THE MADE IN CHINA 2025 STRATEGY: PERCEPTIONS AND RESERVATIONS OF CHINA'S STATE CAPITALIST ECONOMIC MODEL

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Abstract

The Made in China 2025 (MIC 2025) strategy was introduced in 2015 and aims to reduce Chinese reliance on foreign technologies by adopting the import-substitution policy. The United States (US) considers China's super-ambitious industrial policy as a serious threat and is concerned about its high-tech industries, especially as Chinese technological firms are receiving generous government subsidies and tax cuts. The US, thus, entered a direct trade war with China to protect its domestic industries from unfair and inequitable competition. The US-China trade war has seriously shifted and interrupted global supply chains, thus creating a situation of uncertainty and instability for businesses that import and export US and Chinese products. The article is policy-based, and we reviewed the existing literature in depth. We addressed the industrialization pursuits of China under the MIC 2025. Furthermore, the article has analyzed the impact of the US-China trade war on global supply chains. Finally, the article has many implications; the article provides the possible policy routes for the governments of developing countries and regulators to address the reservations of developed countries regarding state-sponsored industries.

Keywords: China, United States, Trade War, State Capitalist Economic Model

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1. INTRODUCTION

The ability to innovate and add to society's knowledge differentiates humankind intellectually from other species. Most of the countries around the world are trying to achieve techno-innovated industries and economies. Innovations typically take place in the North, with the South producing imitations of these products and technology; this explains why the North has continually reiterated Trade-Related Aspects of Intellectual Property Rights (TRIPS) in trade discussions (Borota, 2012). The debate

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around intellectual property rights is often framed using a North-South framework, where the predominant view is that southern (developing) countries tend to lose out from intellectual property rights (IPRs) (Chen & Puttitanun, 2005). The IPRs protect the inventor and ensure future development can occur. In the absence of IPRs, an inventor is deprived of the fruits of her/his labor, as imitators exploit her/his works (La Croix, 1995). However, developing countries believe that IPRs simply create strong monopolies for developed countries: TRIPS enable innovators to charge a higher price for their protected products. Generally, IPR protection will strengthen the market power of innovating firms (typically located in the North) and raise prices in developing countries (Chin & Grossman, 1988; Deardorff, 2011). Countries like China which are still developing their technological capabilities (mostly through imitation and reverse engineering) may lose out and may be thwarted from attempting industrialization in the early stages.

To achieve swift and speedy industrialization, China introduced their Made in China 2025 (MIC 2025) strategy in 2015 (Aysan et al., 2020). This policy aims to achieve advanced manufacturing and industrialization, particularly in the field of emerging technologies. This strategy was initiated by Chinese Prime Minister Le Keqiang upon the direction of Chinese President Xi Jinping. President Xi wants to transform China into a great industrial power by the 100th anniversary celebrations of the People's Republic of China (PRC) set to occur in 2049 (Zenglein & Holzmann, 2019). The aim is to reduce China's reliance on foreign technology imports and invest heavily in its own innovations to create Chinese companies that can compete both domestically and globally (Institute for Security and Development Policy [ISDP], 2018). To achieve their aims, the Chinese government is disbursing subsidies through stateowned banks in the form of low-interest loans. particularly to small and medium enterprises (United States Senate Committee on Small Business and Entrepreneurship, 2019). In the short run, MIC 2025 represents an opportunity for European businesses as they are in a position to provide China with important components and technology needed under MIC 2025. However, in the long run, if China succeeds, then businesses in Europe are expected to shrink as China narrows the technological gap (European Union Chamber of Commerce in China, 2017). China's goal is to implement an import substitution plan in the field of high-tech industrial manufacturing.

In general, the increased inward flow of foreign direct investment (FDI) leads to higher levels of economic growth. When foreign companies bring their operations into the host country, they bring with advanced technology, them knowledge, and resources which ultimately stimulate the economic health of the country. It has also been observed that free trade agreements (FTA) encourage greater trade and FDI among the member countries through the liberalization of goods and service trade (Kayani, 2021). Over the past few decades, the world has experienced a technological transition, as developing countries are aiming to become technologically advanced countries. The United States (US) stance on the MIC 2025 strategy is clear and categorical. The US considers China's industrial policy as a serious threat and is concerned for its high-tech and innovation-based industries. The main objective of

China is to attain domestic innovative high-tech industries (Kayani, 2017). The host country would not be able to benefit from FDI economically if it lacked a proper strategy (Ngwakwe, 2017). Furthermore, the US technological advantage and superiority over China in the field of defense would also diminish if Chinese industries were able to strengthen their technological capabilities because of the government's financial backing. According to a US Chamber of Commerce (USCC) report, "American companies will lose their competitiveness because MIC 2025 provides 'preferential access to capital to domestic companies to promote their indigenous research and development (R&D) capabilities, support their ability to acquire technology from abroad, and enhance their overall competitiveness" (USCC, 2019, p. 8).

Thus, the US has instituted various policies to protect its industries from what it sees as unfair competition from government-sponsored, Chinese technological firms. The US also wants to maintain its technological hegemony and superiority over China. It is interesting to note that the Chinese economy is quite resilient and even though it did not undergo a period of recession during this COVID-19 pandemic, instead, it underwent a prolonged period of economic stagnation (Kayani, 2022). Huawei is the most recent example of the quest between China and the US for global technological leadership. The US suspects that Huawei has connections with the Chinese military, and it believes that Huawei's infrastructure could be used to facilitate political and industrial espionage in the US (Congressional Research Service, 2019). The US has previously accused China of stealing its intellectual property. The introduction and deployment of the fifth generation of telecommunications wireless technologies (5G) has triggered a fierce battle between these technological giants. The rapid growth of China's 5G industry has challenged the US' historic edge in technological innovations (Mariani & Bertolini, 2019). For the 2020-2035 period, it is forecasted that global real gross domestic product (GDP) would grow at an average annual rate of 2.9%, of which 5G would contribute 0.2% of that growth (Campbell et al., 2017).

During his time as President, Donald Trump sought to reduce the US trade deficit against China's growing influence as it is considered a threat to the US national interest. In response, China has stated that the US protectionist policies violate international trade as they hamper free trade. The US countered these arguments by saying China has turned a blind eye to the theft of US intellectual property (Brander et al., 2017). The world has entered a "New Cold War" with the start of a trade war between the two largest economies of the world. The US-China trade war has seriously affected global supply chains as the supply chains that are involved in the export/import of Chinese or US products have been hit with uncertainty and instability due to the war between these two economic giants (Liu & Woo, 2018).

This article has thoroughly explained the superambitious strategy of China for achieving swift industrialization being at par with the US and other industrialized countries. US response to Chinese government-sponsored industrialization and the impact of the US-China trade war upon global supply chains have been investigated quite comprehensively.

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The remainder of the article is organized as follows. Section 2 discusses the literature review including the theoretical base of the study. Section 3 explains the methodology. Section 4 presents and discusses the results. Finally, Section 5 concludes the article with recommendations for developing countries to address the reservations of developed countries regarding state-sponsored industries.

2. LITERATURE REVIEW AND THEORETICAL BACKGROUND

2.1. The Made in China 2025 strategy

For decades, China has been the world's manufactory hub. In 2016, China produced or assembled 28% of the world's automobiles; 41% of the world's ships; over 80% of the world's computers; over 90% of the world's mobile phones; 60% of the world's color TV sets; over 50% of the world's refrigerators; 80% of the world's air-conditioners; 24% of the world's power; and half of the world's steel (European Union Chamber of Commerce in China, 2017). However, most of these products were of low quality and energy-intensive. Thus, China has decided to upgrade its industrial production and compete with advanced countries. China's Ministry of Industry and Information Technology (MIIT) has laid out a three-step strategy designed to achieve its advanced manufacturing goals and leapfrog into emerging technologies.

Chinese Prime Minister Le Keqiang introduced MIC 2025 upon the direction of Chinese President Xi Jinping in 2015. President Xi wants to transform China into a great industrial power by the century celebrations of the PRC in 2049. Under the MIC 2025, the government will grant subsidies to the firms in ten key sectors: agricultural machinery, basic material products, high-tech maritime vessels, energy-saving engines and vehicles, medical devices, mobile devices, high-performance computers, industrial robotics, aerospace equipment, and modern railway equipment (Aysan et al., 2020). They will also provide R&D funds to domestically techno-innovative firms. There is no doubt that China possesses a comprehensive range of industrial classifications has a strong foundation for industrial and upgradation. China possesses 39 large-scale industries, 191 medium-scale industries and 5252 small-scale industries (Huimin et al., 2018).

Table 1. Provincia	l distribution	chart of	ten key	y sectors
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Ten key sectors	Examples of competitive provinces and cities	
New information technology	Beijing, Guangdong, Shanghai, Jiangsu, and Zhejiang.	
Numerical control tools and robotics	Beijing, Shanghai, Jiangsu, Zhejiang, Shandong, Liaoning, Hubei, Hunan, and Shaanxi.	
Aerospace equipment	Aeronautic equipment: Shanghai, Tianjin, and Shaanxi. Spaceflight equipment: Beijing, Shanghai, and Shaanxi.	
Ocean engineering equipment and high-tech ships	Guangdong, Shanghai, Jiangsu, Shandong, Tianjin, Fujian, Liaoning, Hubei, Anhui, Chongqing, and Guangxi.	
Railway equipment	Jiangsu, Shandong, Hebei, Jilin, Liaoning, and Hunan.	
Energy-saving and new energy vehicles	Beijing, Guangdong, Shanghai, Zhejiang, Jilin, Hunan, and Chongqing.	
Power equipment	Shanghai, Jiangsu, Zhejiang, Tianjin, Liaoning, Henan, Shaanxi, and Xinjiang.	
Agricultural machinery	Jiangsu, Shandong, Heilongjiang, Henan, Hubei, and Anhui.	
New materials	Beijing, Guangdong, Shanghai, Jiangsu, Zhejiang, Shandong, Tianjin, Anhui, and Jiangxi.	
Biological medicine and medical devices	Biological medicine: Guangdong, Jiangsu, Henan, and Sichuan. High-performance medical equipment: Guangdong, Shanghai, Jiangsu, Zhejiang, Shandong, Tianjin, Chongqing, and Sichuan.	

Source: Huimin et al. (2018).

China has designed a three-stage strategy to achieve the status of a world-class industrial manufacturing hub. The first step is outlined in the MIC 2025. In the first step, China aims to boost innovation, in their labor productivity, reduce energy consumption and develop industrial clusters that can compete internationally. In the second step, China aims to achieve parity with global industry leaders by 2035. In the third step, China wants to become the manufacturing leader of the world. They hope to complete this third step by the year 2049, the 100th anniversary of the PRC. Keeping these goals in mind, it is important to remember that China is also the world's largest energy consumer and generates most of the electricity coals. The coalelectricity model is outdated and damaging to the environment.

The MIC 2025 strategy aims to reduce China's reliance upon foreign technologies and develop domestic industries that can compete with the rest of the world. International joint ventures and acquisitions achieved via direct government funding represent two ways of accessing foreign technology and enhancing the domestic innovative capabilities of Chinese firms. Other methods include disbursing subsidies through state-owned banks in the form

of low-interest loans. The Chinese government is currently offering such loans, particularly to small and medium enterprises. Direct financial support is also available through various agencies: for instance, the Advanced Manufacturing Fund is offering \$3 billion to key industries to update their technology. Likewise, the China Integrated Circuit Industry Investment Fund (also known as the National Integrated Circuit Industry Investment Fund) has \$21 billion at their disposal. To enable acquisitions and joint ventures with innovative technological and technologically advanced firms in Europe and the US, Chinese companies have invested \$13,6 billion in Germany and \$135 billion in the US over the last eleven years (2005 to 2016). It is important to share that venture capital firms invest heavily in technology firms.

In the short run, MIC 2025 represents an opportunity for the US and European companies as they are in the position to provide important components and technology that China needs to achieve its goals. However, in the long run, Europe and the US will be negatively affected by China's advances, especially if they succeed in narrowing the technological gap and implementing their import substitution plan. The US cannot tolerate a more geographically assertive China, state subsidies, and government support for a competing tech sector, particularly if it enables the Chinese military to challenge US hegemony (Springborg, 2018).

2.2. The US and Chinese economies

The US and China are the largest economies in the world in terms of both nominal GDP and GDP based on purchasing power parity (PPP) methods. In 2023, both the US and China shared 42.73% and 34.23% of the world's GDP in nominal as well as PPP terms, respectively. According to World Bank ("Comparing United States and China", 2023) estimates, China's GDP was around 11% of the US in the year 1960 but it rose to 71% in 2022. The US is the 7th richest country in the world whereas China is ranked 75th and the per capita income of the US is 6.41 and 3.45 times higher than China in nominal as well as in PPP terms. This is mainly because China's population is at least 4 times higher than the US population. But it is quite interesting and astonishing that China lifted about 800 million people out of poverty as per the reports of the World Bank. China has emerged as a role model for many developing nations and many third world countries have also started to follow the Chinese economic model. The Chinese model is quite fascinating to the countries because it is based on win-win cooperation, non-aggression, non-occupation, noncolonization, and non-interference in the domestic affairs of other countries. Over the last few decades, there has been neck-to-neck competition between China and the US on various international platforms.

The US response to the MIC 2025 strategy has been very clear and categorical. The US considers this super ambitious industrial policy of China as a serious threat and extremely alarming for its hightech and innovation-based industries. MIC 2025 has brought China into direct competition with the US; this explains why President Trump openly opposed the MIC 2025 strategy and reacted by imposing higher tariffs upon China. The two largest economies of the world, the US and China have waged an escalating trade war by imposing import tariffs upon one another. It is very important to understand the governing philosophy of then-President Trump to understand the trade war in a better manner. The governing philosophy of Trump can be summarized and understood in the light of Trump's statements as follows (Sun, 2020):

a) *"Make America great again"* was the main target of his governance, which is comprised of a wide range of subjects including *"making America powerful again," "making America rich again," "making America rich again,"*

America proud again," and "making America safe again" (Trump, 2017b);

b) "America first" is the governing principle, which is reflected in many aspects, such as "American people first," "American workers first," "American economy first," "American security first," and "American employment first" (Trump, 2017a).

In terms of the US-China direct trade wars, the US imposed import tariffs upon Chinese aluminum and steel in the first quarter of 2018. The US adopted an import substitution policy to protect US producers against the unfair advantage provided by the Chinese government subsidies offered under its MIC 2025 strategy. President Trump also imposed import duties of 25% on steel and 10% on aluminum using the Trade Expansion Act of 1962. The Trade Expansion Act allows the US protect its domestic industries in times to national security. As a result of the US of implementation of higher import tariffs, the trade war between these two countries has escalated, leading to a slowdown in global economic growth and disrupted trade flows. The trade tensions are not just bilateral, but global; many countries have suffered indirectly because of these trade wars (Li et al., 2018).

The China-US trade war has received widespread attention, not only because of its complicated nature but also because of the vastness of the economies involved. These trade wars will continue to have an impact on China, the US, and even the world economy. In its World Economic Outlook report (July 2018), the International Monetary Fund (IMF) warned that the US-China trade war could cost the global economy \$430 billion and that the US may become the victim of global retaliation via tariff disputes (IMF, 2018). The current threats made by the US and its trading partners are estimated to have lowered global growth by as much as 0.5% by 2020; this represents approximately \$430 billion in lost GDP worldwide. Before entering this trade dispute, China's 2017 exports to the US were worth \$505 billion. Imports were worth \$130 billion (Deardorff, 2011; Li et al., 2018).

 Table 2. The US trade with China (2013-2020)

Years	US exports to China (billions)	US imports from China (billions)	Trade deficit
2013	121,7	440,4	318,7
2014	123,6	468,4	344,9
2015	115,8	483,2	367,4
2016	115,5	462,5	347
2017	129,8	505,4	375,6
2018	120,3	539,5	419,2
2019	106,4	450,7	344,3
2020	124,4	434,7	310,3

Source: United States Census Bureau (n.d.).

Figure 1. The US trade deficit status (2013-2020)



It is very clear and evident from the table and the graph above that the US always had a trade deficit with China of around \$300 billion on average for the years 2013–2020.

Timeline	US imports from China	Chinese imports from the US
January 2018	2.6	6.2
April 2018	2.7	6.6
July 2018	4.3	11.1
September 2018	8.8	13.8
June 2019	14.5	15.3
September 2019	17.5	16.4
December 2019	24.4	20.7
January 2020	16.0	16.4

Table 3. Evolution of average tariff rates (January 2018-January 2020)

Source: Bekkers and Schroeter (2020).



Figure 2. US-China average tariff rates (January 2018–January 2020)

The average tariff rates on US imports from China and Chinese imports from the US have been shared above. We can see from Table 1 that tariffs that China imposed upon US imports increased from 6.2% in January 2018 to 16.4% in January 2020.

Huawei is the most recent example of the quest between China and the US for global technological leadership. The US claims that Huawei is receiving preferential treatment in the form of financial and diplomatic support from the Chinese government, despite Huawei's repeated denials of these allegations. The introduction and deployment of the 5G technology has triggered a fierce battle between these technological - China and US. The 5G technology giants represents developers' response to three modern needs: 1) ensuring a stable connection for a dense "ecosystem"; 2) allowing the continuous streaming of a massive quantity of data; and 3) guaranteeing communications with an extremely high rate of transmission rate (Rühlig et al., 2019). It is estimated that 5G technologies will contribute to the growth of global GDP by 0.2% per year for the next decade and a half (from 2020 to 2035). This represents a total value of \$12,000 billion (Campbell et al., 2017; Meese et al., 2020; Teece, 2017).

It is an open secret that Chinese technological firms are receiving generous subsidies and tax cuts from the government, thus providing them a competitive edge against US firms. ZTE, the telecommunication's-hardware manufacturer, enjoyed greater access to loans from the stateowned China Development Bank (CDB), which also financed Huawei's projects abroad, to a total value of \$9,8 billion; these were provided in collaboration with Exim Bank, between 2012 and 2018 (Hanemann et al., 2019). The US suspects that Huawei's infrastructure could be used to facilitate political and industrial espionage in the US. According to the Department of Justice, China was involved in 90% of all the economic espionage cases the Department handled from 2011 to 2018 (Glaser, 2019). A Foundation for Defense of Democracies (FDD) report found that Chinese cyberespionage costs US companies an estimated \$300 billion annually and poses the "single greatest threat to US technology" (Cooper, 2018).

3. RESEARCH METHODOLOGY

This study is theoretical and is in line with previous studies in this context (Rabbani et al., 2022; Rohman et al., 2021). The theoretical studies provide a more in-depth analysis of the existing studies. Furthermore, this kind of study explores and provides a policy basis for decisions. It is also worth important to discuss the global supply chain shifts and interruptions due to the US-China trade war here.

In the last two decades, the function of the supply chain has evolved significantly in many and several firms; and is considered as one of the most crucial elements in the implementation of a firm's strategy (Al-Shboul et al., 2022). China is the major importer of US luxury products, cars, helicopters, and other technological products. The US is the major importer of household products and utility goods. The US is facing trade deficit issues because Chinese products are cheaper (they have access to cheap sources of labor) and thus can offer a more competitive price in the US market. In comparison, the cost of US production is much higher. This means that Chinese products enjoy a competitive advantage (Sheng & do Nascimento, 2021).

The US' main competitive advantage comes from its R&D industry, along with its technological innovations. The US is expected to become the top economy with a volume of \$25.3 trillion in 2024. This position will allow them global politicoeconomic leadership and will open further economic and diplomatic opportunities for them (Inikori, 2020). China is the second-largest economy in the world, with its expected volume to be approximately \$20.6 trillion in 2024. China's competitive advantage primarily comes from their producing items in mass due to their massive labor force and cheap labor. Cheap labor and government-owned policies have kept Chinese growth at a steady rate. In 2020 alone, China shared 18.34% of the global GDP; this figure indicates its potential and growth in the global economic arena. While the US enjoys advantages associated with the dollar as an international medium of exchange, China undervalues its currency to boost its trade volumes (Archana, 2020).

Global economic leadership is at stake and the US' growing trade deficit with China's trade surplus was one of their major concerns. In addition, US experts are of the opinion that China is involved in intellectual theft and is copying patent technologies: in short, they believe that Chinese technological giants have been copying cutting-edge technological innovations. Chinese production hubs and factories have also been accused of using child labor, forcing employees to work in inhumane working conditions, and using forced labor (Archana, 2020). In response to these claims, the Chinese have argued that they follow all international laws. Furthermore, they contend that the US' protectionism is against the spirit of the global liberal economic order and will hinder global supply chains and consequently hamper the global economic potential.

The trade war between these two countries has led to an increase in product prices for consumer goods from China and the US. At the global level, the production and supply of goods are bound to be disturbed as the finances from the trade proceeds are utilized for further production and the delivery of services. Newly imposed taxes and duties will certainly change the cost and consequently profits and new markets as well (Li et al., 2018). In response to the US' increased duties and tariffs, China has reduced the value of its currency (the RMB) by 10%; this has led to changes in market dynamics as well. While this may provide protection in the short term and help with production, in the long term these changes will inevitably lead to further instability (Takele, 2019). With the current imposition of taxes and duties, the market for US products will presumably increase. When it comes to the purchasing of local goods, purchasing power and spending will determine future trends (Liu & Woo, 2018).

4. RESULTS AND DISCUSSION

MIC 2025 strategy has raised serious concerns among the developed countries. The developed

countries claim that under this state capitalist economic model, the firms of developing countries can produce goods at a cheaper price and thus can sell the goods at much lower rates as compared to the firms of developed countries. The developing countries can address the reservations of developed countries if they adopt the following suggested policies. Firstly, like other industrialized countries, developing countries need to spend heavily on R&D rather than providing unfair subsidies to selected firms and industries. Secondly, the the developing countries need to adopt very strong measures to ensure that intellectual property rights are upheld as this would go a long way in reassuring the developed countries that their innovations are secure. Thirdly, developing countries need to adopt a non-discriminatory approach between domestic foreign patent applications. and Fourthly. the government-funded and sponsored acquisitions of technological firms need to be halted as they are distorting the global merger and acquisition market. Fifthly, the developing countries must ensure that their development is environmentally friendly. Finally, developing countries need to ensure that their plans do not harm the other markets; in short, they should not use predatory trade practices.

5. CONCLUSION

In the industrialized world, technological innovation is crucial for a country's economic survival. Most of the developing countries want to achieve the status of a technologically industrialized nation in the shortest possible time. Every country has the right to pursue the path of industrialization and enjoy a better living standard. In the 1960s and 70s, Japan and South Korea embarked on the path of industrialization. China also decided to follow the path of its Asian neighbors by pursuing technological development and seeking to become a higher-income nation. Not surprisingly, China's plans have come to the attention of the US and other industrialized nations due to their probable impact on these economies. Many Americans are concerned about China's growing economic power, especially under the super-ambitious MIC 2025 plan. In the short run, the MIC 2025 represents an opportunity for US and European companies as they are in the position to provide important components and technology that China needs for its transitional phase. However, in the long run, if China succeeds, then businesses in Europe and the US are expected to shrink as China narrows the technological gap. The only limitation of this article is that it is theoretical in nature. As a future direction, we suggest an empirical study may be carried out in order to assess the impact of the Chinese MIC 2025 strategy on the economic development of the country.

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