



ROCKY ROAD: RISKS TO U.S. COMPANIES AND INVESTORS IN THE CHINESE FINANCIAL SECTOR

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Executive Summary

Over the past forty years, China has risen to a position of economic and financial prominence, and has deepened economic and financial interdependence with the United States. One of the overarching challenges that U.S. companies and investors face is the opacity of China's business environment and the Chinese Communist Party (CCP)'s almost absolute power. All markets inherently have a degree of risk; however, China-U.S. strategic competition, geopolitical tensions, increasing U.S. restrictions on the People's Republic of China (PRC), and China's own economic policies (including restricting the movement of capital out of mainland China) are increasing the financial risks to U.S. companies operating in China and to U.S. investments in Chinese companies. These increasing risks are further complicated by the PRC's lack of transparency and disparities between U.S. and PRC regulatory regimes. This is generating challenges for U.S. agencies charged with ensuring stability, transparency, and sound risk management practices in the U.S. and global financial systems. Some U.S. companies and investors with exposure in China recognize the increasing risks and are already reducing their dependencies on the PRC and cutting back on investments; however, we do not currently have an adequate understanding of the scope of the exposure by U.S. companies and investors, nor adequate modeling of scenarios.

In this discussion paper, the first three sections highlight the risks for U.S. companies and investors in China and the fourth discusses the difficulty quantifying those risks, which are as follows:

1 MAJOR INCONSISTENCIES IN ACCOUNTING AND DISCLOSURE RULES

Given the lack of transparency within China, Luckin Coffee is perhaps the most well-known case of the risks associated with the inconsistencies between how a Chinese company operates and U.S. accounting standards and audit requirements. The actions taken by the Securities and Exchange Commission and Public Company Accounting Oversight Board to hold Chinese companies accountable are a positive step. However, we still have an incomplete understanding of the full scale of such China-related risks to investors in U.S. markets.

2 ECONOMIC RISKS BREWING IN THE PRC AND CCP INTERVENTIONS

Although China experienced an extended period of high economic growth and integration with the global economy, risks within its own economy are posing increasing risks to the global economy. This includes China's high debt-to-GDP ratio (~290% vs. the U.S.'s ~125%), stresses in the financial sector and real estate market, and the rapid decline in value of its stock market. These and other risks to U.S. companies and investors are accentuated by the unpredictability of Chinese government interventions.

3 GEOPOLITICAL RISKS TO U.S. COMPANIES AND INVESTMENTS

U.S. tensions with China have been rising for years with each nation taking disruptive actions toward the other's commercial and financial interests. However, companies underestimate the level of risk, and risk quantification is difficult. Capital controls and other restrictions by China to prop up its own economy make it more difficult for foreign companies and

investors to move money out of Chinese markets. We do not understand the scale of assets and liabilities that U.S. or other multinational companies have on their books in China. The recent expansion of the State Secrets Law provides the CCP with additional opportunities to interfere with multinational companies operating in the mainland.

4 UNEVEN CAPACITY TO MEASURE RISKS

Quantification of such risks is highly specialized, and the information is often closely held by industry. Larger companies often have more awareness and a higher capacity for analysis of risks associated with geopolitical events compared to smaller companies, but companies of all sizes may face scrutiny by the CCP depending on their specific sector and/or linkages to civil-military fusion. Academics and government agencies also conduct risk quantification, but it is difficult to assess its relative value given the scarcity of comparable data to model.

This paper concludes with recommendations for actions U.S. companies and investors should take for themselves and steps U.S. regulators should take for U.S. companies operating in China:

- For industry, including the full range of multinational companies to small and medium enterprises: 1) Improve public risk disclosure; 2) increase understanding of the geopolitical environment, both its opportunities and its risks; and 3) couple awareness with the ability to act by improving agility and resilience.
- For policymakers and regulators: 1) Use quantitative methods to investigate the impacts of proposed policies and regulations, particularly indirect and unintentional effects; 2) include geopolitical risk in regulatory stress tests; and 3) further address interjurisdictional regulatory discrepancies.

1 INCONSISTENCIES BETWEEN U.S. AND CHINA REGULATORY REGIMES

The Chinese financial system has continued to evolve since the formation of the People's Republic of China in 1949. As an economy that adheres to “socialism with Chinese characteristics,” the Chinese financial system operates under greater central control than typical Western financial systems, including frequent use of capital controls and direct market interventions. Its structure also continues to change. For example, in the first quarter of 2023 the CCP reorganized the supervisory structure of its markets by replacing the China Banking and Insurance Regulatory Commission with the National Financial Regulatory Administration,¹ while also rebalancing responsibilities among the remaining agencies. This transition is likely to create financial turbulence as the new agency changes interpretation conventions, updates enforcement policies, and introduces new rules. This political reality adds to the financial risks associated with operating a firm in China and could increase the amount of spillover from a Chinese financial crisis into the global financial system.

The opacity of China's business environment is a chronic challenge for U.S. companies and investors. In the early 2000s, China used ownership restrictions and technology licensing requirements to strongarm U.S. companies to form International Joint Ventures with Chinese firms to gain access to Chinese markets. This facilitated technology transfer from global firms into China, as well as significant intellectual property theft.² China has repeatedly used its internal censorship apparatus to influence U.S. entertainment companies, including filmmakers³ and the NBA.⁴ The CCP also commonly uses

national security laws to hinder or punish firms that cross party lines; we provide additional discussion of this vector in Section 3. Finally, China's “zero-COVID” policy was extremely disruptive to global companies that often rely on international travel and global supply chains (which often include China).⁵

Also highlighting the inconsistencies between U.S. and Chinese financial regulatory regimes, and the importance of transparency and accountability, are examples of Chinese companies' operations in the United States. Following the scandal surrounding Luckin Coffee,⁶ U.S. lawmakers passed the Holding Foreign Companies Accountable Act⁷ in December 2020. This law requires that Chinese companies disclose whether the Chinese government owns or controls the company (i.e., “state-owned enterprise”) and that the Securities and Exchange Commission (SEC) halts trading in any listed company whose financial reports have not been inspected by the Public Company Accounting Oversight Board (PCAOB) for three consecutive years. By July 2022, the SEC had already identified more than 150 companies (e.g., Alibaba, JD.com, and Yum China Holdings) for failing to comply with the auditing requirements.⁸ Empowered by this legislation, PCAOB is now holding more Chinese companies accountable to protect investors in U.S. markets. In December PCAOB was granted access to audit firms in the PRC.⁹ The audits are ongoing and have already identified violations of the U.S. securities laws and PCAOB rules and standards. For example, in November 2023 PCAOB announced three settled disciplinary orders sanctioning three China-based firms and four individuals.¹⁰ When the United States has taken such punitive actions against China, there is a history of retaliation; it is unclear at this time how the CCP will react.

2 ECONOMIC RISKS TO U.S. COMPANIES BREWING FROM CHINA AND CCP INTERVENTIONS

During the several decades preceding the COVID-19 pandemic, China experienced an extended period of high and relatively stable economic growth. Real GDP grew at roughly 9.5% annually, with (suspiciously) little deviation from announced growth targets.¹¹ As its economy has grown, so has its integration and influence in the global economy. However, there are now several macroeconomic risks in China, including its debt levels and stresses in the financial sector and real estate market, as has been widely documented and reported.

Signs of Economic Stress in China

The Chinese government's stabilization tools during periods of economic stress have been government spending and looser credit conditions, which have created a significant debt overhang. China's debt-to-GDP ratio increased over the past two decades from 139% in Q1 2003 to 288% by the end of 2023, overtaking the United States and the aggregated Euro area.¹² These debt levels are now restricting the Chinese government's fiscal space available for other interventions.

China's financial system was also exposed to a significant amount of credit risk during and shortly after the COVID-19 pandemic, leading to the failure of several smaller local banks that were unable to adequately diversify.¹³ In addition, Baoshang Bank, a larger commercial-facing entity, failed in 2020 and was the first of its class to go bankrupt in almost 20 years.¹⁴ The failure of several consumer-facing banks and broader financial uncertainty led to a series of large protests, calling for the state banking regulator to make depositors whole.¹⁵ More

recently, China's shadow banking industry (non-bank financial institutions that provide similar services to traditional banks but are subject to a different body of regulations) has shown signs of weakness.¹⁶ Between regulatory crackdowns intended to mitigate systemic risk, the economic slump attributed to COVID, and the pressure coming from the real estate sector, there have been increasing signs of distress among large non-bank financial institutions. For example, Zhongzhi Enterprise Group has become an entity of concern after several affiliated firms failed to meet their obligations associated with offered investment products.¹⁷ Zhongzhi has a significant stake in Zhongrong International Trust, which in turn is one of the largest firms in China's trust industry.

In addition, the Chinese real estate market, which has historically been a driving force of the Chinese economy, has shown some of the negative side effects of the debt-driven growth marathon. Evergrande was one of the first major real estate developers to begin to tumble, with rumors of poor financial health circulating in 2020, credit downgrades in mid-2021, defaulted bond payments in late 2021, a downward spiral that has continued into 2023, and a Hong Kong court order for Evergrande to liquidate.¹⁸ Its fall was closely watched by many, which may have drawn attention away from other developers that faced similar issues, including Kaisa Group, Fantasia Holdings, Sunac, Sinic Holdings, and Modern Land. In mid-2023 Country Garden, another large real estate developer, began a similar descent. Interestingly, several of the developers that experienced financial difficulties during the 2020+ Chinese real estate crisis relied on wealth management products,¹⁹ a relatively new type of financial product offered almost exclusively by Chinese banks and financial institutions.

Chinese Ad Hoc Interventions Following Market Events

China often takes a more active role in managing its economy and financial system relative to most of the Western world, which tends to set market rules and then assumes a more passive role in day-to-day market activities. China's long-running policy of intervention and bailouts creates risks because of the ambiguity and uncertainty about how and when the government will intervene in financial markets and revise regulatory rules.

For example, in response to poor performance of domestic equity markets in 2023, the Chinese government rolled out a policy stimulus package that reduced transaction costs, lowered margin requirements, and restricted the ability of controlling shareholders to sell their holdings. The Chinese securities regulator claimed it would consider reducing the number of approved new listings, which could shift the balance of supply and demand. The package also prevented controlling shareholders from selling stock in listed companies that have not issued a dividend payment within the past three years, are trading below their Initial Public Offering price, or are trading below their net asset value (NAV).²⁰ At first glance, this restriction seems to inhibit the ability of controlling shareholders, who also commonly have insider information about firm activities, to cut their losses and run when a firm is performing poorly. This may give the controlling shareholders a greater incentive to ensure that company performance improves, and the continuing involvement of controlling shareholders may give less informed investors more confidence in the stability of a company. However, there is a significant amount of ambiguity in the wording of the rule. The definition of a controlling stakeholder is not concrete in China and can include shareholders with smaller stakes in a company if they have other means of exercising

influence over the company.²¹ Additionally, the NAV clause may involve a significant degree of interpretation due to the amount of off-balance-sheet items present in the Chinese financial system. As such this restriction leaves plenty of room for selective enforcement, allowing the Chinese government to focus its attention on stocks or controlling shareholders of interest. In August 2023, Beijing also imposed selling restrictions on several large mutual fund administrators, seeking to prevent them from becoming net sellers of equities.²³ This restriction carries similar ambiguity on the terms of enforcement. It is unclear whether these measures impacted U.S. or multinational companies cross-listed or otherwise trading on those exchanges and/or U.S. mutual funds, but the Chinese government has taken enforcement action against Chinese citizens and trading in mainland or Hong Kong exchanges.²³

China also cracks down on prominent social media writers who hold negative outlooks on parts of the Chinese equity markets.²⁴ This sort of information and discourse control is not a surprising approach for the CCP but re-emphasizes the types of hands-on interventions that it often chooses to pursue and its rather arbitrary enforcement criteria.

Regardless of the CCP intentions of these interventions, the Chinese stock market tumbled. Between January 2021 and January 2024, the value of the China Securities Index of mainland shares dropped by over 40% and Hong Kong's Hang Seng Index by almost 50%. In January, the Chinese State Council announced its intention to do more to stabilize its markets and the CCP is reportedly considering an injection of over \$280 billion to prop up these stock markets.²⁵ While the previous measures restricted the sale of equities, this additional measure may require state-owned enterprises to buy shares with cash repatriated from overseas. Although the Chinese government is

trying to reassure foreign investors,²⁶ some Western investment companies had already started offering vehicles that are specifically designed to move investments out of China and into other markets.²⁷

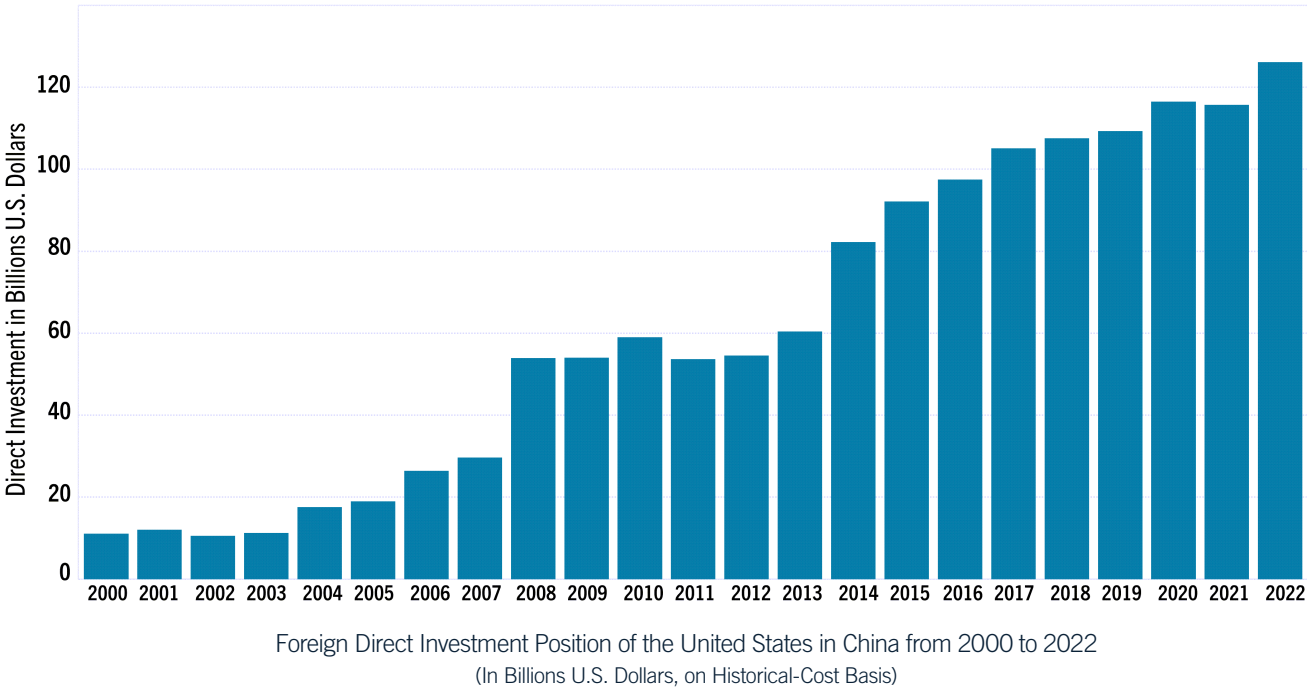
Analysts are speculating about the effects of these market events in China and spillover risks to the global economy. Unfortunately, predicting when such a crisis may occur is exceptionally difficult due to China’s incomplete and often unreliable reporting.

3 GEOPOLITICAL RISKS TO U.S. COMPANIES AND INVESTMENTS

While a strategy of constructive engagement with China dominated U.S. foreign policy up through the mid-2010s, tensions had been rising with China for years. The Chinese Communist Party’s intent to reshape the international order is at the core of this tension, coupled with refusal to recognize international borders and construction of military bases across the South China Sea, its genocide

against the predominantly Muslim Uyghurs and other minority groups in Xinjiang, serious evidence of economic espionage and intellectual property theft, heavy use of subsidies for Chinese national champions, and more. This era of heightened geopolitical tensions has pushed both the United States and China to formulate and deploy more frequent and disruptive policies toward each other’s commercial and financial interests.

The United States has a range of capabilities to use in the strategic competition with China. For example, the United States has introduced an increase in tariffs, sanctions on Chinese individuals for human rights abuses and other offenses, and restrictions on U.S. investments in Chinese companies connected with the military, among other measures. The United States has employed export controls that reduce the quantity and quality of semiconductor chips that can be sent to China,²⁸ thus directly opposing China’s goal of becoming a leader in artificial intelligence by 2030.²⁹



While China has traditionally avoided direct actions against the United States and tended to use diplomacy and economic coercion,³⁰ it has more recently retaliated against U.S. actions with tariffs and sanctions of its own.³¹ China's most frequently used sanctions mechanisms include visa and travel bans, export restrictions, and asset freezes. Thus far, China's sanctions have mostly targeted high-profile individuals, companies, or organizations. This choice could be driven by China's relative lack of experience in using these tools or an emphasis on mitigating unintended negative impacts to its own economy. Foreign companies operating in China have also experienced increased scrutiny under revamped anti-spying efforts, including surprise raids and questioning.³² China also updated its State Secrets Law in late February, the new text of which increases the burden of responsibility laid on Chinese firms and citizens to protect state secrets and thus may call on them to act as state agents in private dealings.³³ One important expansion of this updated State Secrets Law is the new coverage of "work secrets," which is vague, but seems to give the CCP more legal tools to crack down on certain businesses and private deals that it dislikes (such as multinational consultancies and due diligence firms³⁴).

Risks to U.S. Investments and Companies in China

China has gradually allowed greater international involvement in its domestic financial markets, but those interactions have continued to be heavily moderated and controlled. Almost the entire Chinese financial system was inaccessible to international investors from its revival in the 1980s until 2002, when the Qualified Foreign Institutional Investor (QFII) program was introduced.³⁵ The CCP then slowly allowed international investors to access pieces of the domestic Chinese markets. In 2010 select foreign entities were allowed access to the Chinese bond market, stock market connections

between the mainland and Hong Kong markets were introduced in 2014, access to mainland retail funds was opened in 2015, and access to wealth management products was allowed starting in 2020. The QFII program, and related Renminbi Qualified Foreign Institutional Investor (RQFII) program, features restrictions on which entities are eligible to participate, applications and approvals gated by opaque processes, as well as artificial frictions on wealth transfers into, within, and out of the country. Nevertheless, foreign direct investment (FDI) by U.S. companies in Chinese companies is significant and has been in an overall uptrend for decades.³⁶

Despite this trend, foreign firms are now increasingly limiting their participation in the Chinese market, or exiting it entirely, and a narrative of geoeconomic fragmentation is rising to prominence.³⁷ In fact, in Q3 of 2023 China had its first foreign investment deficit in decades.³⁸ Although the CCP is officially restricting capital moves out of mainland China, there was a significant investment outflow from China estimated to exceed \$100 billion in the first three quarters of 2023.³⁹ By early 2024, this FDI outflow resulted in an 8% year-over-year decline in total foreign investment in China, the first such decline since 2012.⁴⁰ Although this indicates a general trend, individual U.S. investors publicly complained about the Chinese government restricting their ability to move capital out of the country and not providing a clear justification,⁴¹ an example of the regulatory ambiguity that should make companies and investors wary of operating in China. In August 2023, the White House also released an Executive Order that will require notification of outbound U.S. investments in certain national security technologies and products in countries of concern, which includes China.⁴² In May 2024, the Secretary of Commerce stated that she expects the outbound investment restrictions to be in

place by the end of the year.⁴³ Given the relative narrow scope of the notification requirement at least initially (e.g., “sensitive technologies and products in the semiconductors and microelectronics, quantum information technologies, and artificial intelligence [AI] sectors that are critical for the military, intelligence, surveillance, or cyber-enabled capabilities”), it is unclear how much of a direct impact this will have on U.S. FDI in China overall.

This investment outflow is adding pressure to the Chinese economy. Considering the CCP’s penchant for interventions and tight capital controls, it is hard to predict what measures the Chinese government may take to prevent foreign investors from moving such money out of Chinese markets. Although individual companies likely know their total assets and liabilities in China, there is no regulatory requirement for companies to report their exposure to these types of geopolitical risks. As a result, the total scale of the risk to U.S. or other multinational companies is unknown.

4 UNEVEN CAPACITY TO QUANTIFY POLITICAL RISK

Disruptive geopolitical activity is likely to become more frequent, with a corresponding rise in the geopolitical risk to U.S. companies and investors. The potential magnitude and breadth of socio-economic impacts from geopolitical events includes loss of assets, supply chain disruptions,⁴⁴ credit tightening,⁴⁵ lower market liquidity,⁴⁶ increased market volatility,⁴⁷ and changes in consumer spending habits. However, geopolitical risk remains a low-priority concern for many companies, and many underestimate the level of risk.

This lack of preparedness was abundantly clear from how firms responded to Russia’s escalation of its war against Ukraine in 2022. While some avoided losses, others were forced to exit the Russian

market, encountered pressure from their home government, and were confronted with negative consumer sentiment for operating in the Russian market, facing significant losses.⁴⁸ Their inability to assess the risks surrounding the conflict left them ill-prepared for the rapid escalation and changes in public sentiment surrounding the war. Given the size of China’s economy, the risk associated with the economic impact of a conflict with China is even higher.

Challenges to Risk Quantification

Risk quantification is an inherently difficult task that most firms are ill-equipped to tackle. It is a relatively secretive process largely in the domain of insurance companies and other financial institutions. As such, there are few, if any, standards for quantifying risks, and domain experts are highly siloed. While some debate the relative value of risk managers, larger companies nevertheless tend to have the largest surface area exposed to geopolitical events and the most resources dedicated to risk management in a variety of distinct domains. A larger U.S. company, however, also faces greater exposure in China, which may put it at greater risk for being targeted and/or nationalized. As a result, level of resources dedicated to quantifying risk is not a perfect antidote for CCP scrutiny, IP theft, and other forms of sabotage or coercion. On the other hand, a smaller company may dedicate fewer resources to risk quantification and management but similarly have less exposure in China. In conclusion, the most important factors are likely a company’s specific sector, whether there are linkages to civil-military fusion, or if the company is otherwise seen as contributing to or undermining CCP priorities.

In the public sphere, risk quantification is often undertaken by academics and government agencies.⁴⁹ However, without the direct competition present in the financial industry it is difficult to

assess the relative value provided by industry versus public risk quantification tools. While cyber-related risks, for example, often attract more attention, for more niche risk domains, risks with lower occurrence frequencies, or risks whose impacts are more difficult to quantify, the use of quantitative risk analytics is even harder and less likely.

Risk quantification is also limited by data availability and analysis scope. Often, entities do not know what data to collect before an event of concern has occurred, then cannot collect that data effectively afterward. Starting a quantitative risk assessment can require a non-trivial amount of foresight and upfront investment before it bears fruit. Regarding the analysis scope, once appropriate data has been collected the relevant stakeholders need to decide the targets of the analysis. Given the complexity of conducting a broader analysis, risk analysis is usually best tackled initially in smaller bites, where individual risks can be well bounded and independently considered. Then, multi-factor models can be built on the narrower risk analytics once they have proven their worth.

5 RECOMMENDATIONS

Priority recommendations for U.S. industry and regulators, including specific actions to mitigate the risks identified in this paper, are included below. Other U.S. government policymakers and allied policymakers, regulators, and industry should further build on these recommendations, to adopt a comprehensive approach to de-risking exposure to the Chinese financial sector.

What Industry Can and Should Do Now

A) Improve public disclosure

Geopolitical risk is quickly becoming a significant concern for many businesses, and by extension,

many investors. However, investors often have less knowledge about how particular geopolitical risks might impact firms that they invest in. As such, firms should develop and publish formal geopolitical risk assessments. Such risk assessments would need to be updated periodically to avoid becoming irrelevant due to evolving geopolitical situations.

B) Increase geopolitical awareness

Various Chinese entities have been engaged in intellectual property theft and other nefarious practices for the past two decades or so, and many U.S. companies have been negatively impacted. The chaos following Russia's full-scale invasion of Ukraine was also a poignant reminder that companies should reconsider the relative cost of complacency versus geopolitical risk quantification and mitigation. To avoid being caught flat-footed by such geopolitical competition, companies should actively build an understanding of probable, possible, and unlikely events, and identify the most likely impact to core business functions. Qualitative and quantitative risk analytics can be useful for building a better picture of a firm's risk profile, allowing for better prioritization of resources among known risks. After building a more formal process for assessing and mitigating geopolitical risk, companies should continue to track the rise of new geopolitical risks and update their processes to remain relevant.

C) Couple awareness with increased agility and resilience

This quantitative analysis of risk can then be used to develop mitigation plans and other resilience measures. Geopolitical events can stew for long periods before unwinding extremely quickly. Any awareness is nearly useless, however, without a timely reaction. Although many firms seem to not believe it is worth the cost nor feel it is mandated without a clear national security nexus, the risks are high enough that all U.S. companies in China

should be designed for agility and resilience to better mitigate geopolitical events. Diversified supply chains, distributed facilities, and response/mitigation plans are examples of concrete steps that companies can take to improve their resilience to unexpected geopolitical events. They should also conduct financial stress testing to gauge the effectiveness of resilience measures in the face of certain shocks.

What U.S. Regulators Can and Should Do Now

A) Use quantitative methods to investigate possible spillover effects

The increasingly disruptive policies being deployed often have second and third order effects that put pressure on entities that are far removed from the original intended target. This complicates the risk management process for all companies and may directly burden non-target firms that happen to be too close to target firms. Policymakers can ease the burden on firms operating at home and in allied foreign countries while still making progress toward their primary policy objective. To do this, policymakers should put additional effort into analyzing indirect impacts of proposed policies.

B) Include geopolitical risk in regulatory stress tests

The government can place a greater emphasis on the importance of geopolitical risk by making it more immediately relevant to firms as part of current supervisory interactions. This should be an explicit factor for consideration by the Financial Stability Oversight Council in its supervision of the U.S. financial system. For example, at least one scenario in the Federal Reserve's stress testing program should include aspects of geopolitical risk specific to China. The Fed's 2023 testing program only briefly mentions geopolitical risk in passing, and bundles China into a "developing Asia bloc,"

rather than considering this important competitor more explicitly.⁵⁰ In this vein, the House Select Committee on the CCP recently published a report containing recommendations for reshaping the relationship between the United States and China.⁵¹ One such recommendation calls for the Fed's stress tests to directly evaluate the ability of U.S. banks to withstand a potential sudden loss of market access to the PRC. The SEC, Federal Deposit Insurance Corporation, and other regulators could also consider increasing their requirements regarding geopolitical risks for a company's public disclosures.

C) Further address interjurisdictional regulatory discrepancies

As a result of strategic competition, we anticipate additional discrepancies in financial regulation between jurisdictions, particularly the United States and China. This could result in increased clashes between regulatory regimes, which would negatively impact the United States economy. Policymakers should carefully track and evaluate gaps, loopholes, and other discrepancies between major global regulatory regimes and consider such cross-jurisdictional interactions when developing new financial rules.

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Endnotes

- ¹ Woo, Ryan, et al., “China to Set up New Financial Regulator in Sweeping Reform”, Edited by Robert Birsell and Christina Fincher, Reuters, March 7, 2023, www.reuters.com/world/china/china-set-up-new-financial-regulator-major-supervisory-overhaul-2023-03-07/, Accessed March 21, 2024.
- ² Bradsher, Keith, “How China Obtains American Trade Secrets”, The New York Times, January 5, 2020, <https://www.nytimes.com/2020/01/15/business/china-technology-transfer.html>, Accessed May 6, 2024.
- ³ Jennings, Ralph, “Censorship of Hollywood Blockbuster Films Intensifies in China”, Voice of America, May 4, 2022, <https://www.voanews.com/a/censorship-of-hollywood-blockbuster-films-intensifies-in-china-/6557850.html>, Accessed May 6, 2024.
- ⁴ Arkin, Daniel, “NBA’s China Problem: How Global Growth Led to Geopolitical Risk”, NBC News, October 7, 2019, <https://www.nbcnews.com/news/sports/firestorm-over-hong-kong-tweet-shows-perils-nba-s-meteoric-n1063246>, Accessed May 6, 2024.
- ⁵ Gura, David, “How High Tensions Between China and the U.S. are Impacting American Companies”, NPR News, August 26, 2023, <https://www.npr.org/2023/08/26/1195711197/china-us-trade-tensions-commerce-secretary-gina-raimondo>, Accessed May 6, 2024.
- ⁶ Stempel, Jonathan, “Luckin Coffee in \$175 Mln Class Action Settlement Over Accounting Fraud”, Reuters, October 26, 2021, <https://www.reuters.com/business/retail-consumer/luckin-coffee-reaches-175-million-class-action-settlement-over-accounting-fraud-2021-10-26/>, Accessed March 21, 2024.
- ⁷ United States Congress, “Holding Foreign Companies Accountable Act”, December 18, 2020, <https://www.congress.gov/bill/116th-congress/senate-bill/945/text>, Accessed March 21, 2024.
- ⁸ Chan, Michelle, “SEC Adds Alibaba to List of Chinese Companies Facing Delisting”, The Wall Street Journal, July 29, 2022, <https://www.wsj.com/articles/sec-adds-alibaba-to-list-of-chinese-companies-facing-delisting-11659130698>, Accessed March 21, 2024.
- ⁹ Public Company Accounting Oversight Board, “News Release: PCAOB Secures Complete Access to Inspect, Investigate Chinese Firms for the First Time in History”, December 15, 2022, <https://pcaobus.org/news-events/news-releases/news-release-detail/pcaob-secures-complete-access-to-inspect-investigate-chinese-firms-for-first-time-in-history>, Accessed March 21, 2024.
- ¹⁰ Public Company Accounting Oversight Board, “News Release: Imposing \$7.9 Million in Total Fines, PCAOB Sanctions Three China-Based Firms and Four Individuals in Historic Settlements”, November 30, 2023, <https://pcaobus.org/news-events/news-releases/news-release-detail/imposing-7-9-million-in-total-fines-pcaob-sanctions-three-china-based-firms-and-four-individuals-in-historic-settlements>, Accessed March 21, 2024.
- ¹¹ Macrotrends, “China GDP Growth Rate 1961-2024”, <https://www.macrotrends.net/countries/CHN/china/gdp-growth-rate>, Accessed March 21, 2024.
- ¹² Lee, Yen Nee, “These Charts Show the Dramatic Increase in China’s Debt”, June 28, 2021, CNBC, <https://www.cnbc.com/2021/06/29/china-economy-charts-show-how-much-debt-has-grown.html>, Accessed March 21, 2024.
Yining, Xia and Wei, Han, “China’s Debt-to-GDP Ratio Climbs to Record 287.8% in 2023”, Caixin, Nikkei Asia, January 30, 2024, <https://asia.nikkei.com/Spotlight/Caixin/China-s-debt-to-gdp-ratio-climbs-to-record-287.8-in-2023>, Accessed April 26, 2024.
- ¹³ He, Laura, “Small Banks in China Are Running Into Trouble: Savers Could Lose Everything”, June 24, 2022, CNN, <https://www.cnn.com/2022/06/23/economy/china-bank-runs-protests-intl-mic-hnk/index.html>, Accessed March 21, 2024.

- ¹⁴ Lockett, Hudson, “China Allows First Commercial Bank To Go Bankrupt in Almost 20 Years”, August 6, 2020, Financial Times, <https://www.ft.com/content/014d324f-0423-4345-ab54-532b98165e29>, Accessed March 21, 2024.
- ¹⁵ He, Laura, “China Tries To Stem Growing Anger Over Frozen Bank Deposits”, July 12, 2022, CNN, <https://www.cnn.com/2022/07/12/economy/china-bank-crisis-frozen-deposits-intl-hnk/index.html>, Accessed March 21, 2024.
- ¹⁶ Li, Wenzhe, “China’s Shadow Banking in 2020–2022: An Empirical Study,” Humanities and Social Sciences Communications 11.1 (2024): 1-14, <https://www.nature.com/articles/s41599-024-02733-y>, Accessed March 21, 2024.
- ¹⁷ Bloomberg News, “China’s \$138 Billion Shadow Bank Spirals at Terrible Time for Xi”, August 14, 2023, <https://www.bloomberg.com/news/articles/2023-08-15/china-s-138-billion-shadow-bank-spirals-at-terrible-time-for-xi>, Accessed March 21, 2024.
- ¹⁸ Saeedy, Alexander and Feng, Rebecca, “Evergrande Was Once China’s Biggest Property Developer. Now, It Has Been Ordered to Liquidate”, January 29, 2024, The Wall Street Journal, <https://www.wsj.com/articles/evergrande-faces-imminent-liquidation-after-talks-with-top-creditors-break-down-4af5f657>, Accessed March 21, 2024.
- ¹⁹ Reuters, “What are China’s Wealth Management Products”, November 5, 2021, <https://www.reuters.com/world/china/what-are-chinas-wealth-management-products-2021-11-05/>, Accessed March 21, 2024.
- ²⁰ Feng, Rebecca, “Chinese Stocks Rally After Beijing Moves to Boost Market”, August 28, 2023, The Wall Street Journal, <https://www.wsj.com/finance/stocks/chinese-stocks-rally-after-beijing-moves-to-boost-market-5bf859b4>, Accessed March 21, 2024.
- ²¹ Deloitte, “Solutions: Board of Supervisors & Stakeholders”, <https://www2.deloitte.com/cn/en/pages/risk/solutions/cg-supervisory-committee-and-shareholders.html>, Accessed March 21, 2024.
- ²² Bloomberg News, “China Asks Some Funds to Avoid Net Equity Sales as Markets Sink”, August 16, 2023, <https://www.bloomberg.com/news/articles/2023-08-16/china-asks-some-funds-to-avoid-net-equity-sales-as-markets-sink>, Accessed March 21, 2024.
- ²³ Feng, Rebecca, “Big Shareholder in China? Don’t Try Selling”, September 25, 2023, The Wall Street Journal, <https://www.wsj.com/finance/stocks/china-gets-tough-on-insider-selling-to-arrest-market-slump-adc4528b>, Accessed March 21, 2024.
- ²⁴ Bloomberg News, “China Banks ‘Negative’ Finance Writers as Stock Market Sinks”, June 26, 2023, <https://www.bloomberg.com/news/articles/2023-06-26/china-bans-writers-from-weibo-for-stocks-jobless-rate-comments>, Accessed March 21, 2024.
- ²⁵ Bloomberg News, “China Weighs Stock Market Rescue Package Backed by \$278 Billion”, January 22, 2024, <https://www.bloomberg.com/news/articles/2024-01-23/china-mulls-stock-market-rescue-package-backed-by-278-billion>, Accessed March 21, 2024.
- ²⁶ He, Laura, “China Tries to Halt Stock Market Rout by Boosting Lending and Wooing Foreign Investors”, January 24, 2024, CNN, <https://www.cnn.com/2024/01/24/business/china-foreign-investors-market-rout-intl-hnk/index.html>, Accessed March 21, 2024.
- ²⁷ The Economist, “As China’s Markets Suffer, What Alternatives Do Investors Have?”, January 22, 2024, <https://www.economist.com/finance-and-economics/2024/01/22/how-to-replace-china-in-your-portfolio>, Accessed March 21, 2024.
- ²⁸ Nellis, Stephen, Freifeld, Karen and Alper, Alexander, “U.S. Aims to Hobble China’s Chip Industry with Sweeping New Export Rules”, October 10, 2022, Reuters, <https://www.reuters.com/technology/us-aims-hobble-chinas-chip-industry-with-sweeping-new-export-rules-2022-10-07/>, Accessed March 21, 2024.

- ²⁹ McDonald, Joe, “China Announces Goal of AI Leadership by 2030”, July 21, 2017, AP News, <https://apnews.com/article/id-b43da0d919ee46efb0e185668a2be263>, Accessed March 21, 2024.
- ³⁰ Bohman, Viking, “The Limits of Economic Coercion: Why China’s Red-Line Diplomacy is Failing in Lithuania and the Wider European Union”, November 22, 2021, Swedish National China Centre, <https://kinacentrum.se/en/publications/the-limits-of-economic-coercion-why-chinas-red-line-diplomacy-is-failing-in-lithuania-and-the-wider-european-union/>, Accessed March 21, 2024.
- ³¹ Ghiretti, Francesca, “How China Imposes Sanctions: A Guide to the Evolution of Beijing’s New Policy Tool”, June 6, 2023, Merics, <https://merics.org/en/report/how-china-imposes-sanctions>, Accessed March 21, 2024.
- ³² McDonald, Joe, “Foreign Companies in China Face Growing Scrutiny, Pressure”, April 28, 2023, AP News, <https://apnews.com/article/china-foreign-business-corruption-investigation-technology-113adfa55788aabb11896d8b059b32bc>, Accessed March 21, 2024.
- ³³ The New York Times, “China Expands Scope of ‘State Secrets’ Law in Security Push”, February 28, 2024, <https://www.nytimes.com/2024/02/28/world/asia/china-state-secrets-law.html>, Accessed March 21, 2024.
- ³⁴ Baptista, Eduardo and Goh, Brenda, “China Consultancy Crackdown Sends Jitters Across Foreign Business”, May 10, 2023, Reuters, <https://www.reuters.com/world/eu-ambassador-china-says-chinas-anti-espionage-law-not-good-news-2023-05-09/>, Accessed April 23, 2024.
- ³⁵ UBS Asset Management, “Unlocking the Potential of QFII and RQFII: A Guide for Investors in China”, February 28, 2024, <https://www.ubs.com/us/en/assetmanagement/insights/thematic-viewpoints/apac-and-emerging/articles/investors-in-china.html>, Accessed March 21, 2024.
- ³⁶ U.S. Bureau of Economic Analysis, “Balance of Payments and Direct Investment Position Data”, <https://www.bea.gov/international/di1usdbal>, Accessed March 21, 2024.
- ³⁷ IMF, “World Economic Outlook: A Rocky Recovery”, April 2023, <https://www.imf.org/en/Publications/WEO/Issues/2023/04/11/world-economic-outlook-april-2023>, Accessed March 21, 2024.
- ³⁸ Phillips, Matt, “Foreign Investment in China Goes Negative For First Time in Decades”, November 7, 2023, Axios Markets, <https://www.axios.com/2023/11/07/china-economy-negative-foreign-investments>
- ³⁹ Lardy, Nicholas R., “Foreign Direct Investment is Exiting China, New Data Show”, November 17, 2023, Peterson Institute for International Economics, <https://www.piie.com/blogs/realtime-economics/foreign-direct-investment-exiting-china-new-data-show>, Accessed March 21, 2024.
- ⁴⁰ Cash, Joe, “Annual Foreign Investment Flows into China Shrinks First Time Since 2012”, January 19, 2024, Reuters, <https://www.reuters.com/world/china/annual-foreign-investment-flows-into-china-shrinks-first-time-since-2012-2024-01-19/>, Accessed April 26, 2024.
- ⁴¹ Reuters, “Billionaire Investor Mark Mobius Says He Cannot Take Money Out of China – Fox Business”, March 5, 2023, <https://www.reuters.com/markets/billionaire-investor-mark-mobius-says-he-cannot-take-money-out-china-fox-2023-03-05/>, Accessed May 7, 2024.
- ⁴² United States, White House Briefing Room, “Executive Order on Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern”, August 9, 2023, <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/08/09/executive-order-on-addressing-united-states-investments-in-certain-national-security-technologies-and-products-in-countries-of-concern/>, Accessed March 21, 2024.
- ⁴³ Reuters, “China Outbound Investment Rule to be Completed by End of Year – US official”, May 8, 2024, <https://www.reuters.com/markets/china-outbound-investment-rule-be-completed-by-end-year-us-official-2024-05-08/>, Accessed May 13, 2024.

⁴⁴ Comte, Matthew, “How to Manage Supply Chain Risk During Geopolitical Unrest”, March 18, 2022, PwC, <https://www.pwc.com/us/en/services/consulting/business-transformation/library/supply-chain-geopolitical-unrest.html>, Accessed March 21, 2024.

⁴⁵ Demir, Ender and Danisman, Gamze Ozturk, “The Impact of Economic Uncertainty and Geopolitical Risks on Bank Credit”, The North American Journal of Economics and Finance 57 (2021): 101444, <https://www.sciencedirect.com/science/article/abs/pii/S1062940821000723>, Accessed March 21, 2024; Lu, Zhou, et al., “The Impact of Geopolitical Risks on Financial Development: Evidence from Emerging Markets”, Journal of Competitiveness 1 (2020), <https://www.cjournal.cz/index.php?hid=clanek&bid=archiv&cid=357&cp=>, Accessed March 21, 2024.

⁴⁶ Fiorillo, Paolo, et al., “Geopolitical Risk and Stock Liquidity”, Finance Research Letters 54 (2023): 103687, <https://www.sciencedirect.com/science/article/pii/S1544612323000612>, Accessed March 21, 2024.

⁴⁷ Wang, Yihan, et al., “Geopolitical Risk and the Systemic Risk in the Commodity Markets under the War in Ukraine”, Finance Research Letters 49 (2022): 103066, <https://www.sciencedirect.com/science/article/pii/S1544612322002999>, Accessed March 21, 2024.

⁴⁸ Reuters, “Companies Count the Cost of Ditching Russia”, July 1, 2022, <https://www.reuters.com/business/companies-count-cost-ditching-russia-2022-04-22/>, Accessed March 21, 2024.

⁴⁹ Caldara, Dario and Iacoviello, Matteo, “Measuring Geopolitical Risk”, American Economic Review 112.4 (2022): 1194-1225, <https://www.federalreserve.gov/econres/ifdp/files/ifdp1222r1.pdf>, Accessed March 21, 2024; Engle, Robert F. and Campos-Martins, Susana, “Measuring and Hedging Geopolitical Risk”, NYU Stern School of Business Forthcoming (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3685213, Accessed March 21, 2024.

⁵⁰ United States, Board of Governors of the Federal Reserve System, “2023 Stress Test Scenarios”, February 2023, <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20230209a1.pdf>, Accessed March 21, 2024.

⁵¹ United States House of Representatives, The Select Committee on the CCP, “Reset, Prevent, Build: A Strategy to Win America’s Economic Competition with the Chinese Communist Party”, December 12, 2023, <https://selectcommitteeontheccp.house.gov/media/policy-recommendations/reset-prevent-build-strategy-win-americas-economic-competition-chinese>, Accessed March 21, 2024.