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In a Time of Monsters

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While change is a constant, there are periods of time in which the extent and nature of change are more pronounced. We are living through one such period, in which a dominant global political economic configuration is giving way to new arrangements. For the past century or so, the global economic system has revolved around the dominant role of the American economy and, to a lesser extent, the economies of the transatlantic colonial powers. These "advanced economies" functioned as systematic cores, which extracted resources and wealth from peripheral, or "developing" economies.

This has been, broadly speaking, a dominant pattern - particularly for the evolution of Western capitalism - for the past 600-700 years.¹ During this period, insofar as Western capitalism evolved, the processes of capital accumulation were accompanied by spatial expansion and the evolution of a political-military system that buttressed the economy of expropriation and uneven exchange. Emanating from the merchant capitalism of Venice and Genoa and progressively expanding through the periods of Dutch, English, and now American dominance, the multinational economic system became increasingly global in nature. Previously autonomous territories were progressively integrated into the ever-expanding networks of colonial exploitation. South America, Africa, West Asia, South Asia, and Southeast Asia were inveigled into the networks of colonial expansion during the 16th to 19th centuries, and Northeast Asia succumbed during the 18th and 19th centuries.

¹ See Giovanni Arrighi, *The Long Twentieth Century: Money, Power, and the Origins of Our Times* (New York: Verso, 1994). Aside from the history of Western capitalism from around the 1300s onwards, there is of course another non-Western history, which I will not touch on in detail in this essay.

Periods of chaotic transition punctuated the various eras of national domination. Wars were frequent, and internecine conflicts between different sections of elite vested interests featured as political alignments were reconfigured. Domestic and international economic structural changes prefigured the transformation of the political integument and undergirded the shifting capacity of states to secure and sustain positions of relative hegemonic authority. The historical transitions to date tended to see the "passing of the baton" from one dominant Western power to the next, with the core structural features of center-periphery capital expansion and accumulation remaining largely untouched. Who occupied the main position at the system's heart was the principal variable.

Today, we are living through another period of systemic turbulence, punctuated by episodes of chaos and ultimately leading to an evolutionary transformation. However, I would suggest, there is a qualitative difference in this current phase of transitional turbulence and chaos compared to the historical pattern, namely, that we are witnessing not so much the passing of the baton from one hegemon to another, but a qualitative transformation of global configurations from one that has predominantly been unipolar or mono-nodal (center-periphery) to one that is multi-nodal in nature. This essay explores the system dynamics and some of the features of the contemporary period of turbulence.

State of Play

The relatively stable patterns of capital accumulation and expansion that marked the post-World War II period to early 1970s have given way to episodes of instability and turbulence. The stagflation of the 1970s catalyzed a decade of radical national and international economic restructuring, ushering in a period of intensified industrial hollowing out of economic centers (the US and Europe in particular), the decline of organized labor, and the expansion of national and global finance. Two decades of notional stability, for developed economies at the very least - what former Chairman of the Federal Reserve Ben Bernanke boasted as the "Great Moderation" - came shuddering back to earth in 2008 with the global financial crisis. Finance capital had come to increasingly dominate the global center, with (labor intensive) production activities progressively relocated elsewhere.

Industrial hollowing out does not necessarily imply a diminished financial value of manufacturing output in absolute terms; however, it speaks of a relative decline in output value as a proportion of total economic output (measured in gross value added or GDP terms) and a dramatic decline in the absolute and relative significance of employment in manufacturing. Hollowing out began in the late 1960s and gathered pace throughout the 1970s and 1980s across much of the Western world. Put plainly, the phenomenon pre-dated the emergence of China as a global manufacturing and trade powerhouse by at least two decades. The continued expansion of financial capital in the developed world has been a constant feature of system evolution ever since.

The underlying drivers of these structural changes are reminiscent of those that underpinned the systemic disruptions of previous episodes of turbulence, chaos, and transition. The next section explains the conceptual framework of analysis, before I return in the last section of the essay, to explore the features of our current period of system turbulence. As the next section is quite conceptual and abstract, for those not too interested in the theoretical aspects of the analysis, they can skip to the final section.

Conceptual Framework

The accumulation of capital and the expansion of capital accumulation in monetized form have been, and remain, the dominant driver of economic system change.² Capital accumulation through real economy use-value creation and sale is relatively time and energy intensive, compared to the possibilities of monetized accumulation through the creation and trading of financial instruments. Thus, over time, in conditions where private capital accumulation is dominant, finance capital tends to grow at the expense of industrial capital.³ This creates systemic imbalances at a national level, catalyzing social and economic instabilities, which can have spillover effects on the global economic system as a whole.

Economic systems can be understood as *energy transformation systems*, which also take the form of *value transformation and exchange processes*. The material world is defined by a given amount of energy/matter, which takes different forms. This is a foundational premise

- 2 The theoretical framework outlined below is inspired by the work of Giovanni Arrighi, *The Long Twentieth Century: Money, Power, and the Origins of Our Times* (New York: Verso, 1994). It also draws on my interpretation of Marx's discussion of the system of capital circulation contained in Volume II of *Capital*. See Warwick Powell, *China, Trust, and Digital Supply Chains: Dynamics of a Zero Trust World* (London: Routledge, 2023).
- 3 In a political economy in which finance is predominantly controlled by public institutions, the dynamics of credit and capital formation can be quite different. The case of China's public banks' role in that country's economic development is instructive. See Kun Duan, Plamen Ivanov, and Richard Werner, "Deciphering the Chinese Economic Miracle: The Resolution of an Age-Old Economists' Debate - and Its Central Role in Rapid Economic Development," *Review of Political Economy* (April 2023): 1–25.

of thermodynamics. The amount of energy/matter in the universe is constant. Energy can neither be created nor destroyed; through the application of "work," forms of energy are harnessed, combined, and transformed. This is what economic systems are about. Human beings are biological energy transformation entities that harness the energies of food (among other things) to be able to mobilize and deploy energies by way of various activities. Humans gather resources (as matter) and harness forms of energy (heat, motion, etc.) to transform resources into useful forms.⁴ Things that humans can *use* - either for the production of other things or for final human consumption - can be called *use values*. Overall, we can call this the *real economy of use values*.

Economic systems that involve a division of labor require ways in which different nodes of "work activity" interact with others to access and deploy resources to enable successful energy transformation to take place. Put another way, different economic agents engage in various forms of activity and trade with others because none are fully self-sufficient. Due to the difference in time between when resources are required and when new resources are created and dispatched, the circulation system of energy transformation requires a unit of account and a medium of exchange to enable trade to take place. This function is fulfilled by what can be called *money capital* or in more abstract terms an *exchange value*. Money capital is an *unconditional exchange value* because *money capital* can - in any applicable jurisdiction - be exchanged for another *exchange value* or for *use values*.

Energy transformation systems are, therefore, activated through the deployment of money capital to mobilize other resources (energy, humans, machines, and matter) to put them to work. Money capital can take a number of forms. Broadly speaking, it can be either equity or credit. In either case, both involve a duality of exchanges: (1) the exchange of money capital for fixed capital (e.g., machinery) or means of production (energy, labor resources/time, know-how, raw materials, etc.) and (2) at the same time the exchange of money capital for *fictitious capital*.

Fictitious capital is a *conditional exchange value* and is a claim on future *monetized value* (a claim on future payment of *money capital*, namely an *unconditional exchange value*) or future *equity value* (e.g., an economic resource that has the potential to be converted into money capital or

⁴ See Steve Keen, Robert U. Ayres, and Russell Standish, "A Note on the Role of Energy in Production," *Ecological Economics* 157 (March 2019): 40-46.

be consumed). Examples of these two are, respectively, (1) interest on loans/bonds or dividends paid on shares, and (2) options or futures contracts that enable the holder to convert those into ownership of some resource or another. Additionally, *fictitious capital* can be exchanged for other forms of *fictitious capital*, and *money capital* can also be exchanged for other forms of *fictitious capital*. Here, I am talking about the markets for derivatives, processes of refinancing, etc.

Circuits of production and circulation are critical to understanding the dynamics of capital formation, accumulation, and expansion. The *real economy of use values is an energy and time intensive system* through which *money capital* is committed at the beginning of the circuit so as to enable the production and sale of *use values* to conclude the circuit.⁵ The sale of *use values* at the completion of the circuit returns *money capital* to the capitalist/producer. The amount of *money capital* returned through this process must exceed that committed for the process to be reproducible. Retained profits are hoarded or invested. While there are resource barriers to market entry that vary from one type of real economy activity to another, the real economy of *use value* production is simultaneously impacted by the dynamics of market competition.

In conditions of market competition, individual producers and service providers are driven to maximize capacity utilization and revenues to enable cost recovery at a minimum. They thus pursue intense price competition, which drives down the average rate of profit. Those best able to retain or capture revenue share available profit. Those that lag, fail. These competitive dynamics also propel other forms of responses so as to preserve profit margins or increase margins.

1. Firms can respond by seeking new markets so as to expand revenue opportunities, and also enable access - temporarily at least - to above-average profits. This spatial or demographic expansion is the basis of the expanded globalization of economic systems. Yet as competitors catch up or emerge, the advantages of this move diminish.
2. As Austrian economist Joseph Schumpeter long ago described, firms are also compelled to innovate new processes or new products that can either (1) reduce costs to expand the spread between costs and revenues or (2) introduce new products

⁵ See Augusto Graziani, *The Monetary Theory of Production* (Cambridge: Cambridge University Press, 2003) for a discussion of the role of money in systems of production.

for which there is little to no competitive pressure, therefore enabling the firm to access above-average profits. These activities require innovation and research and development (R&D), all of which take time and involve uncertainty as to future success. Uncertainty can repel firms from innovation.

3. Firms can seek to secure and expand revenue share through mergers and acquisitions, which effectively reduce competition. This mitigates the effects of competition on average profits.
4. Firms can seek to secure various forms of economic rent privileges through ownership of certain exclusive rights (e.g., intellectual property, patents, licenses, land use permits, etc.) which also mitigate the impact of competition on profit margins. In simple terms, economic rents are *above average profits*.

As *money capital* and *fictitious capital* are produced and, in due course, accumulated through the processes of real economy valorization,⁶ these value forms can be activated as monetized *exchange value* creating systems. *Money capital* generally isn't idle, though some is likely to be hoarded as a reserve while other portions are invested in various other activities. The investment could be to expand fixed capital formation (new machinery, additional factories, or facilities) or could be channeled into fictitious capital instruments. In other words, money-as-exchange value can be exchanged for fictitious capital through the acquisition of instruments such as shares, bonds, etc.

6 New money capital is continually being created and injected into the circulation system. This takes place either as the creation of money by monetary authorities or by way of credit issued by banking institutions. Credit is a necessary part of the production and circulation system, as its growth is a direct response to the withdrawal of money capital from circulation by firms (profit taking; savings/hoarding). As production and capital accumulation expand, there is paradoxically a shortage of money in circulation; credit or general money supply expansion is a necessary feature of a monetized system of production to address money shortages. See Farzad Javidanrad et al., "Theorizing the Process of Financialization Through the Paradox of Profit: The Credit-Debt Reproduction Mechanism," *Journal of Post Keynesian Economics* 47, no. 3 (April 2024): 566-588.

Monetized *exchange-values-in-exchange-for-exchange-values* systems are relatively low in energy intensity, and monetization circuits are comparatively fast. In less abstract terms, outside the time-consuming and energy-intensive world of commodity and service production, the expansion of capital accumulation systems enables the creation and expansion of financialized systems and markets. The creation of financial instruments is relatively quick and consumes little energy. The ability for such instruments to be bought and sold is also relatively fast; indeed, automated trading algorithms make trading securities and derivatives (that is, fictitious capital) essentially instantaneous.

An additional feature of the system of financial instrument creation and trading is that, while they are fast and consume relatively little energy

- nominally meaning that there are few barriers to market entry - they are usually activities that can only be conducted by those granted with various regulatory-protected rights and authorities by way of licenses and permits. In other words, the creators of finance capital and fictitious capital are limited in number and can earn *economic rents* through their activities and privileged status.

This has been a rather elaborate and abstract presentation of the forces that work through the systems of value transformation, capital formation, and capital accumulation. It shows how there are powerful tendencies for the formation of financialized instruments to enable low-energy, high-speed monetization as an alternative to the energy- and time-intensive work of commodity or service production.

Today's Turbulence

I want to highlight four aspects to draw some threads together.

1. First, I will overview the dynamics of financialization and hollowing out of real economy use-value creation in advanced economies and the spatial shifts in the distribution of productive capacities over the past half century.
2. Second, I reflect on the emergence of Big Tech and its intersection with (1) the drive toward economic rents and (2) the weaponization of technology as US technology became synonymous with global technology. This shift has prompted what I have previously described as a *Digital Westphalia-to-be*.⁷
3. Third, I address energy transitions. Since economic systems are energy transformation systems, the economics of energy are central to the future trajectory of value creation and circulation. Emerging technologies also impact the global geopolitical-economy configuration, which brings me to my final point.
4. Finally, I reflect briefly on the reemergence of concerns over sovereignty and how these are not only reactions to the overreach of US-dominated imperial exploitation and hegemony, but also a response to the possibilities of a multi-nodal network of sovereign capabilities made possible

⁷ Warwick Powell, "Digital Westphalia: A Bulwark to the Descent into Digital Barbarism?" *TI Observer* 37 (October 2023): 1-6.

by transformations in energy systems and information technologies.

Financialization and Hollowing Out

The expansion of financialization in advanced economies has been a key feature of development over the past 40 years. Today, the annual global value of trade in goods and services is in the order of over 40 trillion USD. By way of contrast, the annual value of trade in foreign exchange and foreign exchange derivatives is in excess of 1,200 trillion USD.⁸ The total value of the derivatives market is as large as quadrillions, according to some estimates.

Global trade in goods and services has also transformed from a situation in which the US was the dominant trading partner of most countries in 1990 to today, where China now occupies the position. This shift is the result of the changing spatial distribution of productive capacities. Today, China is the world's only manufacturing superpower, responsible for 29% of value added in manufacturing (2021) compared to the US - the next country - with 12%.⁹ Conversely, the US, US dollar, and US dollar-denominated financial instruments are the dominant aspects of the world of money capital and fictitious capital. The expansion of the finance sector in the US was an expression of the dynamics described earlier, as increased accumulation led to a progressive diversion away from the real economy of use-value creation to the economy of fictitious capital trading.

American industrial hollowing out is a consequence of the financialization of the political-economic structure over the past five decades. Professor of Finance at RMIT University Imad Moosa,¹⁰ Lecturer in Economics at Goldsmiths, University of London Maria Ivanova,¹¹ Assistant Professor at the London School of Economics and Political Science Benjamin Braun,¹² and Professor of Economics at the New School for Social Research William Milberg and Associate Professor of Economics at the New School for Social Research Deborah Winkler,¹³ among many others, have shown how growth in financialization since the 1970s adversely impacts capital accumulation in American industry; the growth of the former is the direct corollary of the hollowing out of the latter. Using the IMF's index of "financial development," Moosa shows the relationship between the expansion of financialization and

8 "OTC Derivatives Statistics at End-December 2023," Bank for International Settlements, accessed September 19, 2024, <https://www.bis.org/publ/otchy2405.htm>.

9 Richard Balwin, "China Is the World's Sole Manufacturing Superpower: A Line Sketch of the Rise," *CEPR*, January 17, 2024, <https://cepr.org/voxeu/columns/china-worlds-sole-manufacturing-superpower-line-sketch-rise>.

10 Imad Moosa, *Financialization: Measurement, Driving Forces and Consequences* (Cheltenham, England: Edward Elgar Publishing, 2023).

11 Maria Ivanova, "Inequality, Financialization, and the US Current Account Deficit," *Industrial and Corporate Change* 28, no. 4 (March 2019): 707-724.

12 Benjamin Braun, "Fueling Financialization: The Economic Consequences of Funded Pensions," *New Labor Forum* 31, no. 1 (January 2022): 70-79.

13 William Milberg and Deborah Winkler, "Financialization and the Dynamics of Offshoring in the USA," *Cambridge Journal of Economics* 34, no. 2 (March 2010): 275-293.

the contraction of employment in American manufacturing.¹⁴ Indeed, concerns about the decline of American manufacturing go back to the early 1980s, when figures like Ira Magaziner, former Senior Advisor for Policy Development to President Bill Clinton, warned of declining productivity and competitiveness. This predates the growth of Chinese industrial capability by two decades.

Financialization coincided not only with the decline in manufacturing employment - the major source of political complaints driving the political cycle - it also enabled a massive concentration of financial wealth and economic power. The wealthiest 10% of Americans now own 93% of stock value, according to Federal Reserve data.¹⁵ Rising stock prices benefit the few, but reinforce the deindustrialization dynamics of capital accumulation in a highly financialized America. According to a recent Oxfam report, the top 1% of American corporations own 97% of corporate assets in the US.¹⁶ Economists Spencer Kwon, Ma Yueran, and Kaspar Zimmermann have shown the long-term trend for the concentration of American capital across all industries, with manufacturing concentration dynamics taking place most obviously in the 1970s.¹⁷ Financialization, along with the concentration of ownership and market concentration, has all been pivotal to the structural transformation of the American political economy.

Big Tech and the Weaponization of Technology

Aside from the expansion of the financial sector, the US economy has also seen dramatic growth in the technology sector. Technology platforms have not only expanded (usually off the back of substantial US government support by way of Department of Defense contracts), but they have also secured the privileges of economic rent. The economic rents of US Big Tech are evidenced by profit margins far in excess of marginal costs (indicative of limited competition) and are monetized through the intersection of Big Tech with markets of fictitious capital. Big Tech is listed on public exchanges, enabling the monetization of fictitious capital-based value to a relatively small number of shareholders.

Set against these institutional privileges, US Big Tech also expanded globally, creating an environment in which US technology has become synonymous with global technology. Few countries have remained

14 Imad Moosa, "Deindustrialization and Financialization: Two Sides of the Same Coin?," *ElgarBlog*, August 21, 2023, <https://elgar.blog/2023/08/21/deindustrialisation-and-financialisation-two-sides-of-the-same-coin/>.

15 Jennifer Sor, "The Wealthiest 10% of Americans Own 93% of Stocks Even with Market Participation at a Record High," *Yahoo Finance*, January 10, 2024, <https://finance.yahoo.com/news/wealthiest-10-americans-own-93-033623827.html>.

16 *How Do The Largest US Corporations Contribute To Inequality?* (Washington, D.C.: Oxfam America, 2024), https://webassets.oxfamamerica.org/media/documents/Corporate_Inequality_Framework.pdf.

17 Spencer Kwon, Yueran Ma, and Kaspar Zimmermann, "100 Years of Rising Corporate Concentration," *American Economic Review* 114, no. 7 (July 2024): 2111–40.

unaffected by the ubiquity of US technology platforms, hardware, and software. The effects have been far from benign.

For the past 30 years, much of the world's technological architecture - whether it's hardware or software, including the all-pervasive operating systems - has been dominated by American Big Tech. US big technology firms have led the world in the development of information and communications technologies, equipment, and software applications. By securing positions of rent-seeking advantage, these firms have garnered super-profits and also enabled US firms and government regulators to exercise outsize influence over an increasingly digitized globe.

In their recent book, *Underground Economy: How America Weaponized the World Economy*, US researchers Henry Farrell and Abraham Newman document the history of the US security state progressively transforming the global networks of fiber optic cables, routers, switches, and data centers into tools of domination. Amazon estimates that around 70% of global data traffic goes through the data centers concentrated in Northern Virginia.¹⁸ SWIFT - the global bank-to-bank platform - operates a data center in Northern Virginia.

After 9/11, as the US ramped up its global "war on terror," intelligence agencies and other US government departments increasingly exploited this reality to initially gather intelligence on the affairs and dealings of others around the world and, in time, to intervene in the transnational payments systems to weaponize the US dollar international finance network. As the "war on terror" ramped up, the US Treasury demanded access to SWIFT's data. Although similar requests had been previously refused, SWIFT eventually relented. The US gained access to a treasure trove of real-time data on global financial transactions. Access to data was one thing, but it wasn't long before the US took the next step, responding to suspicions that Iran was using SWIFT to finance its nuclear program. Although similar requests were refused in the past, this time SWIFT gave in. The US gained an unprecedented real-time look into global financial transactions. US officials pushed for Iranian banks to be cut off from the global financial network.¹⁹ SWIFT yielded to pressure once more.

¹⁸ Alan Yu, "Data Centers Transformed Northern Virginia's Economy, but Residents Are Wary of More Expansion," *WHYY*, June 28, 2024, <https://whyy.org/segments/northern-virginia-residents-are-wary-of-more-data-centers>.

¹⁹ Rachelle Younglai and Roberta Rampton, "US Pushes EU, SWIFT to Eject Iran Banks," *Reuters*, February 16, 2012, <https://www.reuters.com/article/us-iran-usa-swift/u-s-pushes-eu-swift-to-eject-iran-banks-idUSTRE81F00I20120216/>.

The weaponizing of SWIFT has now extended to the confiscation of the USD reserves of the Venezuelan and Afghan governments, and the sanctioning of assorted entities and countries such as North Korea, South Sudan, Belarus, and Myanmar, preventing them from facilitating cross-border transactions. Russia is the most recent case.

Cross-border transactions conducted in non-USD terms are growing, as currency multipolarity continues to expand. Reduced dependency on USD loans or foreign direct investment is also an emerging feature of the global financial landscape. I have also discussed these trends in more detail previously, so will not dwell on the issue any further here.

Energy Transitions

If economic systems are fundamentally energy transformation systems, the ability to reduce the costs of harnessing and using energy surely lies at the heart of economic competitiveness and the system's ability to realize real productivity growth. Putting aside climate change, and the so-called Jevons Paradox wherein improved energy efficiency leads to an aggregate increase in energy use (rather than reduced energy consumption), the core observation in the context of this essay is that the development of renewable energy systems and the dramatic fall in their costs, driven by Chinese capabilities, create possibilities of a more even distribution of productive capacities globally.

There is no economic development without energy development. The correlation between energy production, consumption, and overall economic growth is tight and positive. The ability of countries - heretofore excluded from low-cost energy production at scale - to access technologies that enable them to participate in increasingly complex energy transformation systems (that is, value-added activities) represents a transformative agent that has centrifugal potential. The ability to harness the energy from nature, such as sunlight, wind, and water motion, and store the energy at relatively low cost is now possible in ways that were previously unattainable. The difference in absolute and marginal cost per unit of energy generated by means of different technologies (traditional fossil fuel compared to renewables plus battery storage) is now tilting in favor of the latter. Once installed, renewable energy capture and storage systems are in effect indigenous to the locality and enable the development of energy sovereignty that was historically limited.

Sovereignty and Multi-Nodal Systems

For much of the past century or so, the US political economy has been the pivotal force in the global economic setup. The advanced economies of the UK and Western Europe have also been at the center of the global system. However, over the past fifty years, the center-periphery structure has begun to change. Initially, these shifts took place as manufacturing activities began to globalize. Industrial capital substituted machinery for labor (and continues to do so today) and, where more cost-effective, established operations in regions with relatively low labor costs. At the same time, the finance sectors in the West - those of fictitious capital (stocks, derivatives, insurance, property funds, etc.) and money markets generally - expanded rapidly to become the dominating branches of national and, in many respects, global, capital.

Financialization via USD loans and USD-denominated capital investments into developing nations effectively locked in a form of post-colonial economic settlement. While sovereignty was ostensibly realized through the processes of post-war decolonization struggles, effective sovereignty was curtailed through the strength of the financial and other value-flow networks in place. The center-periphery dynamic was reinforced, as shown by a recent study on the rates of return from foreign assets held by first world nations.²⁰

The growth of China changed this. China became a manufacturing powerhouse and a major trading partner for over 140 nations. China offers pathways to trade and capital formation that are no longer dependent on the historical centers of the global economic system. The development of national currency-based cross-border transaction systems is beginning to enable the establishment of financial sovereignty. The advent of technology systems independent of US Big Tech enables the creation of a Digital Westphalia, which emphasizes data sovereignty while enabling secure cross-border interoperability. Open-source systems undermine the privileges of economic rent that have defined the business model of American Big Tech. Lastly, the dramatic reduction in the costs of renewable energy capture/generation and storage technologies achieved in China opens up the vista for developing countries to overcome one of the biggest historical hurdles of all: sovereign, accessible, and low-cost energy to fuel modernization.

²⁰ Gaston Nievas and Alice Sodano, "Has the US Exorbitant Privilege Become a Rich World Privilege? Rates of Return and Foreign Assets from a Global Perspective, 1970-2022," *World Inequality Lab Working Paper* 2024, no. 14 (April 2024).

The dominant theme of today's turbulence revolves around the reassertion of national sovereignty. This is pitted against the economic, political, and cultural hegemony that has dominated the landscape for the past half millennia, in which the West has pursued a strategy of "civilizing the savages" in the name of liberalism and modernity. The privileges of the center-periphery global setup are coming to an end. Nations are not only asserting their sovereignty but, through the economic transformations that are taking place, are in a position to grasp and anchor those claims. Little wonder that the vested interests of finance capital, technology capital, and military capital in the collective West are fighting back.

We live not only in turbulent times but also in an era of chaos. Conflicts rage in over 50 nations today. The collective West is deeply entangled in most of these. As Italian Marxist philosopher Antonio Gramsci once observed, "The old world is dying, and the new world struggles to be born: now is the time of monsters."

The Global Economy in an Era of Geopolitical Tensions and Uncertainty

Liu Baocheng



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Introduction

From a rational perspective, the interconnected nature of today's global economy means that no nation is an island. Nonetheless, as geopolitical tensions escalate and economic integration faces unprecedented challenges, the global economic landscape appears increasingly brittle and uncertain. The fundamental reason for this boils down to the exacerbating distrust among nations, organizations, and peoples, manifested in rising political ethnocentrism, nationalism, and populism, making global stability susceptible to the pressures of beggar-thy-neighbor diplomacy, unpredictable economic policies, and blunt impulses over rapid technological advancements. This article explores the complexities of the global economy amidst these tense times, offering an analysis of current economic conditions, potential future scenarios, and strategic responses to mitigate risks.

Geopolitical Tensions and Economic Fragility

The rise in geopolitical tensions—be it through ideological differences, territorial conflicts, or trade disputes—has led to a more fragmented global landscape. Alarmingly, military expenditures among major countries have outpaced their economic growth rates. This fragmentation poses significant threats to global supply chains that are crucial for the smooth operation of the global economy. In response, countries have stepped up the relocation or duplication of supply chains to avoid geopolitical hot-spots and unreliable partners, a move that could lead to increased costs and reduced efficiency. International direct flights are considerably

reduced as airlines suffer significant losses due to Russia's airspace restrictions. A container ship traveling round trip from Shanghai to Rotterdam now incurs an additional cost of up to one million USD by navigating via the Cape of Good Hope as the Red Sea is under frequent attack, which has also caused a drain on Egypt's coffer, heavily reliant on the income from the Suez Canal.

The current geopolitical climate suggests a shift toward economic nationalism and reduced globalization. Countries prioritize domestic industries and manufacturing to decrease dependency on volatile global markets. New laws with protectionist components, such as the US 2021 Bipartisan Infrastructure Law, the 2022 CHIPS and Science Act, and the 2022 Inflation Reduction Act, are designed to lure and push companies to reinvent their supply chain strategies. Onshoring, reshoring, and nearshoring have become buzzwords in executive meetings. Walmart pledged in 2021 to spend an additional 350 billion USD through 2030 on items made, grown, or assembled in the US.

Even worse, tariffs and other policy instruments are being politicized in favor of allies and weaponized to target geopolitical adversaries. In response, Chinese companies are incentivized to invest in developing countries to circumvent US punitive tariffs. To avoid the countervailing duties on Chinese e-vehicles, some Chinese automakers may reconsider investing in EU countries. As the EU Cross Border Adjustment Mechanism (CBAM) is ready to be implemented, a host of exports, especially from developing countries, will incur extra costs due to their carbon footprints. Ironically, the Global North's pledge to offer 100 billion USD to assist green transitions in the Global South has never been fulfilled.

The resilience of global supply chains is under scrutiny as countries reassess their economic strategies in response to increased risks from ideological and geopolitical tensions. Trade disputes are a primary driver of current economic uncertainty. These disputes often lead to tariffs and trade barriers, impacting global markets and economic stability. For instance, the US-China trade war has had wide-reaching effects on the global supply of electronics and agricultural products, influencing everything from production costs to consumer prices.

Since the World Trade Organization (WTO) as a multilateral trade platform is drydocked in an impasse, despite cries for reform, countries have resorted to regional trade agreements as buffers against global disruptions. However, in the absence of a dispute settlement mechanism comparable to the WTO appellate body, compliance with these agreements hinges on the cooperation of the parties involved. Companies are diversifying their supply sources, shifting from a focus on

efficiency to security—from the traditional "low cost" to the refreshed "best cost" strategy.

Under the ostentatious pretext of shifting from free trade to fair trade, these maneuvers serve to distort the proper functioning of market mechanisms, worsen the trade conditions for developing countries, fracture supply chains realized over decades of globalization, and slow trade growth, forcing a reevaluation of economic partnerships.

The global economy is navigating through a tumultuous period marked by geopolitical tensions and economic uncertainties. By understanding the intricate interconnections and potential risks, nations and businesses can devise strategies to navigate this complex landscape effectively. Building resilient supply chains, regulating emerging technologies, and fostering international cooperation are pivotal in shaping a stable and prosperous global economic future.

The Real Economy Versus High Finance

Financial markets often react more to investor sentiment, speculative activities, and future expectations than the state of the real economy. For instance, stock prices can rise despite high unemployment rates if investors believe future profits will remain strong or if monetary policies favor investment returns. Over the past two decades, there has been a trend toward financialization, which refers to the increasing dominance of financial actors, motives, institutions, and markets in the economy. This shift has diverted focus from real economy to Wall Street, sidestepping traditional economic activities like production and trade. When priority is placed on short-term gains and speculative profits for the sake of artificial prosperity over long-term economic stability and growth, a disconnect grows between the real economy—the production and delivery of actual goods and services—and speculative high finance, characterized by stock markets and a dazzling array of financial products.

Financial markets exert a significant influence on economic policy. Governments and central banks often adjust interest rates or provide bailouts for financial institutions to appease stock markets and investors, with the belief that strong financial markets equate to a healthy economy. This approach can neglect the real economy, driving capital to flow into financial products rather than sectors that contribute most to real economic growth and societal needs, such as job creation, wage growth, infrastructure investment, public health, and education that yield

long-term benefits to people's livelihood. As a result, the economy becomes more susceptible to financial crises, as seen in the 2008 global financial crisis, where the collapse of financial markets had severe repercussions for the real economy worldwide, leading to recessions, job losses, and decreased public spending on essential services. When investors harvest windfall gains with speculative capital, workers and consumers see fewer benefits from economic growth.

The discussion around the real economy versus high finance is integral in shaping policies that truly reflect and support broader economic well-being, rather than just the financial sectors. This alignment is crucial for achieving sustainable growth and equitable economic development.

The Specter of an AI Bubble

Investors are rushing to the shore in artificial intelligence (AI) lest they miss a big win amid the revolutionary changes, which are expected to influence industrial operations and consumption patterns. Capital is piling up for companies working on AI, machine learning, and related technologies, hoping to get ahead during this major technological shift. However, it must be cautioned that AI technology is often subject to hype, with media and industry leaders sometimes portraying it as a panacea to a wide array of problems. This can lead to unrealistic expectations about what AI can achieve, at least in the short run before investment patience is worn out.

While the influx of funds and interest can accelerate AI research and development, it can also lead to a misallocation of resources, with too much capital going into less viable projects while potentially more impactful innovations are overlooked. In addition to the technological challenges and fierce competition that will wash out a large number of players, the monetization of AI technologies remains uncertain, and ethical debate and regulatory discrepancies loom large, creating challenges for investors and policymakers. With so much capital chasing a limited number of opportunities, valuations of AI companies may reach unsustainable levels, creating a bubble-like scenario where prices are driven by speculation rather than economic value. Cases of fraud have time and again popped up as a result of venture capital and government subsidy.

One thing is certain, as in any major technological advancement, the divide between rich and poor countries, between open and isolated societies will be further widened. While the application of AI may proliferate around the world, the

rule setting will be centralized in the hands of the few. It is worth ringing the alarm that, unlike the previous industrial revolutions that freed people from their manual toil, this round of AI revolution, if poorly governed, shall be leveraged to penetrate people's mind frames that are exposed to manipulation by a handful of oligarchs and hegemons.

Like other bubbles, if the growth in investment and valuations is not supported by corresponding advancements and practical implementations that generate expected earnings from the market, there could be a risk of a market correction. This would affect not only individual companies but potentially the broader technology sector. Should this bubble burst, it could lead to significant economic fallout which will not only impact economies heavily invested in this technology, but the entire world, who will pay the price as the fallout morphs into a global financial contagion.

Understanding and identifying an AI bubble requires careful analysis of investment trends, technological advancements, market valuations, and the broader economic landscape. It's important for investors and stakeholders to critically assess the capabilities and limitations of AI technologies and to align their expectations and strategies accordingly. Robust regulatory frameworks are needed to mitigate risks associated with AI development and deployment, ensuring ethical guidelines and preventing monopolistic behaviors while fostering a healthy AI ecosystem that contributes to economic growth without exacerbating inequalities.

Future Outlook and Proposed Solutions

The global economic outlook remains uncertain, but strategic policies and cooperative international relations could help stabilize the global market. To shape resilient and sustainable supply chains, the function of market mechanism needs to be re-envisioned within a global landscape where the division of labor, based on comparative advantages, contributes to a prospect of shared prosperity through open-minded cooperation. For this common goal, trust needs to be rebuilt around the overarching theme of peace and development. Cognitive biases have to be eliminated among national and corporate leaders who remain fetish about a zero-sum game where temporary military or technological prowess brings unfair gains. Instead of engulfing sovereign territories or controlling other regimes by might, nations can secure their futures through international cooperation and fair competition. True national security can only be enhanced by national strength via fair play on the global stage.

No moment in history has required more responsible leadership and stewardship apace with the times than today. Since many have expressed discontent with the existing global order, new international institutions and agreements resting on equitable grounds must be established to manage economic policies and resolve disputes effectively. Investment needs to be directed toward green technologies, public health, and education to foster long-term financial integrity and economic resilience. Any technological breakthrough is a double-edged sword, and AI is no exception. This breakthrough must be kept in the hands of people, and cater to the needs of human advancement. How AI can be adapted to enlighten people around the world and to prepare workforces for future economic conditions is a daunting task for investors, leaders, and academics to engage multiple stakeholders to work on in a transparent, accountable, and sustainable manner.

Financialization, De-Risking, and "Over-Capacity": Reshaping the Global Supply Chain

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The ascendance of the global supply chain is a hallmark of the hyper-globalization era, spanning from the 1990s to the early 2010s. The global supply chain is driven by a confluence of factors, including the neoliberal policies promoted by the West that forced and cajoled countries to deregulate and liberalize trade and investment flows, the financial interests of transnational corporations (TNCs) in pursuing cost-saving and overseas markets, and the enabling technological innovations in telecommunication and containerization. At its peak, the global supply chain accounted for about 60% of global trade.¹ The global supply chain has exerted wide-ranging influences on the global economic landscape, reshaping the division of labor, the distribution of socio-economic costs and benefits, and the balance of the economic powers among different countries. Yet since the 2008 global financial crisis, the expansion of the global supply chain has stalled, due mainly to the unsettled financial order and rising uncertainty. In 2011, global value chains stopped expanding. They have not grown again since. The COVID-19 pandemic, the Russia-Ukraine war, and the Middle East conflict have further disrupted and impaired the global supply chain. How the global supply chain will evolve is a highly debated and consequential question. To address the question, one must zoom in on two countries, China and the United States, two key nodes in the global supply chain. The relationship and interplay between these countries will doubtless continue to reshape the global supply chain and produce tremendous geopolitical and geoeconomic implications. In this essay, I will focus on the following

¹ Marcel Timmer et al., "An Anatomy of the Global Trade Slowdown Based on the WIOD 2016 Release," *GGDC Research Memorandum* 162 (December 2016): 1-65, https://www.rug.nl/ggdc/html_publications/memorandum/gd162.pdf.

four-fold questions: how financialization in the US propels the formation of the global supply chain; why the United States intends to reconfigure the global supply chain through de-risking, reshoring, and friendshoring; how China's integration of global supply chain has evolved over time; and finally, what are the impacts of the United States' actions on its own economy, China's economy, and the global economy.

Financialization Drives the Global Supply Chain

Financialization in the United States (and, to a lesser degree, in other advanced Western countries) has played a crucial but often understated role in driving the global supply chain. Financialization has taken shape in the United States since the 1980s. With rampant financial deregulations and financial "innovations," financial markets and institutions have elevated their presence in the economy and gained increasing power to shape the corporate world. The four "money machines" of modern finance - high-yield debt, securitization, arbitrage trading, and modern derivatives - have dominated the financial system and remunerated Wall Street handsomely. However, high finance has produced two perverse consequences. First, financial speculation has led to a highly fragile financial system susceptible to boom-bust cycles. From the Black Monday stock market crash in the late 1980s to the savings and loan crisis in the late 1980s and early 1990s, to the dot-com bubble burst in the late 1990s and early 2000s, and to the housing market meltdown and the global financial crisis in 2008, the US economy has experienced recurring financial crises. For each crisis, finance capital received bailouts and came out relatively unscathed, but Main Street suffered from prolonged recessions with job, cash flow, and accumulated wealth losses.

Second, institutional investors and managed money have exerted growing influences on the real, productive economy. With the threat of leveraged buyouts and hostile takeovers, and by tying management compensations with stock options, managed money creates tremendous pressure and provides incentives for corporate managers to laser focus on quarterly earning reports and stock values. Maximizing Shareholder Value (MSV) has become the mantra of the US corporate world, leading TNCs to undertake decades-long "downsize-and-distribute" practices. That is, corporations downsize real investment, research and development (R&D), and workforce, and increase outsourcing and

offshoring production. Meanwhile, lucrative profits are not reinvested in the real, productive economy but are used for financial speculation and manipulation to grow even more fictitious financial wealth. It is no wonder, given the high return of financial wizardry, and the lack of regulations and policy guidance, that corporate USA has continuously under-invested in their productive capacity and relied on foreign supplies for products in a wide range of sectors.²

From De-Risking to "Over-Capacity" Smearing

The global financial crisis revealed the structural flaws of the over-financialized economy, while the COVID-19 pandemic exposed the "hollowing-out" of the US production system.³ Not only is the United States unable to sufficiently produce basic personal protective equipment, but even for advanced medical equipment such as ventilators, where the United States' comparative advantage supposedly rests, the United States finds itself lacking the manufacturing capacity. The interruption of the global supply chain also triggered one of the worst supply-shocked inflation episodes. Yet instead of reining in finance and re-investing in the real economy, the US administration chose to deflect the problem by playing the time-honored blame game. The Trump administration started a trade war to decouple from China, ignoring TNCs' volitional choice of shifting production abroad, but blaming China's "unfair" practices for taking away American jobs. Trump boasted that the tariff war made China pay billions of dollars to the United States government and helped bring manufacturing jobs back home, the so-called "reshoring" of the supply chain. The reality, however, is quite to the contrary. The economic consensus is that most of the tariffs were paid by US importers and, eventually, US consumers. As far as manufacturing jobs are concerned, Trump added a meager 414,000 jobs prior to the pandemic, but when he left the office in January 2021, the manufacturing sector recorded a net job loss of 178,000. This result was unsurprising. As companies had to pay more for imported input that undercut their bottom line, they were not interested in expanding production and workforce.

Rather than learning from the lesson of Trump's failed tariff war, the Biden administration inherited the punitive tariffs, because politically, a Democratic president must not appear "soft" on China. Noting that US-China two-way trade in fact grew to a new height in 2022 despite the

2 William Milberg and Deborah Winkler, "Financialization and the Dynamics of Offshoring in the USA," *Cambridge Journal of Economics* 34, no. 2 (March 2010): 275–293.

3 Yan Liang and Charles J. Whalen, "Money Manager Capitalism and the Coronavirus Pandemic," in *A Modern Guide to Post-Keynesian Institutional Economics*, ed. Charles J. Whalen (Cheltenham, England: Edward Elgar Publishing, 2022), 89–120.

tariffs, and decoupling was nearly impossible to materialize, the Biden administration heralded de-risking, or the so-called "small yard, high fence" strategy. De-risking was based less on an economic rationale - diversifying the supply chain to multiple locations to minimize risks of disruptions, but more on a geopolitical calculation - cutting China out of the supply chain of critical technologies to contain China's industrial and technological growth. The execution of the strategy started with blacklisting some of China's tech giants, notably ZTE and Huawei, mostly concerning cutting-edge semiconductor chips and chip machinery. The "yard" has since broadened, not only have the exports of legacy chips by US firms been curtailed, but increasing trade and investment restrictions have also been imposed in various sectors, including telecommunications, shipbuilding, and electric vehicles (EVs). It is worth noting that the Biden administration surpassed the Trump administration's tally of Chinese firms added to the "entity list" in April 2024 (319 under Biden compared to 306 under Trump).⁴

To justify the de-risking strategy, the Biden administration claimed that advanced chips are dual-use technologies, which can be used to beef up China's military capacity. It also rallied the Group of Seven (G7) countries to orchestrate the de-risking strategy by claiming, without any substantive evidence, that China supplied Russia with critical technologies in support of the latter's war efforts. Yet beyond this, the US and its allies still needed pretext to broaden the trade and investment restrictions. "Over-capacity" rhetoric has been the most recent gambit. As the argument goes, the Chinese government has unfairly provided numerous subsidies to its solar, EV, and battery manufacturers, which allows them to expand excessively. The excess capacity is exported to the US, undercutting US domestic firms. Therefore, a 100% tariff on Chinese-made EVs is justified. It is thus increasingly evident, be it security concerns or countering China's unfair industrial policies, that they are pretexts to cut China out of the global supply chain, especially in green and advanced technologies, where China is becoming increasingly competitive. As one of the largest developing countries, China has the right and aspiration to develop its technologies and economy, but the rise of China has unnerved the United States, and it is against this background that one can understand the de-risking strategy and practices.

4 "Biden Surpasses Trump's Record for Blacklisting Chinese Entities," *Bloomberg*, April 12, 2024, <https://www.bloomberg.com/news/articles/2024-04-12/biden-surpasses-trump-s-record-for-blacklisting-chinese-entities>.

China's Role in the Global Supply Chain

Starting from the reform and opening up era in the early 1980s, China has gradually integrated itself into the world economy. China was once at the bottom of the global supply chain, performing mainly processing trade, which involved importing machinery and intermediate goods, performing labor-intensive assembly and production activities, and re-exporting the finished products. Growing through the learning-by-doing process, aided by public investment in infrastructure, R&D, human capital, and industrious and innovative entrepreneurs, China quickly transformed its industrial landscape - it not only enhanced its production capacity exponentially but progressively climbed up the value chain. Measured by the share of global manufacturing gross production, China passed Germany in 1998, Japan in 2005, and the US in 2008. Since then, China has more than doubled its world share, while the United States' share has slipped by another three percentage points. By 2023, China's manufacturing gross production and value-added accounted for 35% and 29%, respectively, of the global total.⁵ More importantly, in recent years, China's manufacturing industry has focused on green technologies and products. From solar panels to wind turbines, from energy storage to electric vehicles, China has forged ahead in both technological development and production capacity. China now accounts for the majority of global renewable energy capacity, and production of green tech and green products. Take the solar industry as an example. Six of the top 10 solar manufacturers are Chinese, and two-thirds of all solar panels are now made in China. Thanks to China's formidable production capacity, global panel prices declined by 80% between 2008 and 2013. EVs are yet another relevant example. China's long-term interest in developing EVs has ushered in decades of R&D and investment, which helped establish its lead role in the industry. In 2023, about 60% of the world's EVs were sold in China, and EVs have become increasingly more affordable thanks to technological advancement and economies of scale. The significance of these green products can't be understated. For China, it helps the economy transition to a more innovation-driven, productivity-led, and sustainable growth path. For the global economy, it helps provide low-cost, abundant renewable energies to the Global South and facilitates their sustainable development. China's sharing of technologies with the developing South is essential to collective, sustainable prosperity.

5 Richard Baldwin, "China Is the World's Sole Manufacturing Superpower: A Line Sketch of the Rise," *CEPR*, January 17, 2024, <https://cepr.org/voxeu/columns/china-worlds-sole-manufacturing-superpower-line-sketch-rise>.

Impacts of De-Risking and Supply Chain Reconfiguration

The de-risking strategy was motivated by the United States' anxiety of China's rise. The US intends to undercut China's competitiveness by denying China access to the global supply chain of critical technologies and markets. Yet important questions remain. Will this strategy help strengthen the United States' competitiveness? Will this strategy contain China? Will this strategy improve the global economy, especially the resilience and efficacy of the supply chain?

The answer to the first question is a resounding No. As American economist James Galbraith aptly states, "The US economy, with Europe as an adjunct, came to rest on banks, bombs, bases, and informatics. Netting out gains and losses, hardly a single new manufacturing job has been created in America for four decades."⁶ Protecting US corporations from Chinese competitors does not mean that the shareholders will pivot toward reinvesting in the industrial capacity. Between 2003 and 2012, S&P 500 companies spent 54% of their net income on buybacks, in addition to 37% on dividend payouts. In 2022 alone, US corporations spent over one trillion USD on buybacks. Between investing and spending on R&D, and shoring up share values, US corporations have no doubt prioritized the latter.

Further, given that China has occupied such an important node in the global supply chain in a wide range of tech products, cutting China out of the supply chain would only undercut the United States' own production ecosystem. One salient example is Ford's derailed plan to partner with China's Contemporary Amperex Technology Co., Ltd. (CATL) to build an EV battery factory worth 3.5 billion USD in the state of Virginia. The Governor of Virginia rejected the host of the plan in order to "prohibit dangerous foreign entities tied to the Chinese Communist Party from purchasing Virginia's farmland."⁷ This complication further delayed Ford's plan to produce EV SUVs and pickups.

Again, given that China controls the majority of refinery capacity of critical minerals, cutting China out of the supply chain would only delay and obstruct the green tech development and green transition in the United States. Similarly, preventing chip exports to China means that the US tech firms lose one of the largest markets and sources of revenues - China once accounted for 36% of US semiconductor sales, which were

6 James K. Galbraith, "Industrial Policy Is a Nostalgic Pipe Dream," *Project Syndicate*, June 25, 2024, <https://www.project-syndicate.org/commentary/berlin-declaration-industrial-policy-progressive-pipe-dream-more-nostalgic-than-effective-by-james-k-galbraith-2024-06>.

7 John Fitzgerald Weaver, "Virginia Governor Kills Ford-CATL Battery Plant, Calling It a 'Front for the Chinese Communist Party,'" *pjv magazine*, January 19, 2023, <https://pjv-magazine-usa.com/2023/01/19/virginia-governor-kills-ford-catl-battery-plant-calling-it-a-front-for-the-chinese-communist-party/>.

indispensable financing sources for R&D and further expansion. So, the de-risking strategy is only leading to a heightened risk of failure for the US tech firms and undermining their capacity to stay ahead in the global technological race.

The answer to the second question is also an unequivocal No. The restricted access to technologies may present difficulties for China in the short run, but the Chinese government and businesses have stood up against the challenges. China has put in place the "new national system for mobilizing nationwide resources" to spur its semiconductor industry. Entrepreneurs and engineers are pouring all their efforts into the sector, lured by favorable policies and the sheer size of the market. Newly registered semiconductor companies have been mushrooming, and the progress has been nothing short of remarkable. China's production capacity for legacy chips (or mature node semiconductors) has grown rapidly, projected to increase from 24.2 million 12" equivalent in 2023 to 50 million by 2030, far exceeding the US, Japan, European Union (EU), and others.⁸ Furthermore, 55% of global semiconductor patent applications were Chinese in origin (and China's number of applications were double that of the America's) during 2021-2022, while Chinese entities surpassed US and Japanese counterparts for semiconductor patents granted in 2022.⁹ Technological leapfrogging is not limited to the semiconductor, EVs, or a few other sectors. According to the Australian Strategic Policy Institute (ASPI), China leads in 53 out of 64 critical technology fields. China will continue to develop its technological capacity and technological innovations will continue to drive high-quality growth, despite the West's de-risking practices.

The answer to the final question, unfortunately, is still an unmistakable No. While some countries, like Vietnam and Mexico, enjoy the reshuffling of the global supply chain and receive trade and investment flows diverted from China, the increasing geopolitical tensions and the growing opacity and distortion of the global supply chain produce significant efficiency losses for the global economy. In addition, the cessation of technological cooperation between the US and China slows down technological progress at the global level. The bifurcation of technological standards further complicates technological development and applications in different countries and regions. Indeed, the International Monetary Fund has voiced stern concerns that economic fragmentation could cost the global economy up to 7% of the GDP

8 Paul Triolo, "Legacy Chip Overcapacity in China: Myth and Reality," *CSIS*, April 30, 2024, <https://www.csis.org/blogs/trustee-china-hand/legacy-chip-overcapacity-china-myth-and-reality>.

9 Stephen Ezell, "How Innovative Is China in Semiconductors?," *ITIF*, August 19, 2024, <https://itif.org/publications/2024/08/19/how-innovative-is-china-in-semiconductors/>.

in the long term.¹⁰ As the world economy struggles to recover from the COVID-19 coma and faces the dire challenge of climate change, economic fragmentation would further compromise the prospect of achieving sustainable development goals.

Financialization has hollowed out the industrial capacity and contributed to the economic malaise in the United States. Rather than reining in high finance and reinvesting in the real economy, the US leadership has embarked on a de-risking strategy, namely, to contain China's growing technological and industrial might. However, such a strategy produces a lose-lose outcome for the United States and the global economy. For the United States, shielding corporate giants from Chinese competitors or denying China access to high tech will not automatically revitalize its own productive economy. In particular, erecting barriers to China's green technologies and products will only lead to a more costly and slower low-carbon transition for the US. As Xie Feng, the Chinese Ambassador to the US, once pointed out that when it comes to green capacity, "it is not excessive, but in dire scarcity. The problem now is not 'overcapacity,' but 'over-anxiety.'"¹¹ China's technological progress is not only instrumental in its own economic upgrading and transition, but also provides a tremendous boost to the sustainable growth of the global economy. China's rise cannot be contained. It is up to the United States to garner the resolve and wisdom to do the right thing.

10 "The High Cost of Global Economic Fragmentation," *IMF*, August 28, 2023, <https://www.imf.org/en/Blogs/Articles/2023/08/28/the-high-cost-of-global-economic-fragmentation>.

11 Feng Xie, "Chinese Modernization, a Community with a Shared Future for Mankind, and China-US Relations," transcript of speech delivered at the John F. Kennedy School of Government of Harvard University, April 21, 2024, https://www.fmprc.gov.cn/eng/xw/zwbd/202405/t20240530_11366135.html.

In

Focus



The Impact of the Federal Reserve's Interest Rate Cut on the World

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The Federal Reserve's recent decision to cut interest rates by 50 basis points marked an important turning point in US monetary policy. This move has ended two years of continuous interest rate hikes, signaling further easing of monetary policy in the future. The interest rate cut will gradually reduce the attractiveness of financial assets denominated in the US dollar, leading to a depreciation of the US dollar. Since the US dollar is the predominant currency in the international monetary system, the Federal Reserve's monetary policy will have an enormous impact on the flow of the US dollar and global capital, thus affecting the world economy.

Most practitioners in the US capital market believe the Federal Reserve's interest rate cut in September is only the beginning of a broader rate-cutting cycle. The pace of future rate cuts may accelerate, and its spillover effects on the world economy will become increasingly obvious.

Why Cut Interest Rates?

Before the Federal Reserve announced the interest rate cut, there already were rumors circulating in the market. As a result, the prices of oil, gold, US stocks, and commodities had already begun to rise. Since Alan Greenspan became chairman in 1987, the Federal Reserve has been managing monetary policy in accordance with market expectations. Therefore, its decisions to raise or cut interest rates have aligned closely with market expectations.

In recent years, the Federal Reserve's monetary policy has experienced ups and downs. During the pandemic, the Federal Reserve sharply cut interest rates and made "limitless easing" to provide liquidity to the market. Since 2022, however, interest rates have been raised sharply several times, bringing the benchmark rate to between 5.25% and 5.5%. This rapid increase has led to liquidity constraints, causing some banks to go bankrupt.

According to revised data from the US Bureau of Labor Statistics for March 2024, there were 818,000 fewer jobs than previously reported, indicating that the US economy has begun to decline. Many analysts predicted a high probability of a US recession in 2024, estimating the likelihood at 85%. Such a recession would significantly increase the pressure to cut interest rates. In June 2024, the Federal Reserve conducted a stress test to simulate sharp fluctuations in financial markets. The test assumed that corporate bond spreads would widen, and asset prices would fall sharply. This potential financial market instability could affect the Federal Reserve's policy decisions, pushing it to take more mitigation measures.

The Federal Reserve's decision to cut interest rates came in the context of slowing global economic growth. The economic performance of the United States and the euro area was a concern, and global growth was expected to remain sluggish, with forecasts suggesting it could slow down to 2.4%. Factors such as tight monetary policy and weak demand contributed to this outlook. In response, the Federal Reserve saw gradual interest rate reductions as a way to support economic growth.

Market participants predict that after the Federal Reserve begins to cut interest rates in September, it may lower them three to four times in a row, by about 0.25% each time. However, the Federal Reserve's initial cut of 50 basis points signaled a belief that the economic downturn was accelerating. Without taking drastic measures, the US recession could become even more severe. However, such a sharp rate cut may also heighten public anxiety, and the market's fierce reaction may lead to further financial difficulties. The mass selling of stocks in the market indicated that panic has begun to permeate.

The Impact of the Federal Reserve's Interest Rate Cut on the US Economy

The Federal Reserve's interest rate cut was designed to influence the US capital market, thus directly and indirectly affecting the behavior of different economic agents.

First, interest rate cuts can directly reduce borrowing costs for enterprises, enabling them to obtain loans at more favorable rates. This helps enterprises expand their business, purchase new equipment, or hire more employees, thus improving financial health and growth potential. Reduced costs can also increase profit margins, which in turn promotes overall economic growth. Lower borrowing costs further encourage enterprises to invest and expand. In addition, enterprises can take advantage of lower rates to optimize their financial statements and mitigate short-term financial pressures.

Second, the decline in loan interest rates is likely to boost consumer spending power. Low consumer loan interest rates make borrowing for consumption more attractive, driving up overall consumption levels. For example, low mortgage rates reduce the cost of home loans and increase consumers' disposable income. In addition, low interest rates will discourage saving, which promotes higher spending. This rise in consumer spending supports economic recovery by stimulating market demand.

Third, as the profitability of enterprises improves, this should stimulate a recovery in the stock market. By reducing borrowing costs and increasing consumer demand, interest rate cuts are expected to eventually improve corporate profits, which will positively impact stock prices. However, this effect often takes time to materialize. The impact of interest rate cuts on the bond market is relatively complex. Both short- and long-term bond yields are affected, but the speed and extent of response are different. Short-term bond yields usually decline rapidly, while long-term bond yields will depend on market perceptions of the long-term economic outlook and inflation expectations. Interest rate cuts often steepen the yield curve, meaning short-term interest rates fall more sharply than long-term ones.

Fourth, interest rate cuts usually lead to the depreciation of the US dollar and may encourage capital outflows into markets with higher yields. A weaker dollar enhances the competitiveness of US exports, but it also increases import costs and affects the trade balance. At the same time, capital outflows bring opportunities for emerging markets and developing economies to attract more inflows, though they also face challenges related to interest rates and currency fluctuations.

Additionally, interest rate cuts can indirectly push up house prices as a result of lower mortgage rates. In a low-interest-rate environment, the cost of buying a house is reduced, which stimulates demand and drives up house prices. This pattern has recurred in past rate-cut cycles, although actual increases in house prices also depend on supply-demand dynamics and other market conditions.

The Impact of the US Interest Rate Cut on the World Economy

The Federal Reserve's interest rate cut typically weakens the US dollar, because lower yields reduce the attractiveness of dollar-denominated financial assets. In export-dependent economies, this devaluation can improve competitiveness, boost exports, and promote economic growth. On the contrary, import-dependent economies may face rising import costs, resulting in inflationary pressures and a decline in consumer purchasing power.

Central banks in other countries usually respond to the Federal Reserve's interest rate cuts by relaxing their monetary policies to maintain a competitive exchange rate and manage the domestic economic situation. This synchronous easing can reduce global bond yields and influence investor behavior, encouraging increased risk-taking in stock markets and driving sector shifts. For example, expectations of the Federal Reserve's interest rate cuts may push investors toward sectors like technology and consumer discretionary goods, which tend to benefit more from lower financing costs.

Some time ago, as the Federal Reserve raised interest rates, yields on US Treasury bonds rose, attracting investment back to the United States. However, with the Federal Reserve cutting interest rates and the dollar depreciating, there are significant effects on global bond yields. A decline in US Treasury bond yields usually leads to a decline in global bond yields as well.

Different sectors of the global economy react differently to changes in US monetary policy. The technology sector, which is sensitive to stock market fluctuations, has experienced huge changes in profits and output during periods of monetary tightening. The manufacturing sector, which relies heavily on capital investment, is directly affected by financing costs, with tighter policies leading to reduced investment. Meanwhile, the service sector, though less sensitive to exchange rate changes, still plays a crucial role in influencing inflation through labor market dynamics. After the Federal Reserve cuts interest rates, a large amount of capital may flow back to emerging economies, which is beneficial to the financing of unicorn enterprises in the technology industry.

In short, the Federal Reserve's interest rate cut has had a far-reaching and multifaceted impact on global capital markets, emerging economies, exchange rates, and industry performance. These dynamics highlight the interconnectivity of the global financial system and the complex feedback mechanism that helps maintain this complex economic network.

The Impact of the US Interest Rate Cut on the Chinese Market

Given the interrelated nature of the global financial system, the chain reaction of exchange rate adjustments will extend to capital liquidity. Specifically, the reduced attractiveness of US dollar assets following the interest rate cut may prompt international capital to seek higher returns in emerging markets such as China. A return of capital to China would stimulate its financial market, enhance liquidity, and push up the valuation of stocks and bonds. This influx of demand for local securities may also depress domestic real interest rates.

In terms of bilateral trade, the depreciation of the US dollar will cause the appreciation of the RMB, which may weaken the pricing competitiveness of China's export products, thus affecting trade balance and economic policy. However, the Federal Reserve's interest rate cut could also stimulate US market demand, leading to increased consumption of Chinese goods. This could expand China's trade surplus with the United States. Nevertheless, a growing trade surplus may heighten bilateral tensions, with the US potentially responding through policy measures, such as tariff increases, under the next administration.

From a microeconomic perspective, exchange rate fluctuations alter the cost structure of international trade settlements, increasing transaction expenditures for enterprises when foreign exchange rates shift significantly. Companies may face higher hedging costs and risks, which will affect their operational profitability and financial stability. In the end, the Federal Reserve's interest rate cut provides a broader operating space for China to adjust its monetary policy. Theoretically, the expansion of policy space enables China's monetary authorities to implement supportive measures to counter the economic downturn, thus promoting sustained economic growth. These measures usually include expanding credit, reducing borrowing costs, and stimulating economic activities. Of course, the effectiveness of these measures depends on the specific situation.

Therefore, the combined impact of the Federal Reserve's interest rate cut on China's economy and capital markets highlights a complex but strategically advantageous situation, which is conducive to both short-term financial stability and long-term economic consolidation. The exact scope of this impact is subtle and depends on global financial trends, economic policies, and market responses.

China can take measures to respond to changes in the Federal Reserve's monetary policy and the depreciation of the US dollar:

1. After the 2008 global financial crisis, the Federal Reserve primed for a pump and a large amount of international capital flowed into China, which contributed to surges in the stock market and real estate prices, which later posed challenges for China's macroeconomic management. In the future, if international capital flows into China massively again, it's important not to "add fuel to the fire." Authorities should actively caution the public against irrational stock market rises and remain vigilant about financial bubbles.
2. The appreciation of the RMB presents an opportunity for China to create more robust regional supply chains. This could involve shifting some industries from coastal areas to the central and western regions, and relocating simpler processing industries to neighboring countries. By creating a more structured regional supply chain, China can maintain its export competitiveness even in the context of RMB appreciation.
3. The depreciation of the US dollar may cause losses in foreign exchange reserves for various countries, especially in the Global South, leading to financial difficulties. China can seize this moment to promote reforms in the international monetary system. Strengthening cooperation with other BRICS countries, oil-producing countries in the Middle East, and other partners could help lay the foundation for a fairer international monetary system in the future.

Youth

Voices



Artificial Bubbles: The Rise and Fall of "AI"

Evan Hill



• TI Youth Observer

Defining "AI"

Intense venture capital interest in anything labeled "AI" has created a gold rush for expansion into the space. To paint a picture, approximately 154 billion USD was invested globally into "AI" in 2023,¹ with Goldman Sachs forecasting this number to expand to 200 billion USD by 2025.²

To understand the economics of "AI," we must define it. "AI," as it is currently understood post-ChatGPT, refers to a program able to sort and output results in one or more natural language mediums, and for shorthand, this article will adhere to this definition. "AI" consists of two base software components: a large-scale generative algorithm, usually based on the transformer architecture proposed by Google in 2017,³ and a massive, curated dataset used to train the program. It is worth noting that the term "AI" is misleading, as these products are not actual artificial intelligence. These programs are better described as high-end word matching programs with outstanding natural language processing (NLP) systems, or large language models (LLMs).

Bad Business

Before delving into the grim economics of "AI," we should acknowledge that some systems labeled "AI" show great promise. Fields including transportation, programming, and food and beverage are being

1 Bergur Thormundsson, "Worldwide Spending on AI by Industry 2023," *Statista*, February 15, 2024. <https://www.statista.com/statistics/1446052/worldwide-spending-on-ai-by-industry/>.

2 "AI Investment Forecast to Approach \$200 Billion Globally by 2025," *Goldman Sachs*, August 1, 2023, <https://www.goldmansachs.com/insights/articles/ai-investment-forecast-to-approach-200-billion-globally-by-2025>.

3 Ashish Vaswani et al., "Attention Is All You Need," (paper presented at the 31st Conference on Neural Information Processing Systems, Long Beach, California, 2017).

revolutionized by niche, specialized "AI" products which provide tangible value by improving output and/or streamlining labor requirements. Unfortunately, this is not the case for the overwhelming majority of products.

From a purely technical perspective, many "AI" products end up looking like solutions without problems. At best, they represent novel technical advancements with no immediate monetization model or practical use case, and at worst, they're cynical bundles of redundant tech in an over-saturated market or dressed-up vaporware seeking to cash in on a speculative hype bubble. An example of the extreme saturation and lack of technical moats (an innovation or advantage that is prohibitively difficult for competitors to recreate) in the space is illustrated by the approximate 1.8 million "AI" projects currently on GitHub, many of which are LLMs that function comparably to ChatGPT.⁴

A poster example of an "AI" company without a clear monetization model is OpenAI, creator of the immensely popular ChatGPT. With estimated daily operating costs of approximately 700,000 USD,⁵ and a projected 5 billion USD deficit in 2024,⁶ OpenAI exemplifies a series of interesting projects with no clear path to profitability. This could evolve assuming an innovative new approach or technical moat is developed, but at present, this seems unlikely.

Present evidence seems to suggest the development of "AI" moats is unlikely, at least in the LLM and generative art spaces. An ominous leaked 2023 memo from Google bemoans this exact problem, explicitly stating in its title that "We (Google) have no moat, and neither does OpenAI,"⁷ whilst drawing attention to several semi-open source projects that perform almost identically to Google and OpenAI flagship LLM products,⁸ at a fraction of the cost. The lack of a technical moat eliminates OpenAI and Google's lowest hanging approach to profitability, a variant of the Microsoft model - distribute moated equipment with excellent support at a loss until it is ubiquitous, then eventually profit by flipping and selling ancillary software as a service. This model does not work when everyone can rig up an LLM.

From a business standpoint, this is a nightmare. That anyone can download an open source LLM project comparable to ChatGPT, monetization models are not figured out, and operating costs are high,

4 *Artificial Intelligence Index Report 2024* (California: Stanford University, 2024), https://aiindex.stanford.edu/wp-content/uploads/2024/05/HAI_AI-Index-Report-2024.pdf.

5 Dylan Patel and Afzal Ahmad, "The Inference Cost of Search Disruption - Large Language Model Cost Analysis," *SemiAnalysis*, February 9, 2023, <https://www.semianalysis.com/p/the-inference-cost-of-search-disruption>.

6 Amir Efrati and Aaron Holmes, "Why OpenAI Could Lose \$5 Billion This Year," *The Information*, July 24, 2024, <https://www.theinformation.com/articles/why-openai-could-lose-5-billion-this-year>.

7 Dylan Patel and Afzal Ahmad, "Google 'We Have No Moat, and Neither Does OpenAI,'" *SemiAnalysis*, May 4, 2023, <https://www.semianalysis.com/p/google-we-have-no-moat-and-neither>.

8 "Meta and Microsoft Introduce the Next Generation of Llama," *Meta*, July 18, 2023, <https://about.fb.com/news/2023/07/llama-2/>.

indicate LLMs are bad business. OpenAI and Google hold sway over a large user base from brand recognition alone, but that isn't enough. There is existential value in the user data collected from running an LLM at scale, but Google already has similar data, and it is difficult to imagine an application that offsets the daily 700,000 USD expenditure OpenAI faces emerging quickly. If LLMs had a strong technical moat, there might be a "uniqueness" justification, but this simply doesn't exist. In addition, OpenAI has implemented aggressive user monetization protocols on their products, but these paywalls cannibalize their only advantage - name recognition in a wide field.

The point here is not that the recent developments in "AI" are all bad. It is that many of the companies developing them, when subjected to casual scrutiny, display low potential for creating sustainable long-term value.

Incestuous Investment

The underlying base principle of technology investment is simple - early adopters and innovators create products which have natural technical moats and become ubiquitous, which is profitable to both the company (in terms of service fees or sales) and investors (in terms of the inevitable valuation spike). The natural progression of this schema encourages investors to adopt a "unicorn chaser" mentality, where they invest early in a herd of companies which sound promising, in hopes that a few reach a vaunted multi-billion-dollar valuation. This is where issues begin to arise. The race to get in early with the mere presence of prestigious institutional investors is often enough to immediately drive up the valuation of an early-stage tech company, despite the fundraising company frequently having no proven concept, profit model, or technical moat.

It must be stressed that the explosive early valuation potential of tech stocks is the primary catalyst for the situation we now see. Excitement and fear of missing out led to the tech sector becoming a degenerate, stagnant place where non-innovative, non-profitable companies without clear monetization plans or proof of concept can receive multi-million (sometimes multi-billion) USD valuations. Any such environment will inevitably become a haven for bad actors and speculative financial practices. We've seen this before with the dotcom bubble and crypto boom.

Bad actors within this system can easily exploit the situation. Cynical startups quickly realized that slick marketing and promising the world are quick ways to raise capital and receive a sky-high valuation. Cynical investors realized that the ability to almost magically raise a company's valuation could be quite profitable. Both cynical startups and investors are incentivized to parasitically exploit, then exit this scenario by offloading shares or selling the enterprise when valuations are peaking, leaving earnest investors and the new buyers with nothing. In many ways, this alleged investing schema strongly resembles a pump-and-dump scam.

While this practice is certainly slimy, what truly matters is that these high financial activities are at the direct expense of others and the real economy. Technology is valued because it has the potential to be almost unimaginably profitable through innovation - by divorcing actual innovation and technical moats from the process, we end up with a bizarre game of hot potato, where the potato is useless "AI" vaporware, the winners are cynical investors and startups, and the losers are everyone else. When a valuation skyrockets, money does not magically appear in the company bank account - the value of the shares held by investors and company employees expands. To extract capital from these shares, someone needs to pay for them, and assuming the technology made by the company has no ability to create money, cynical investors and startups are mutually incentivized to dump their trash projects on the public or another company.

It is worth noting that this phenomenon is not new, and not exclusive to the "AI" industry. "AI" simply represents the current path of least resistance and a slightly revised approach. A variant example is WeWork, a company at best tangentially in the technology and innovation space, that was able to "hack" capital sources and its own valuation by presenting itself as "cutting edge" and IPO, only to predictably crash in the most spectacular fashion.

Not Everything Is Doom and Gloom

Though the dismal cycle of usual bad actors will undoubtedly continue and move on after the hype around "AI" dies, it is worth noting that certain niche technologies in the broad categorization do show tangible value propositions with solid monetization schemas and technical moats.

Though the technology involved differs significantly from LLMs, an excellent example lumped into the "AI" grouping is self-driving cars, which have been deployed by 19 companies in 16 cities for limited test runs in China.⁹ The question of mass implementation for this technology is a "when," not an "if." The implications, new jobs, and opportunities this transformation will bring are almost unfathomable. Transportation, shipping logistics, city planning, traffic control, and countless other intertwined industries will experience a wave of change and opportunity as this warps the way we move and experience life.

Food and beverage, at least at the fast-casual level, has always been about providing consistency and speed. An enormous section of Hamburger University and the Speedee System as implemented by McDonald's is concerned with mitigating human error to the nth degree possible, ensuring consistency and optimized delivery times.¹⁰ "AI" kitchens, at least in the context of fast-casual, show tremendous promise, requiring less space than a traditional kitchen, operating extremely fast, having less wastage, requiring minimal personnel, and having no capacity for human error.¹¹ These kitchens are still experimental and require human supervision, but the ability to almost immediately set up a food dispensary that operates 24/7 and prepares a wide variety of fresh dishes palatable to the market in question will be transformative.

On a somewhat tangential note, companies like Nvidia and AMD have taken a calculating long-term approach by selling metaphorical pickaxes in the form of GPUs to "AI" gold miners. Though not technically "AI" producers, Nvidia and AMD serve as foils for the "AI" industry, having sky-high valuations based on strong technical moats, profitable business models, and well-scripted plans for future innovation. Even then, Nvidia's valuation is vastly overinflated, and only makes sense if you believe the firm will spearhead a new industry, a proposition which may well be true, but has conveniently overlooked risk factors.

What all these industries and organizations have in common are connections to the real economy, in this case, represented by a moat, a business model built to be profitable, and real-world applications that generate value, as opposed to a convoluted plan to self-enrich utilizing smoke, mirrors, and high finance. "AI" is in a bubble - no industry can have so many obviously unprofitable and untenable enterprises and

⁹ Keith Bradsher, "China Is Testing More Driverless Cars than Any Other Country," *The New York Times*, June 13, 2024, <https://www.nytimes.com/2024/06/13/business/china-driverless-cars.html>.

¹⁰ Tim Harford, "How McDonald's Revolutionised Business," *BBC News*, February 5, 2020, <https://www.bbc.com/news/business-51208592>.

¹¹ Evert Gruyaert, "AI and Automation: Reshaping the Future of Full-Service Dining," *FSR magazine*, August 22, 2024, <https://www.fsmagazine.com/feature/ai-and-automation-reshaping-the-future-of-full-service-dining/>.

not be primed for a burst - but within this bubble of bad actors are companies and ideas that will endure through the inevitable collapse, because they contribute value in a tangible, measurable form.

Conclusion

The point of this is not to condemn "AI." It is to advocate for a real economy-based approach when evaluating the "AI" industry, and by extension the greater technology space. This is perhaps Sisyphean, as history teaches us that the cycle of financial upsides creating complacency, and eventually a speculative hype bubble, is something we tend to repeat. A trend throughout history is that those who understand an industry from a technical level and invest in products with solid monetization plans and real economy applications tend to see success. "AI" is no different. Much like blockchain, "AI" represents an advancement with niche technical applications which became over-hyped, and then overrun with bad actors seeking to profit at the expense of the public.

Technology should be appraised in terms of underlying ability to monetize, technical moat, and tangible value created. Too many venture capital funds focus on "what's hot" and appoint a class of software-illiterates to play a glorified game of following the leader in a desperate chase for a unicorn that is frequently a wild goose. The existence of this opened doors for unethical startup owners who are willing to stretch truths for valuation. One thing is clear however - those who evaluate products based on technical specifications and tangible value to the real economy will succeed long-term and weather the coming bubble burst.

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