ISSN: 2692-7608 DOI: 10.6981/FEM.202107_2(7).0012

The Impact and Path Choice of Sino-US Trade Friction on the "Going Out" of New Infrastructure

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Abstract

Since the Sino-US trade friction in 2018, China's new infrastructure development has been subject to frequent sanction by the us, and its road to abroad has hit a bottleneck. This paper summarizes the present situation and characteristics of new infrastructure , and finds that: influenced by Sino-US trade friction, it is a shift for China's new infrastructure orders, and enterprises face challenges in development; the root of enterprise threat stem from lack of core competitiveness of Chinese enterprises in the high-end technology industry; the Sino-US trade friction has a great short-term impact on China's new infrastructure construction, but it lacks long-term effect. Therefore, this paper proposes some strategies for enterprises to improve their competitiveness from the perspectives of industry-university-research institute cooperation innovation and dynamic capabilities enhancement, so as to reduce the negative impact of Sino-US trade friction on enterprises.

Keywords

Sino-ustrade Friction; New Infrastructure; Industry-university-research Institute Cooperation; Dynamic Capabilities.

1. Introduction

In 2018, the central economic work conference, first proposed the new infrastructure, has been clear about seven new infrastructure——application of 5G network, new energy vehicles (charging pile), UHV transmission, Industrial Internet, artificial intelligence, inter-city high-speed railway and inter-city rail transit, big databases, and put forward a series of policies and guidelines around these areas (liu et al., 2020). Among them, the development of new energy vehicles and application of 5G network are the most promising in China's new infrastructure field. However, since the Trump administration published the National Security Strategy Report in 2017, the trade friction between China and the United States has been continuously upgraded, involving continuously expanding areas, especially the new high-tech industry. According to relevant statistics, in May 2020, the U.S. government put 33 Chinese companies on its “Entity List”, of which 40.74 percent were from the technology sector. The list of these entities includes Huawei, which is represented by the construction of application of 5G network. In July, the us government planned to add another 11 Chinese high-tech companies to its List. Similarly, under the influence of trade frictions and the epidemic, the development of new energy vehicles (charging piles) has encountered bottlenecks. Therefore, based on the above background and focusing on application of 5G network and new energy vehicle industry, it is of great significance to discuss and analyze the impact of current Sino-US trade frictions on new infrastructure and countermeasures, which will effectively prevent the negative impact of trade frictions and promote the rapid and sustainable development of China's emerging industries.

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2. The current situation and characteristics of the "Going Out" of new infrastructure

2.1. Lack of overseas competitiveness, and an unbalanced development trend of the industrial chain

In the era of intelligence, numerous countries have put forward new development strategies around the science and technology industry to lead the global market, such as Made in China 2025, Germany's Industry 4.0. Information technology and digitization are increasingly becoming the core of enterprise competitiveness. The United States has an obvious advantage in big databases centers, industrial Internet, artificial intelligence and other high-tech fields. For example, in the big database industry, Amazon, Google and other U.S. companies are in the forefront, while Tencent, Alibaba and other Chinese companies are still relatively backward. Although China has developed rapidly in applications of 5G network and new energy vehicles in recent years, it still lags behind developed countries, such as the us. For example, in the field of application of 5G networks, some Chinese enterprises (such as Huawei) take the lead, but there are still uneven development in the industrial chain and insufficient advantages of industrial alliances, which limit the overseas development of enterprises (wu & li, 2018). Specifically, due to objective reasons—— history and technology, China's upstream industries in applications of 5G network such as semiconductors and chip technologies are still facing the objective reality of high import dependence and weak technology, and their competitiveness is obviously insufficient.

2.2. Sector trade frictions have escalated, and high-tech sectors have been subject to frequent Western sanctions

There are mainly two aspects for the escalating trade frictions in the new infrastructure industry. Firstly, the depth of trade frictions is mainly reflected in the fact that the United States often restricts China's export on the grounds of national security. As a result, the contradictions gradually escalate from a simple trade dispute to a confrontation at the national political level. Secondly, the extent of industrial trade frictions is mainly reflected in the fact that since the Sino-US trade war, the U.S. has rapidly extended the scope of industrial sanctions to high-tech and other high-value-added industries due to the ineffective effect of sanctions on Chinese products' import and export to the us (wang, 2020). In addition, under the pressure of the us, most countries followed the U.S. lead and banned China's technology export to their countries, with industries —— such as application of 5G network, inter-city high-speed railway and inter-city rail transit —— bearing the brunt. Secondly, the increasing sanctions have made it more hardship for China to expand its new infrastructure internationally. Since Trump took office, the U.S. has openly pointed out that it regards China as an adversary and started to impose sanctions in multi-dimensional ways——from the initial cross-sectional restrictions to the comprehensive sanctions. Many of China's biggest tech companies, including state-owned ZTE and privately owned Huawei, are embroiled in trade disputes with the us. Once the U.S. government imposes sanctions on large Chinese enterprises, it will curb the pulse of China's industrial assets to some extent, thus making the international development of China's emerging industries face difficulties. Once the us government imposes sanctions on large Chinese enterprises, it will curb the pulse of China's industrial assets to some extent, thus making the international development of China's emerging industries face difficulties. Once the us government imposes sanctions on large Chinese enterprises, it will curb the pulse of China's industrial assets to some extent, thus making the international development of China's emerging industries face difficulties (liao, 2001).

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2.3. The high-tech sector has a high dependence on imports, but it is narrowed for the gap between imports and exports in local trade

The new infrastructure sector touches more high-tech technologies, but it is higher for overall import dependence. From the perspective of the market size, prospect and strength of the new infrastructure, compared with other new infrastructure, the application of 5G networks and new energy vehicles are developing well, but it is relatively backward for the technological strength of domestic chips and semiconductors. The chip imports reached $304 billion in 2019, down $8 billion from 2018 and down 2.6 percent year on year, according to customs data. In 2019, the number of new energy vehicles imported reached 158,600, up 101.99% year on year. As can be seen from the data, China's chip imports have declined, but the overall level is still at a high level. There is still a long way to go before China's chip semiconductor sector can wean its baby. And the amount of new energy vehicle imports also increased significantly, import dependence presents a high level. In addition, the United States ,huge for the annual output to the world, has been in the world's leading position in chip technology, and almost all of the country's advanced chips are from the United States. In recent years, thanks to financial subsidies and policy supports from the Chinese government, the local Chinese enterprises have been researching and developing semiconductor chip technology. Trade imports are smaller than they were before, and America's capital genius for chips is waning. The escalation of trade friction between Sino-US and the dual impact of the COVID-19, the width of the trade gap between Sino-US tends to continue to narrow.

3. The impact of Sino-US trade friction escalation on the "Going Out" of new infrastructure

3.1. The new infrastructure sector is constrained Competitiveness, and both large hazard about Chinese and American enterprises

The main reason for the escalation of trade frictions is the rapid development of China's high-tech sector, such as application of 5G network and other communication technologies, which threatens the U.S. technological hegemony to a considerable extent (zhao & peng, 2018). The trade friction continues to extend, and the most direct impact on China's new infrastructure is that it is constrained for the competitiveness of large Chinese enterprises. From the current direction of the event, the most prominent trade friction in the new infrastructure industry is in the high-tech field, among which application of 5G networks are threatened the most. Recently, the president of Huawei publicly announced that the chip supply in the United States has been cut off, and Huawei mobile phone MATE40 may become the high-end Kirin chip out of print, which means that if the United States continues to maintain pressure, without high-end chips, Huawei's core competitiveness will be greatly reduced, and it may be difficult to stand on the market at home and abroad. On the other hand, China is the largest importer of U.S. high-tech enterprises. The U.S. government unilaterally suppressed, forbidding enterprises such as Qualcomm and Intel to conduct trade transactions with Huawei enterprises, which will also cause these enterprises to face huge losses, forcing new orders to be handed over to competitors. Separately, Apple Inc. 's official flagship store on Alibaba in China was also withdrawn from the store. Affected by national sentiment, Apple's presence in the Chinese market is limited to a certain extent, and the number of Chinese audiences may be greatly reduced in the future. It can be seen that the escalation of trade friction between China and the United States is undoubtedly a "bad news" for the enterprises of both sides, and the final scene may be "two tigers fighting, both sides lose".

ISSN: 2692-7608 DOI: 10.6981/FEM.202107_2(7).0012

Table 1. Examples of US government restrictions on China's "new infrastructure" industry

Time	Announcement unit	Event overview
2019-05-10	Office of the United States Trade Representative	An additional 10% tariff will be imposed on China's imports worth US $200 billion; This includes imposing tariffs on imported parts and complete vehicles of China's new energy vehicles.
2019-05-16	US Department of Commerce	For the first time, the United States has imposed restrictions on Huawei enterprises. Huawei enterprises are not allowed to obtain products with technical components accounting for more than 25%.
2020-05-23	US Department of Commerce	The U.S. government has listed 33 Chinese enterprises in the "entity list". The import and export of enterprises from the United States are restricted by the "export administration regulations", of which technology (semiconductor, chip) enterprises account for the vast majority.
2020-07-20	US Department of Commerce	The U.S. government has listed 11 Chinese high-tech enterprises, including suppliers of products to apple and Samsung, for human rights issues in Xinjiang.
2020-08-26	US Department of Commerce	The United States has blacklisted 24 enterprises, including China Telecom, China Mobile and China Communications Construction, on the ground of participating in the construction of islands in the South China Sea.

3.2. China's new orders shift, the companies face challenges

As for the high-tech fields involved in the new infrastructure construction, it mainly falls into two camps for the partners and competitors of Chinese enterprises' overseas expansion: one is the European and American countries led by the United States and the European Union, which mainly reflects the cooperation centered on the upstream industry chain——technology, and the other is the competition centered on the downstream industry chain such as software application. Secondly, developed countries, led by Japan and South Korea, mainly compete in software applications and other downstream industrial chains. In either camp, much of the new infrastructure is knowledge-intensive. As trade frictions escalate, new orders for production by large Chinese companies that rely on the United States and Europe as their main import markets may shift to countries , such as Japan and South Korea. Specifically, in high-tech upstream industries, the United States will lose China as a partner. In addition, with the support of China's "Belt And Road" policy, the overseas expansion of new infrastructure may continue to push forward to South and Southeast Asia and other developing countries. Then, in the above scenario, Chinese enterprises may face new partners with disharmony in negotiation and improper short-term operation. For companies such as those in the United States, a scramble for new orders could lead to a sharp increase in inventories or a forced reduction in production capacity, leading to eventual bankruptcy.

3.3. The large short-term impact of sanctions, but limited long-term effects

The escalation of trade friction between China and the United States has a significant short-term impact on new infrastructure construction. In the short term, it is restricted for China's import and export of goods from the United States (wu, 2018). the trade cycle is extended ,and trade services are suspended. Before the escalation of trade frictions , there was short for the delivery period from the signing of contracts to orders by enterprises of the two countries. Compared with the previous period, the relevant departments of the U.S. government have increased the supervision and review of Chinese enterprises' import and export goods, resulting in longer transaction completion time and a longer China-US trade cycle. In addition, under the restrictions on import and export of the United States, products in some sectors have been directly suspended in trade. For example, Qualcomm has suspended the supply of chips to Huawei. In the long run, however, it is not strong for the lasting effects of trade frictions. On

ISSN: 2692-7608 DOI: 10.6981/FEM.202107_2(7).0012

the one hand, the United States such as Intel, Qualcomm and other enterprises have taken active measures to lobby the government, and to seek licenses. Although the U.S. government intends to curb the export of high-end chips from the United States to China, there are quite different for the attitudes of the government and enterprises . It is not lasting for effects of unilateral threats by the US government .On the other hand, with the proposal of the "internal circulation" policy, a number of Chinese enterprises such as SMIC actively responded to the national policy to deal with the difficulties caused by the escalation of Sino-US trade frictions. In conclusion, although the escalation of trade friction has a big short-term impact on Chinese enterprises, but the long-term effect is not sustainable.

4. The prospect of the "Going Out" of new infrastructure

4.1. Developed rapidly of the "Going Out" of new infrastructure in the post-epidemic era

During the COVID-19 period, China's economic development suffered some setbacks. According to the statistics of the National Bureau of Statistics, the economic report in the first quarter of 2020 showed negative growth, with GDP falling by 6.8% year on year, and most small and medium-sized enterprises were struggling to survive. Similarly, under the pressure of the epidemic and the economic downturn, the development of new infrastructure also faces multiple pressures and opportunities. During this period, large-scale manufacturing, real estate and other traditional enterprises were hit hard and could not recover for a while. In order to speed up economic recovery, the Chinese government vigorously supported the development of new infrastructure and took investment in new infrastructure as an important means of macro-policy control. In the short term, the Chinese government has issued several preferential policies on new infrastructure investment, providing an important guarantee for the rapid development of new infrastructure. For example, in the face of the impact of COVID-19 on the new energy vehicle market (the sales of new energy vehicles decreased by 59.5% year-on-year in January to February 2020), the executive meeting of the State Council proposed to extend the preferential policy of new energy vehicle purchase subsidies to two years. Furthermore, although new infrastructure is limited to “Going out” during the epidemic period, with the attention of governments around the world to the epidemic, the negative impact of COVID-19 is weakened.With the strong support of the Chinese government, the development speed of new infrastructure in the post-epidemic era will be greatly improved and the overall development will be well great.

Table 2. The contents of the government's new infrastructure policies in 2020

Time	Department/Conference title	main content
2020-03-04	Standing Committee of the Political Bureau	Accelerate the construction progress of new infrastructure such as data center and 5G application.
2020-03-20	Republic of China Ministry of Industry and Information Technology	Promote the construction of "5G + industrial Internet".
2020-04-09	The executive meetings of the State Council	New energy vehicles will be exempted from vehicle purchase tax and purchase subsidy, and will be extended for two years.
2020-05-22	Government work report of the State Council	Support the construction of "new infrastructure".
2020-10-09	The executive meetings of the State Council	Provide policy support for the public service industry to use new energy vehicles; Encourage international cooperation.
2020-10-16	Standing Committee of the Political Bureau	Speed up the construction of quantum communication technology.

ISSN: 2692-7608 DOI: 10.6981/FEM.202107_2(7).0012

4.2. Trade frictions increase uncertainty, but will grow in friction

Trade friction has had a huge impact on the development of China's new infrastructure, increasing the uncertainty of the development of new infrastructure. According to Sina Finance , the trade friction escalated, the U.S. Qualcomm lost 8 billion yuan of orders, high-end chip delivery no way, and Chinese enterprises have no access to the chip door. In addition, in May 2019, the U.S. announced a new round of tariffs, which imposed an additional 10% tariff on us$200 billion worth of Chinese imports, including tariffs on imported parts and finished vehicles of new energy vehicles from China. Combined with the impact of COVID-19, it is not optimistic for the current situation of China's new infrastructure development . Further, from the current development trend of Sino-US relations, the unilateral trade threats of the United States have not yet reached an inflection point. What will be the future trend of Sino-US relations? whether trade tensions can be eased, and whether the ban on sending chips to China can be lifted? It will be further discussed with the development of Sino-US political relations.

5. Path selection of the "Going Out" of new infrastructure under Sino-ustrade friction

5.1. Macro policy: build an industry-university-research cooperative innovation mechanism and enhance the core competitiveness of enterprises

In recent years, cooperative innovation has become the key for enterprises to improve their core competitiveness. Production-study-research cooperation is referred the fact that it combines with enterprises, institutes, universities and other institutions to reach reasonable configuration, optimize their resources, realize the innovation factors primitive accumulation and cultivate innovative talents, promoting the development of the industrial technology, the social economic activities has become a key point of enterprise innovation system construction and the improvement of enterprise independent innovation ability of initiative (he, 2012; wang, 2015). Specifically, industry-university-research collaboration can integrate all kinds of resources needed for technological innovation, which plays a positive role in improving the market competitiveness of enterprises and breaking the monopoly of developed countries such as the United States on high-tech industries. Therefore,with the pressure from the U.S. government about technology and intellectual property rights, when New Construction is actively seeking markets overseas, it should actively develop the industry-university-research cooperative innovation mechanism and integrate multiple resources. The Chinese government should give more support to enterprises, universities and research institutes in terms of funds and talents needed for technological innovation, and actively provide policy assistance to enterprises to boost their confidence in going overseas. The new infrastructure enterprises should pay attention to the cultivation of innovation ability, the establishment of core technology laboratories, the development of science and technology innovative composite talents, the formulation of core technology strategy, and promote the realization of technological innovation, so as to improve the core competitiveness of the company as a whole.

5.2. Government policy: build a three-dimensional safe ecological chain of technological product environment, and escort the "Going Out" of new infrastructure

Security is an important guarantee for new infrastructure to “Going out”. It includes the security of its own technology and products, as well as the security of the external environment. The government should increase security awareness in the following two aspects About technology, product safety issues about technology, product safety issues,: First, we should strengthen the protection of technology and intellectual property rights, formulate and improve a series of

ISSN: 2692-7608 DOI: 10.6981/FEM.202107_2(7).0012

laws and regulations, and strengthen the protection of intellectual property rights in important technological fields such as application of 5G networks, communication technology, artificial intelligence and optoelectronic devices. Second, we should implement the security network concept of "hardware" and "software" development of new infrastructure. The government should synchronously build a new infrastructure network security ecological chain, increase investment in network security construction in the digital economy era, and formulate a new infrastructure development security network system. As for the safety of the external environment, although the trade friction between China and the United States has eased under the influence of the epidemic, the issue of maritime safety still needs to be paid more attention. According to relevant data shows, the United States in new infrastructure related industries occupy a certain advantage. The development of China's new infrastructure is largely influenced by the American market, such as the United States in big databases, cloud computing, Internet industry——The chip technology is a world leading position, the depth and range of technological radiation is so wide that, to some extent, the rest of the world is "at America's beck and call". Therefore, the government should pay attention to the negative impact of trade friction on the new infrastructure to the"Going out", and continue to increase the negotiation with the U.S. on the friction issue, so as to reduce the market security problems caused by the U.S. unilaterally, to guarantee the stability of the external environment.

5.3. Enterprise polices: improve the dynamic capabilities of enterprises to cope with political uncertainties

Trade frictions have escalated and the political environment is more uncertain. Dynamic capability is a key ability that it help enterprises to reconfigure , fully integrate human and material resources to cope with rapid environmental changes, which has a significant impact on new infrastructure enterprises to "Going out". Specifically, dynamic capabilities have the functions of adaptation, integration and reconstruction, and can help enterprises quickly adapt to the new complex environment (tang et al., 2015). For enterprises, when new infrastructure enterprises expand in overseas markets, they need to quickly adapt to the new environment, integrate the resources and human resources of all aspects of the enterprise, and rebuild their competitive advantages. Therefore, it is of great sense for new infrastructure enterprises to develop and cultivate their own dynamic capabilities when exploring overseas markets. In general, in order to cultivate dynamic capabilities, enterprises need to cultivate environmental awareness, organizational learning and absorption, and the ability to lead change. We should actively cultivate information acquisition mechanism, pay attention to the construction of creative learning organization, develop innovation system, and attach importance to knowledge-oriented collaborative innovation. At the same time, it is necessary to actively respond to the national policies, follow up the national governance policies, implement and develop the entrepreneurship of the new era,and improve the corporate reputation, so as to flourish in the environment of high uncertainty and poor stability.

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