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Make or break: Industry concentration and the global trading system

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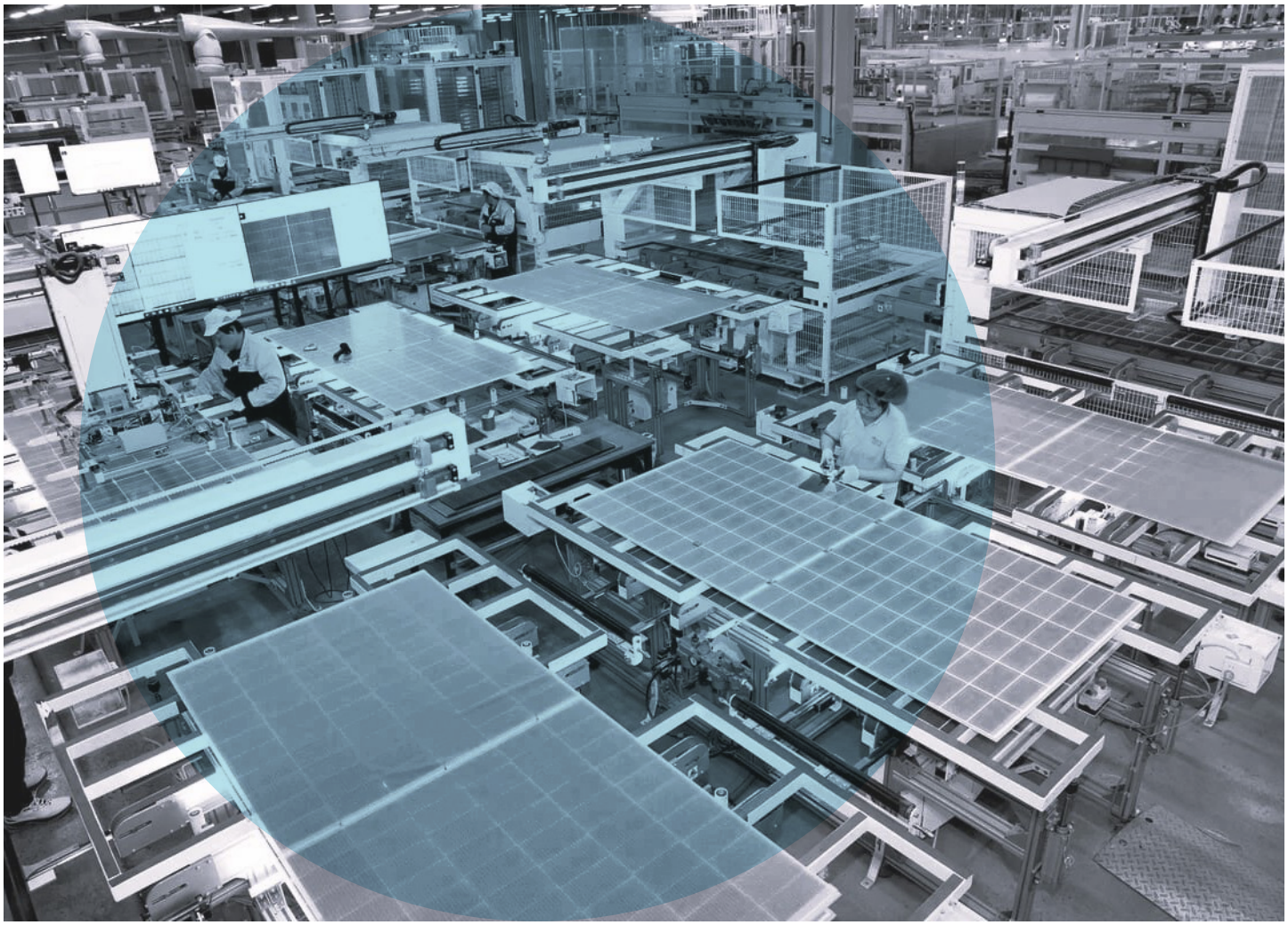

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There are two key fears that are driving the break-up of the rules-based global trading system in our view: the perennial and large trade imbalances and the level of industrial concentration.

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Trade imbalances can, in some respects, be attributed to market failure and unnatural frictions in the trading system. They need not necessarily be a feature of a global trading system. The fact that they have been we ascribe to a lack of exchange rate flexibility, asymmetric market access, and the political construct of China's economy when contrasted with its more market orientated trading partners.

Geographic industry concentration, on the other hand, is a natural and sometimes welcome result of specialization. To the extent that specialization is the result of comparative advantage and therefore reflects the ability of a particular country to provide a product using less resources than others, it encapsulates the core essence of all that is good in trade. It expands the global production frontier, enriching the world by making products more affordable than would otherwise be the case.

In this paper we analyze to what extent industry is becoming concentrated in a few geographies; why has this become an increasing cause of concern to policy makers; and what measures could be taken to address these concerns.

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Is industry becoming excessively concentrated?

The Organisation for Economic Co-operation and Development countries and China accounted for 85% of manufacturing value-added in 2004. This proportion has dropped to 78% in 2024.

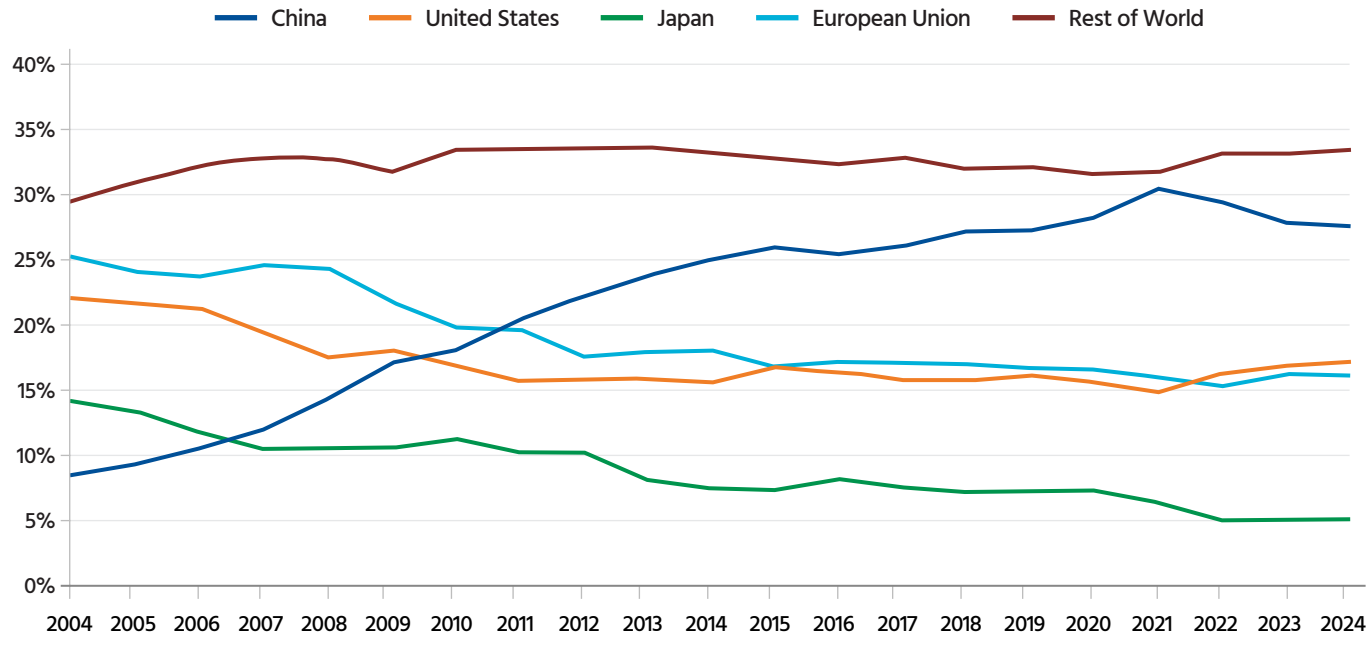
In 2004, the largest manufacturing country – as measure by manufacturing value-added in nominal dollar terms – was the United States with a global market share of 22%. Japan was the second largest with a share of 14%. The top two countries therefore had a combined market share of about 36%. In 2024, China has assumed the top position with a share of 28%, significantly larger than America's share 20 years ago. The US is now second with a share of 17%, again larger than Japan's share in 2004. Thus, the top two manufacturing economies have seen their share rise from 36% to 45%, a very significant level on concentration.

Interestingly, below the top two manufacturing nations, manufacturing activity has become more diffuse. The Organisation for Economic Co-operation and Development (OECD) countries and China accounted for 85% of manufacturing value-added in 2004. This proportion has dropped to 78% in 2024.

Of course, within this grouping there has been a massive relocation of manufacturing value-added towards China and away from the rest. While China has added nearly 19 percentage points of market share, the OECD has lost 26 percentage points. The net 7 percentage points loss has been redistributed to the rest of the world: South Asia; the Middle East and North Africa; and Latin America.

Figure 1 – World share in manufacturing value added, 2004-2024 (%)

Measured in nominal dollar terms



Source: World Bank database

When it comes to measuring excess manufacturing – the level over and above what is used domestically – China's share gains have been even more dramatic.

Within the OECD, the United States' share of manufacturing value-added has held up relatively well. Japan and the EU member states have been the biggest losers, each seeing a 9 percentage points decline in share.

When it comes to measuring excess manufacturing – the level over and above what is used domestically – China's share gains have been even more dramatic. This is evident in the trade data.

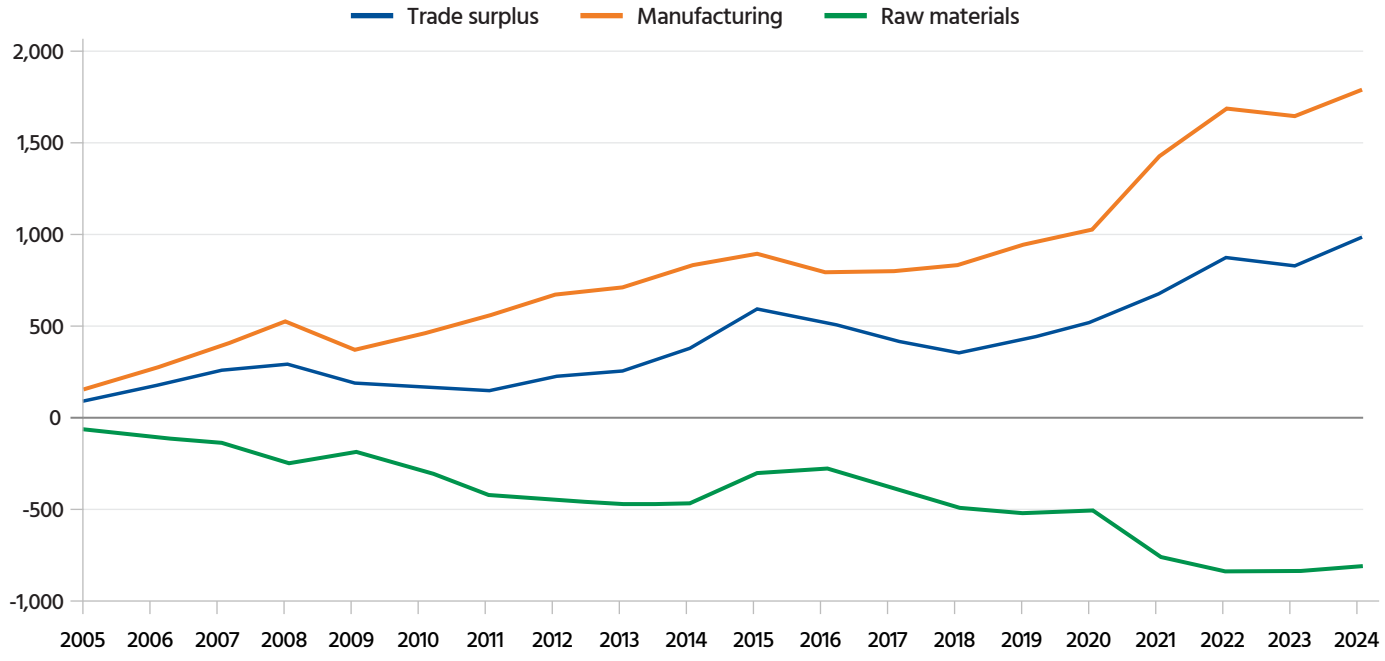
Broadly speaking, trade in goods can be divided into two categories: Raw Inputs and processed and manufactured products. Clearly, the second category covers a wide range of value addition. Using the harmonized system of categorization (HS), we have used the chapters pertaining to food, energy and ores to designated inputs (Chapters 1-29) and everything else as manufactured goods.

Figure 2 shows the evolution of China's trade position in each of these two categories.

While China's overall trade surplus expanded by over US$880 billion between 2005 and 2004, the surplus in broadly defined manufacturing increased by US$1.6 trillion, offset in part by the rise in the deficit in food, fuels, and minerals. A far narrower sub-set of manufacturing, what might be termed intensive manufacturing (chapters 84-96), drove the growth, with the surplus rising from just US$80 billion to over US$1.1 trillion.

As Figure 3 shows, the US is very much the mirror image of China in terms of trade patterns. The US overall deficit has risen from US$830 billion to US$1.3 trillion between 2005 and 2024. The trade position in inputs – food, fuels, and

Figure 2 – China's merchandise trade balance: total, raw materials, and manufacturing (US$ billion)



Source: ITC and authors calculations

China's importance to world manufacturing is augmented by its role as the last point of assembly for a significant range of important products.

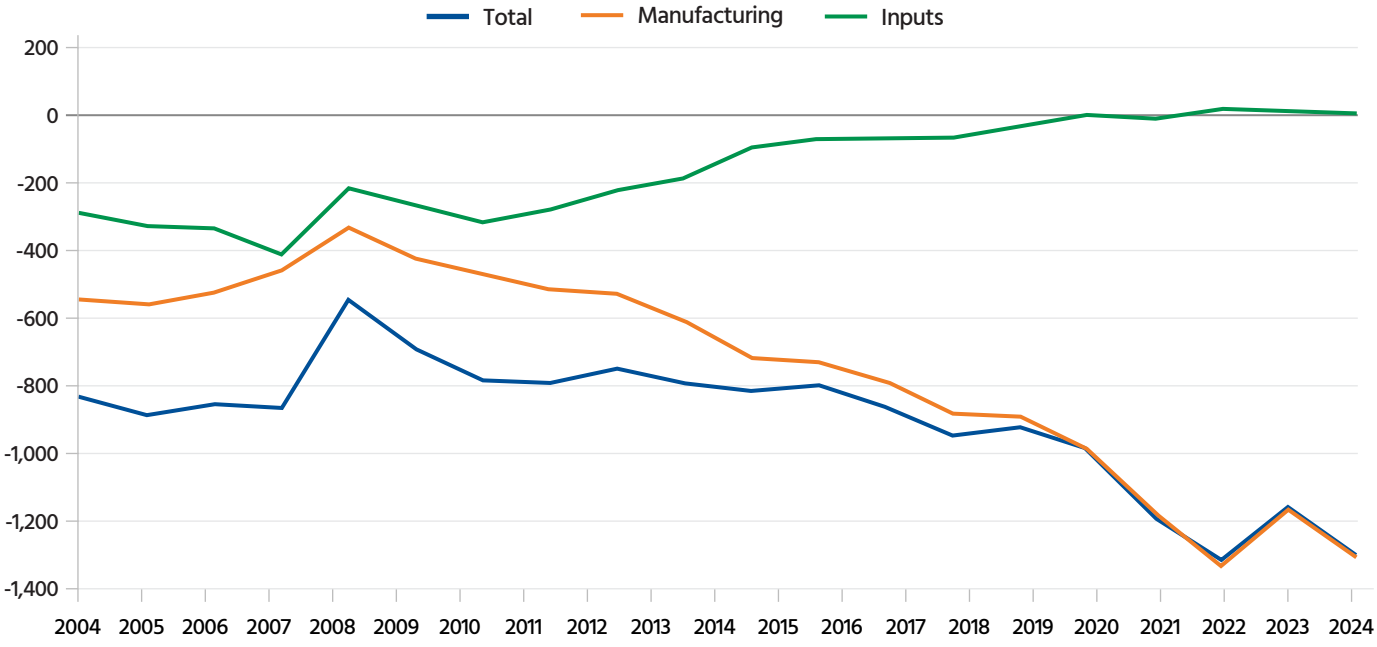
minerals – has gone from a deficit to balance, while the deficit in manufacturing has expanded dramatically – from US$540 billion to US$1.3 trillion. Within the manufacturing sector, the intensive manufacturing sectors (chapters 84-96) have seen a dramatic deterioration. In 2005 the deficit in these sectors was just US$284 billion but this has now risen to US$820 billion.

Looking at volumes, as opposed to values, at the industry level, China's dominance in manufacturing looks even more complete. China has about an 80% world market share in solar panels; 70% of solar inverters; 75% of lithium-ion batteries; 60% of electric vehicles; 70% of smartphones; more than half the world's steel and about half the world's ships.

Of course, there is foreign made content in these products, which helps explain why the often-stated market shares in final products exceed the value-added share of manufacturing at the macro level. The proportion of foreign value-added in Chinese manufacturing is however falling over time. According to the 2025 edition of the Trade in value-added (TiVA) data base, using data from 2022, domestic value-added accounted for 84% of the value of gross exports from China.[1]

China's importance to world manufacturing is, therefore, augmented by its role as the last point of assembly for a significant range of important products. In contrast, in lower value-added product categories, China has been willing to see final production and assembly move offshore, while remaining a key provider of intermediate and capital goods. This would be the case, for example, in textiles where China remains the domain supplier of raw materials and capital goods but where manufacturing has, in part, moved to south and southeast Asia.

Figure 3 – US merchandise trade balance: total, raw materials, and manufacturing (US$ billion)



Source: ITC and authors calculations

Why does industry concentration present a concern for policy makers?

Economically, industrial concentration is forming in a self-reinforcing way. China's maximalist approach to manufacturing means that an ever-increasing number of industries are becoming dominated by China.

Why then might specific industry concentration be a cause of such concern that it is driving economic fragmentation? We see two causes for the concern: economic and geopolitical.

Economically, industrial concentration is forming in a self-reinforcing way. China's maximalist approach to manufacturing means that an ever-increasing number of industries are becoming dominated by China. In a world of increasing return to scale, once leadership is established it is hard for any other player to break into the market, especially in a world of freely traded goods and without significant state intervention. China's domestic scale, and the relative closed nature of its domestic market, provide it with an obvious advantage. China's dominance in 5G communications equipment, when compared to their near absence from the industry at the 2G stage, is a classic example of how China's industrial policy has enabled it to capture an industry.

Secondly, it is becoming increasingly evident that industrial capacity is a driver of innovation and technological supremacy. Industrial capacity generates both the demand for and the resources for scientific innovation. The larger and more diverse a country's industrial base, the greater the chances that innovation will occur that can be applied across industries. China is establishing over-lapping industrial eco-systems that create a compounding effect on growth and innovation as a break-through in one realm can be applied in other spheres.[2]

In addition, manufacturing, where economies of scale are most evident, drives productivity growth and therefore countries that dominate manufacturing will tend to grow faster than those without a manufacturing base. Countries that lose their manufacturing are employing the displaced resources in sectors demonstrating slower productivity growth, leading to slower than would otherwise be the case of income growth.

Nor is it clear that China's dominance of manufacturing is down to a natural comparative advantage. In many cases, industrial subsidies have played a key role in establishing Chinese leadership. A recent IMF paper by Garcia-Macia, Kothari, and Tao, estimates Chinese industrial subsidies at 4% to 4.4% of GDP or about US$750 to US$825 billion per year.[3] These subsidies are almost all aimed at the manufacturing sector and can be broken down into cash subsidies (about 2% of GDP); tax benefits (1.5% of GDP); subsidized land purchases (0.5% of GDP); and subsidized credit (0.4% of GDP). Nor are these estimates outliers when compared to other studies and are significantly higher than say the 1.5% of GDP that the EU spend on industrial subsidies.

To put this on context, manufacturing value-added in China in 2024 was US$4.7 trillion, about 24% of GDP.[4] So subsides amounted to about 16% of manufacturing value-added. Furthermore, profit after tax at "industrial companies above a certain size" was the equivalent of US$920 billion (RMB7.4 trillion) in 2024.[5] Hence, industrial subsidies defined in the way the IMF paper does, accounted for the lion's share of China's industrial profits. If the IMF paper estimates are even approximately correct, what emerges from the analysis is a picture of a vast

China's rise to dominance in manufacturing manifests itself in: China's monopolistic position in leading industries, fast labor productivity growth and rising incomes, increasing technological leadership, and a virtual circle of production, innovation, and application of new technologies to production.

industrial base that is effectively being run profitlessly, propped up by preferential treatment and state subsidy.

The above analysis demonstrates how difficult it is for private capital to compete with China. How can private economic actors generate returns on capital equal to their cost of capital when China's economic actors are being so heavily subsidized?

When it comes to exports, over 90% of China's merchandise exports are manufactured goods. In 2024, total merchandise exports were US$3.6 trillion, meaning about US$3.3 trillion were manufactured goods. The domestic proportion of the value-added in China's gross exports in intensive manufacturing has been rising and is estimated at about 75% now. Hence about US$2.5 trillion of domestic manufacturing value-added was exported in 2024. This represents slightly over half (53%) of China's total manufacturing value-added. If the exports carried the average subsidy – 16% – this would imply that China is exporting about US$400 billion of subsidy through its manufacturing exports. As Rotunno and Ruta have shown there is very clear evidence that subsides have both enhanced China's exports and reduced its imports.[6]

In some cases, this then makes the industry self-supporting once an efficient scale of production has been reached. In other cases, the subsidies continue. While these subsidies represent a wealth transfer to the importing country in form of enhanced consumer welfare, indirectly they can have a negative impact on income in the importing country if either displaced resources (labor, capital or know-how) remain idle as a result of the disappearance of the industry, or if the resources are employed elsewhere at lower levels of productivity.

Hence, economically, China's rise to dominance in manufacturing manifests itself in: China's monopolistic position in leading industries; fast labor productivity

What emerges from the IMF analysis is a picture of a vast industrial base that is effectively being run profitlessly, propped up by preferential treatment and state subsidy.

The geopolitical ramifications of China's manufacturing dominance are changing the cost-benefit equation of trade.

growth (but not capital productivity growth) and rising incomes; increasing technological leadership; and a virtual circle of production, innovation, and application of new technologies to production.

The most obvious geopolitical manifestation of China's rise to dominate manufacturing has been the growing number of trade dependencies that create vulnerabilities in its trading partners economies. These, in turn, limit the capacity of partners to pursue courses of action of their own choosing.

As China has moved up the value chain, so these trade dependencies have become increasingly significant. It is probably true to say that the ability of Europe to re-arm in the face of Russian aggression in Ukraine is now dependent on China's compliance in terms of the supply of critical minerals and component parts for armaments.

Beyond the military sphere, the entire energy transition agenda is heavily dependent on products in which Chia dominates production and leads in technology. This is true for solar, wind generation, electric vehicles, and battery technology.

In terms of critical national infrastructure, China is increasingly a monopolistic or oligopolistic provider in communications technology; power generation and distribution; and for much of the world, transportation. Nor is it just the physical infrastructure but increasingly the software and technology that makes infrastructure function.

As a direct consequence of China's manufacturing prowess, it has been able to generate significant trade surpluses which have been recycled into overseas assets of geopolitical significance through the Belt and Road Initiative (BRI). In some ways BRI has become a vendor financing program for much of the world, which helps entrench Chinese industrial dominance while enhancing the geopolitical leverage already imbedded in the trade dependencies.

This in turn is leading to momentum behind the use of a Sino-centric parallel financial system, operating outside the US dollar financial system and beyond the reach of US policy makers.

The geopolitical ramifications of China's manufacturing dominance are changing the cost-benefit equation of trade. While the economic consensus has tended to focus largely on the welfare gains accruing to the buyers of cheap, subsidized Chinese made goods, there is now a growing realization of the costs. To the purely economic producer welfare losses, must now be added some of the externalities and their associated costs. Most important among these are the rising costs of securing defence supply chains; the cost of countering Chinese influence; and the cost of falling behind in the innovation and technology spheres as a result of not being deeply engaged in the practical application of technology to manufacturing.

What remedies are available?

The consequence of what appears to be a disjointed approach by the US is that there has been insufficient progress in challenging China's dominance over what now amounts to almost a decade.

Since the start of the first Trump administration, the United States has begun to respond to the threat posed by China's domination of the manufacturing sector generally, and specifically the industries set out in "Made in China 2025" (MIC2025), that the party-state made clear in intended to dominate.

While some progress has been made, the current situation regarding the rare earths export controls makes it starkly clear there is much more work to be done. This is perhaps unsurprising given the lack of consistency and the ambiguity in the US approach so far.

The first Trump administration relied heavily on tariffs and attempts to curtail US investment in China through the use of the entity list and conversely Chinese investment in the US through an expanded role for the Committee on Foreign Investment in the United States (CIFIUS). Equally, however, that administration seemed willing to act transactionally, as in the case of the "Phase One" trade deal if it saw an opportunity to improve the balance of trade with China.

The Biden administration left in place most of the tariffs but augmented this approach with the CHIPS Act and the Inflation Reduction Act. These put in place subsidized investment; research and development; and tax incentives for specific industries aimed at promoting domestic production.

The second Trump administration has again put substantial faith in a high tariff wall, but has also resorted to export controls in attempt to stall Chinese progress. In other words, over the past few years the US has started to dabble in a fairly wide range of industrial policies, copying China.

The US has now also resorted to direct investment by the state sector in specific industries such as the semiconductor fabrication industry (e.g. Intel) and the critical minerals sector (e.g. MP Materials). These, however, are small minority stakes, the purpose of which is unclear at present, but could be interpreted as signaling a willingness to build "national champions" in some industries.

The consequence of what appears to be a disjointed approach is that there has been insufficient progress in challenging China's dominance over what now amounts to almost a decade.

Part of the problem appears to be a lack of a consistent and systematic approach to economic national security. Such an approach would entail clearly ascertaining which industries are to be targeted; what level of domestic or allied production is desirable; and an assessment of the most efficient way to achieving the goal. A transparent and consistent approach would be more likely to produce buy-in from the private sector and consequently increase the chances of success. In contrast, tariff volatility is putting the private sector in a state of flux in which any kind of planning for the future is becoming impossible.

We would highlight at least four factors that would significantly reduce the cost and risks of a policy aimed at ensuring economic national security.

Given the timeframes involved, a cross-party consensus is required in order to ensure continuity of policy.

Firstly, given the timeframes involved, a cross-party consensus is required in order to ensure continuity of policy. Private sector companies require certainty to commit serious capital to work towards securing supply chains, and investment horizons are not coincident with the electoral cycle.

Secondly, the broader the coalition of participants, the lower the cost and the greater the chance of success. As we have highlighted before, the US alliance network is a key advantage over China. Allied countries bring expertise in particular sectors (5G and semiconductor manufacturing equipment for example); have significant critical resource endowments (Canada and Australia are good examples); and can compensate for some of America's structural weaknesses (some allied economics for example run significant savings surpluses). Tariffs between allies, however, will only increase the cost of achieving the objective.

Given the prerequisite for a political consensus to ensure continuity of policy and the desirability of a coalition of partners, defining the objectives of a national economic security doctrine will not necessarily be easy but is nevertheless by definition almost a requirement for success. The key debate that needs to be resolved is the extent to which manufacturing, innovations and technological leadership fall under the national security label. The Chinese model is a "whole of society approach" but this is incompatible with American values. On the other hand, too narrow a definition, runs the risk of missing the objective of securing supply chains: The key dependencies of tomorrow are currently unknown.

Lastly, deciding on the mechanisms by which state aid is to be delivered to private sector actors in the most efficient way will be crucial. Given the fiscal constraints that democracies operate under, with competing demands on scarce resources, and voting populations with strong preferences, demonstrating value for more and transparency will be important.

While progress has been made on the US' front to tackle China's manufacturing dominance, the current situation regarding the rare earths export controls makes it clear there is much more work to be done.

Given the potential for China to enforce extra territoriality in its rare earth exports – forbid an importing country from re-exporting them to the US in another product – the safe approach is to aim for total self-sufficiency in the products using the rare earths.

In deciding which mechanism to use to achieve the objective of self-sufficiency in the range of goods defined as crucial to national security, we would argue that playing to market economies' strengths rather than their weaknesses would be highly advisable. This would mean using the market mechanism and incentive structures wherever possible, and resisting the pressure for greater direct state participation in the production process.

It now looks as if the tariff revenue accruing to the United States in 2025 may run to about US$200 billion but on a normalized basis (taking recent months revenue and extrapolating that over the year) the ongoing receipts would be closer to US$300 billion. Could this provide a "war chest" for breaking America's trade dependencies on China?

For perspective, consider the long-standing dependency on China for rare earth minerals and magnets. The US has invested about US$500 million in MP Materials for a 15% stake (US$400 million for equity and US$150 million loan facility).

The total US usage of neodymium is estimated at about US$450 million per year, which includes product already embedded in imported end products such as magnets or wind turbines. This compares to rare earth mineral imports per se of just US$170 million. Total rare earth magnet imports are as high as US$1 billion (including embedded ones) but still a small number compared to the potential for output subsidy. MP Materials, with US$550 million of taxpayer money, will produce 11 thousand metric tons of magnets – about 25% of US current total usage.

Given the potential for China to enforce extra territoriality in its rare earth exports – forbid an importing country from re-exporting them to the US in another product – the safe approach is to aim for total self-sufficiency in the products using the rare earths. If, for example, the US were to import wind turbines, it could export its own magnets to the foreign turbine manufacturer and reimport the embedded magnet.

It seems reasonable to argue, therefore, that a total government investment of somewhere in the region of US$2 billion (assuming a similar proportion of private sector involvement) would break the US dependency on China for rare earth magnets. This represents less than 1% of one year's tariff revenue.

An alternative approach would be to directly subsidize desired output on a per unit basis. The tariff revenue would be sufficient money to pay a 20% direct subsidy, on a per unit of production basis of US$1.25 trillion of output or a 50% direct subsidy on US$700 billion of output.

Both the direct investment route and the direct production subsidy route have their advantages and disadvantages. In the specific case of rare earth magnets, with only one operating mine, the direct investment route may well have been the best options.

However, for larger projects and product areas, that lend themselves to multiple companies competing in the market, we would argue that a direct production subsidy scheme offers the government more flexibility, maintains the distance between state and private sector, and utilizes the incentive structure of the market in a way that would generate more competition and hence a lower overall cost to the taxpayer.

Conclusion

The geographic concentration of manufacturing in China and its dominance in specific product areas is a consequence of the combination of industrial policy and free trade.

As the world shifts from a unipolar to a multipolar world, the multilateral trading system is under extreme pressure. The geographic concentration of manufacturing in China and its dominance in specific product areas is a consequence of the combination of industrial policy and free trade. While the static analysis of trade led many to believe that China's industrial subsidies represented a wealth transfer to the rest of the world at China's expense, a more holistic assessment of the true costs of these trade dependencies is changing the economic calculus.

China's drive for self-sufficiency in technology, when combined with its investments in immunizing itself from the impact of economic statecraft, have left China in a powerful position. Furthermore, China is demonstrating the innovation benefits of possessing a deep and comprehensive domestic industrial base, the consequence of which could well be a dominant position in next generation technology across multiple sectors.

As Western countries attempt to rise to this challenge, one of the decisive factors will be the design of policies aimed at breaking the trade dependencies and stimulating renewed leadership in innovation. The western alliance network, combined with a market driven approach to resource allocation, are two fundamental strengths.

While in specific areas of trade dependency, particularly ones where the economic size of dependency is small relative to its significance, such as rare earth minerals, direct government intervention and investment may well be the quickest and most efficient route to success.

The more difficult challenge is going to be designing an economic system in which private sector economic actors are shielded from the competitive pressures of Chinese capital, to regenerate the industrial base outside of China, and in doing so ensure that liberal democracies can compete in the fourth industrial revolution and beyond. The irony is that, prior to China's accession to the World Trade Organization, there was a multilateral system that was a close approximation to a system that would work pretty well for liberal democracies today.

Author bio and endnotes

Stewart Paterson spent 30 years in capital markets as an equity researcher, strategist and fund manager. He has worked in London, Mumbai, Hong Kong and Singapore in senior roles with Credit Suisse, Credit Suisse First Boston, CLSA and more recently, as a Partner and Portfolio Manager of Tiburon Partners LLP.

Having started his career with Hill Samuel in London in 1991, Stewart has covered the full spectrum of global markets equity strategy, developed market equities and emerging market equities. In 2007, he co-founded Riley Paterson Investment Management in Singapore, where he ran a macro-driven hedge fund. He returned to the UK in 2012.

Stewart is the author of *China, Trade and Power: Why the West's economic engagement has failed,* a highly acclaimed book supported by the Hinrich Foundation. He holds an MA degree in Economics from the University of Aberdeen.

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Endnotes

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