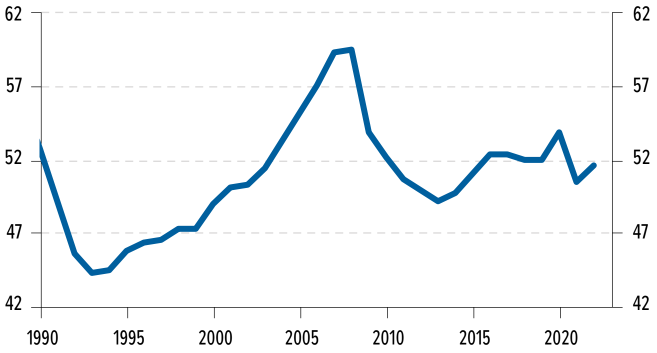
THEMES: Policy Inflection, Addressing Inequality and Evolving Market Structure

The aggressive response to the regional banking crisis – whereby Federal authorities took the extraordinary step of guaranteeing *all* (insured and uninsured) deposits – is consistent with the **Policy Inflection** Theme. Policymakers – including those outside of the central bank – seem willing to play a heavier and more active role in pursuit of their economic priorities.

For its part, the Fed also acted aggressively, but in a targeted way intended to preserve financial stability and ring-fence troubled institutions. This approach was quite different than what markets had gotten used to over the past decade or so, when the much blunter tool of rate cuts could be expected at the first sign of trouble. The fact that the Fed continued raising interest rates in the midst of one of the largest episodes of regional bank failures since the late 1980s/early 1990s Savings and Loans (S&L) crisis supports our view that central banks are increasingly mindful of inflationary forces (and thus the need for more restrictive policy) when seeking to assuage market volatility.

FIGURE 5: Banks playing a diminishing role in the provision of private sector financing

Domestic Credit to Private Sector by Banks (% of GDP)



Source: International Monetary Fund

We also view the response as a continuation of our Theme on how **Addressing Inequality** has led to a much more "hands-on" approach to markets. The decreased appetite for laissez-faire economic policy following the Global Financial Crisis (GFC) eventually led to more stringent regulation and capital requirements for systemically important banks. This time around, policymakers are focused on increasing the regulatory burden on regional banks as well, suggesting the banking sector's credit penetration will likely diminish even further.

From a longer-term perspective, credit penetration by US commercial banks has failed to recover from the GFC. After surging to nearly 60% of GDP in 2007, bank credit as a share of US economic activity has been down-to-flat for nearly a decade (Figure 5). Tight monetary policy, more stringent lending conditions/regulations and a still-nervous deposit base will do little to alter the secular dynamics.

The shortfall in bank funding has created space for non-bank lenders with stable long-term funding sources – such as asset managers, insurance companies, pension funds and sovereign wealth funds – to step in.

This is consistent with our Theme of an **Evolving Market Structure**, whereby companies are increasingly turning to private market-based financing over traditional bank-based sources. This process of bank disintermediation, where capital providers move closer to end borrowers, has been occurring in the North American financial sector for some time and will continue introducing a new set of investment opportunities.

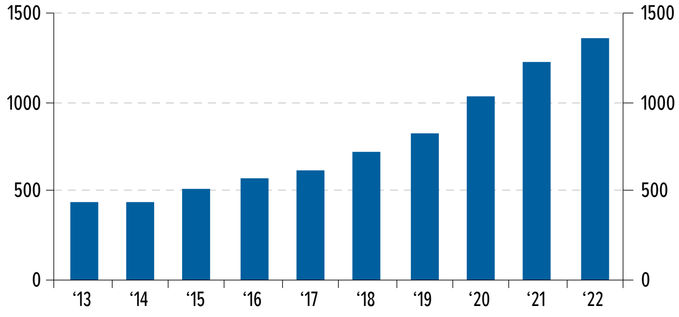
IMPLICATIONS AND ACTIONS FOR INVESTORS

IMPLICATIONS: Growing Role for/Complexity of Private Investments, End of Low for Long and Heightened Volatility & Greater Dispersion

Growing Role for/Complexity of Private Investments: The ongoing process of bank disintermediation has created space for the burgeoning private credit market to fill the void. According to Preqin, the private credit market has nearly tripled in recent years (Figure 6) and is expected to reach $2.8 trillion by the end of 2028 – unlocking further opportunities for nonbank credit providers.

FIGURE 6: Private credit has helped fill the void created by bank disintermediation

Private Credit Assets Under Management ($bln)



Source: Preqin

The retrenchment in regional bank credit following the spring turbulence opens a large gap for private creditors to expand lending in specific market segments such as middle-market and special situations.

Borrowers unable to access financing at large banks and now at regionals facing tougher regulatory/capital requirements will look to private lenders for funding. To harness these opportunities and capitalize on this accelerating secular trend, IMCO has invested with large middle-market lenders Ares and Antares as well as in special situation funds such as the Carlyle Credit Opportunities fund.

End of Low for Long: As described in previous sections, various long-term dynamics are bound to keep inflation (and hence interest rates) higher and more volatile in coming years. The uncertainty associated with a move to a new macro regime could restrain the willingness of banks to extend credit, acting as a tailwind for non-bank lenders. Thus, large well-funded asset owners and managers should be well positioned to take advantage of the resulting investment opportunities.

Heightened Volatility & Greater Dispersion: At the same time, a policy of 'higher for longer' increases the scope for unintended consequences like the recent bank failures to occur. While higher inflation/interest rates can magnify the impact of slow growth and raise the possibility of default by borrowers through the economic cycle, the resulting volatility can also create unique opportunities for investors to take advantage of resulting market dislocations (e.g., enhanced attractiveness of private investments in segments such as distressed debt). As noted earlier, more volatile environments also increase the scope for reaping the benefits of portfolio rebalancing.

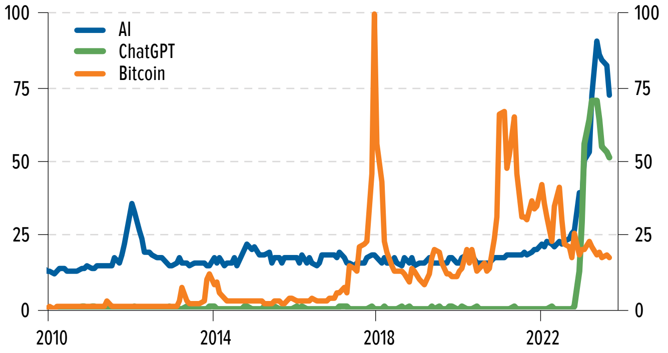
Growing Role for /Complexity of Private Investments	• Continue working towards our strategic long-term goal of a global credit portfolio predominantly comprised of private credit
End of Low for Long	• Monitor changes in the term structure of interest rates that can alter the risk/return profile of credit investments – both private and public
Heightened Volatility & Greater Dispersion	• Invest with experienced partners to enhance returns and mitigate losses • Take advantage of market volatility to benefit from rebalancing

THE YEAR OF AI

Advances in technology were prominent across society and markets this past year, with breakthroughs in AI taking center stage. The latest version of AI – generative large language models – went mainstream and galvanized worldwide attention for their potential to be generationally transformative (Figure 7).

FIGURE 7: AI has garnered extreme interest in recent months

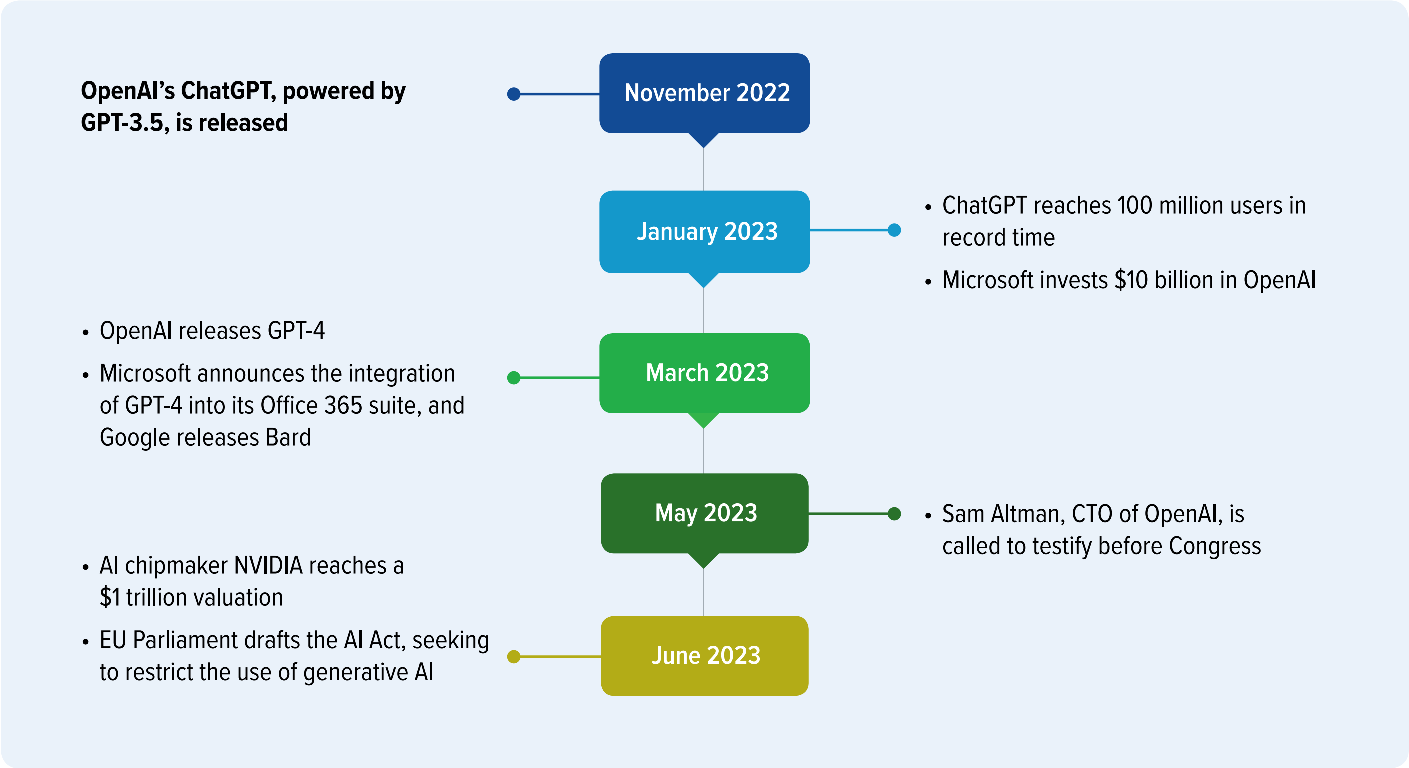
Worldwide Google Search Interest (100=Max)



Source: Google

ChatGPT, a chatbot developed by OpenAI that can generate coherent human-like text, became the first application of its kind openly available to a wide audience. Its initial widespread appeal morphed into an all-out AI frenzy in financial markets. Seen as the ones most likely to capture the initial gains from the AI revolution, big tech hyperscalers and related equities surged, bringing broader US markets higher along with them.

This technological disruption is much broader than just ChatGPT, however. The adoption of generative AI accelerated across industries as well, and the race to build out the necessary infrastructure for this and future versions of the technology rushed ahead. Moreover, the regulatory scaffolding around AI is just starting to take shape, as numerous ethical and legal uncertainties remain.



November 2022

OpenAI's ChatGPT, powered by GPT-3.5, is released

January 2023

- ChatGPT reaches 100 million users in record time
- Microsoft invests $10 billion in OpenAI

March 2023

- OpenAI releases GPT-4
- Microsoft announces the integration of GPT-4 into its Office 365 suite, and Google releases Bard

May 2023

- Sam Altman, CTO of OpenAI, is called to testify before Congress

June 2023

- AI chipmaker NVIDIA reaches a $1 trillion valuation
- EU Parliament drafts the AI Act, seeking to restrict the use of generative AI

WORLD VIEW FRAMEWORK

THEMES: Disruptive Technology and Deglobalization

Disruptive Technology encompasses much more than just a better gadget or process. An innovation that is *disruptive* reshapes the ways people and businesses operate and unleashes a strong new investment trend. The increased efficiency or interconnectivity unlocks value in existing industries and business models and, traditionally, results in economic and financial gains that are initially concentrated among market leaders.

The favoring of a group of existing dominant firms in the early stages is consistent with the surge in equity prices exhibited by a narrow group of AI-leading mega-cap firms through the first half of 2023.

As the AI rollout widens, disruption across markets/industries can be expected to quicken, especially as greater everyday uses attract more attention and create a 'virtuous loop' with expanding investment opportunities.

The year of AI also adds fuel to our **Deglobalization** Theme, given the potential for a still-emerging technology like AI to not only transform economies, but present novel security threats as well – the net result being a potentially escalating race for AI dominance between China and the West. Rather than work within an international order that facilitates the flow of goods, capital, people, and technology to grow the global economic pie for everyone, Washington and Beijing are instead now competing fiercely to win the AI arms race – preferably at each other's expense whenever possible.

This is especially true for technologies such as AI, big data, and quantum computing because their 'leap forward' acts as the primary inputs for research and development innovations across all, if not most, commercial (but also military) sectors. Although these advances are mostly driven by private sector innovation and investment, both the US and China view their development as key strategic imperatives to raise long-term productivity growth. The upside for investors of this AI-strategic arms race is that the end goal, at least for now, is to develop the best technology to ultimately serve global businesses and consumers with state-of-the-art manufacturing and electronics goods.

IMPLICATIONS AND ACTIONS FOR INVESTORS

IMPLICATIONS: Capital Investment Boom, Scope for Unintended Exposures and End of Low for Long

Capital Investment Boom: Just as occurred during the dot-com boom of the 1990s, the AI revolution requires immense capital investments. According to investment bank Goldman Sachs, AI-related capital expenditures will double to nearly $200 billion by 2025, and peak at around 2.5% of US GDP in 2032. If, however, the technology evolves at a faster pace than currently envisioned – which has been the case thus far – the AI **Capital Investment Boom** has the potential to be even bigger.

Due to AI's substantial (and rising) computational and energy needs, we see growth in the datacenter market, for instance, continuing to increase rapidly in coming years.

The large requirements of AI, machine learning, and the ongoing move to the cloud across the IT world means the vast workload requirements will need to be met by ever-greater datacenter capacity.

IMCO's investment in DataBank (a US datacenter platform), for example, is one way we are gaining exposure to this trend.

Another important element in the scaling up of digitization and data-heavy AI use will be the need for advanced data transmission capacity infrastructure in major markets. IMCO's investment in euNetworks – a large European fiber network operator – allows us to gain exposure to this structural trend. IMCO has identified digital infrastructure as a key area of focus for its go-forward infrastructure program and has developed a comprehensive investment strategy to capture opportunities in the sector on a global basis.

Outside of the direct 'nuts and bolts' of the AI disruption, capital investments will also likely be substantial at the industry level. An example of this in the healthcare sector includes the use of AI and high-performance computing to enable companies to feed the input from sensors or cameras to data-voracious processing services. AlphaFold, for instance – an AI system developed by Google – accurately predicts the 3D structure of proteins and is having a profound impact in accelerating drug discovery and developing new therapeutics. Health-related advances such as these are expected to play an increasingly important role as populations age and the demand for longevity, treatments and care continues to grow.

Scope for Unintended Exposures: As noted earlier, a high concentration of perceived AI winners in public equity markets at this stage of the innovation cycle is not surprising. This is especially true in the case of dominant mega-cap hyperscalers (such as Microsoft, Google, Amazon, etc.), given that the financial resources required to be AI-leaders are currently enormous. However, it also highlights the risk of passively investing in cap-weighted benchmarks, given the potential for their returns to be driven by a small number of constituents. To better manage such concentration risks, investors can actively manage exposures to particular geographies, sectors, or securities.

End of Low for Long: Advances in AI could eventually generate *disinflationary* pressures as increasingly advanced technologies make it more efficient – and ultimately cheaper – to produce goods and services. This could occur along a number of dimensions including by, for example, rendering intermediate people/processes redundant (at a much lower cost), improving productivity, or boosting cost efficiency. These outcomes, however, remain highly uncertain and, if they were to occur, would likely take years (if not decades) to materialize.

Capital Investment Boom	• Invest in core and picks and shovels AI-infrastructure such as datacentres and transmission-capacity/connectivity • At the industry level, identify sectors where AI efficiencies will have a large impact – both positive and negative (e.g., healthcare/medicine)
Growing Scope for Unintended Exposures	• Actively manage benchmark-indexed investment exposures (via sector, style, security selection, etc.) to help manage concentration risk

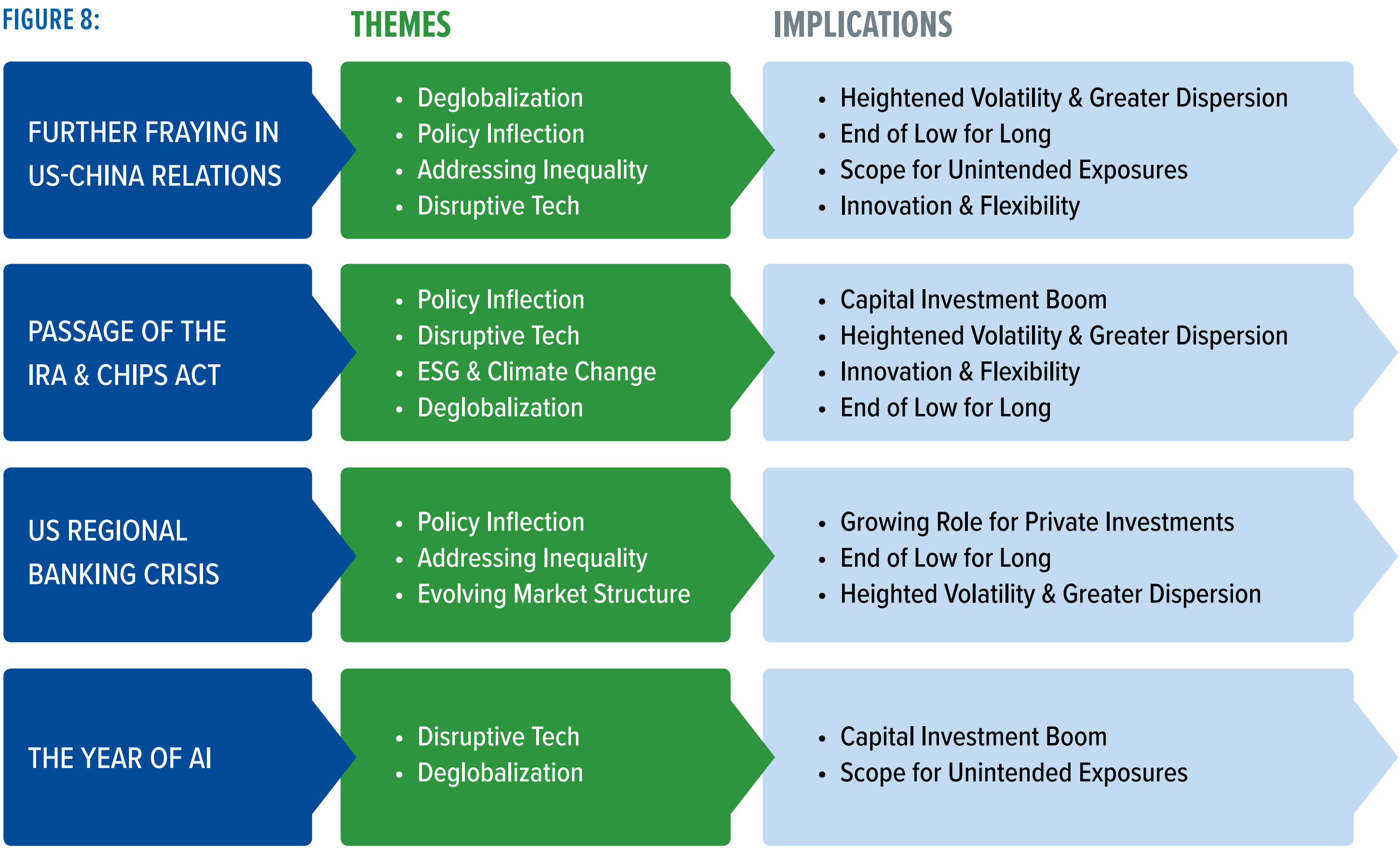
CONCLUSION

Our objectives for this Update were twofold: 1) to make sense of our chaotic world by translating recent major developments – be they geopolitical or economic or technological in nature – into investable Actions via our World View framework; and 2) to gauge whether these developments increase or decrease our confidence in the framework's conclusions. In our view, and hopefully others, both objectives were met. Although it is not possible to summarize all the resulting market Implications and potential investor responses to them here, it is worth noting some high-level observations that we found particularly interesting.

One of these is the degree of overlap and confluence amongst various components of the World View, with many of the Themes and Implications being impacted by several of the key developments simultaneously (Figure 8). For example, not only are **Deglobalization** and the **End of Low for Long** becoming more likely now that US-China tensions are escalating, they look set to intensify further in coming years from policy initiatives such as the IRA and CHIPS Acts. The fact that many seemingly disparate events converge to provide multiple pillars of support adds to the strength and durability of these trends and their related investment Implications. It also strengthens our confidence in the IMCO World View framework.

This, however, does not mark the end of the process. Instead, a rapidly-changing world requires that we continually monitor, review and – when necessary – revise our framework, and adjust the ensuing investment views and recommendations. As new driving forces emerge, and old ones fade away, the macroeconomic and geopolitical backdrop will continue to evolve. By maintaining a dynamic, research-driven investment process, we can help ensure that the IMCO World View evolves along with it.

FIGURE 8:



	THEMES	IMPLICATIONS
FURTHER FRAYING IN US-CHINA RELATIONS	• Deglobalization • Policy Inflection • Addressing Inequality • Disruptive Tech	• Heightened Volatility & Greater Dispersion • End of Low for Long • Scope for Unintended Exposures • Innovation & Flexibility
PASSAGE OF THE IRA & CHIPS ACT	• Policy Inflection • Disruptive Tech • ESG & Climate Change • Deglobalization	• Capital Investment Boom • Heightened Volatility & Greater Dispersion • Innovation & Flexibility • End of Low for Long
US REGIONAL BANKING CRISIS	• Policy Inflection • Addressing Inequality • Evolving Market Structure	• Growing Role for Private Investments • End of Low for Long • Heighted Volatility & Greater Dispersion
THE YEAR OF AI	• Disruptive Tech • Deglobalization	• Capital Investment Boom • Scope for Unintended Exposures