

The Impact of Tariff Policies on the Medical and Pharmaceutical industry in the Context of the China-U.S. Trade War

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Abstract:

In this paper, we focus on the impact of tariff policies set by both China and the US on the medical and pharmaceutical industries during the Sino-US trade war. We divide the paper into three parts. The first part provides a brief introduction to relevant information. The second part concentrates on the negative impact of US tariffs on China's medical industry. The third part discusses the impact of China's tariff policies on the US pharmaceutical industry. Through these three parts, we have discussed the impact of tariff policies on both sides of the Sino-US trade war, making people realize that the trade war is not only harmful to one side but also has different degrees of impact on both sides. This also helps people have a better and more comprehensive understanding of the challenges and crises faced by the medical and pharmaceutical industries in the Sino-US trade war.

Keywords: tariff policy, medical and pharmaceutical industry, trade war

1. Background

To put it simply, Because China and the United States have conflicts over trade, it will lead to the emergence of economic trade wars. The two countries have had a series of disputes in the economic field. In this trade war, increasing tariffs on each other is equivalent to restricting the entry of goods from each other's countries, which is a measure to compete for the international market.

The first is that the increase in tariffs will lead to an increase in the cost of Chinese exports, and these costs will have an improve in the price of medical devices or drugs in the US market. Meanwhile, the USA will have some anti-sanctions measures, so this

series of behaviors of the United States will also affect the competitiveness of Chinese products in the international market.

The stability of the drug supply chain will be affected to some extent and there will be fluctuations. The trade war will cause the relationship between the two countries to be affected, and is likely to worsen, the medical device industry, including pharmaceuticals, the need for supply chain stability is extremely high. Any fluctuation or disruption will affect products and supplies. In this process, it is necessary to find many new suppliers, open up new markets and strengthen the protection of products and supply chains.

2. Meaning/value

Medical device and drug supply chain, these two things ensure that the medical structure by high quality and reliable treatment level, so that the treatment effect and life safety of patients are guaranteed. Not only that, but a good drug supply chain can ensure that patients receive timely treatment when they need it. Moreover, effective supply chain management can reduce costs, that is, costs can be controlled because of efficiency. Optimized purchasing and inventory can also improve operational efficiency. The research of medical device and drug supply chain is of great academic value, which not only helps to promote theoretical innovation and practical guidance, but also promotes interdisciplinary integration and responds to practical challenges.

3. Introduction

First of all, regarding the stability of the supply chain, formulate a number of emergency plans to deal with potential supply chain disruptions, and secondly ensure the management of inventory. Because of the increase in tariffs, the cost will rise, and the competitive pressure in the international market will become larger, so to accelerate the replacement of domestic products, China should invest more energy in research and development, but also to promote the upgrading of the industry, improve the competitiveness of the entire industry. Strengthen international cooperation, even in the Sino-US trade war, friendly exchanges with other countries must be maintained. There is no single route to expanding markets by strengthening trade links.

4. Introduction to China's Medical Equipment Supply Chain

China's medical equipment supply chain isn't simple. It starts with getting raw materials and ends with delivering products to hospitals. For a long time, China has bought a lot of high-tech medical gear from other countries, mainly the U.S., Germany, and Japan. Mainly imported machines like advanced scanners and surgical tools.

Prior the trade war between China and the U.S., it was cheaper to buy these products from other countries. Hospitals in China could get good quality equipment without spending too much. But when both countries began adding extra tariffs on imports, it resulted in a higher prices. These new tariffs made it more expensive to buy medical equipment from other countries. As a result, fewer products were brought into China. This has made it harder for Chinese hospitals to get the tools they need.

5. Differences Before and After Tariffs

There is large amount of high-tech medical equipment had imported by China before the new tariff policy. According to state in 2017, U.S. exports of medical equipment to China were approximately \$5 billion (U.S. Census Bureau, 2018). Furthermore, prices were stable and trade barriers were relatively low, allowing Chinese distributors and hospitals to access technology at reasonable prices. However, after the new tariffs introduced, U.S. medical device exports to China fell sharply. By 2019, U.S. medical equipment exports to China fell by more than 20 percent (International Trade Administration, 2020). Tariffs of up to 25% on medical equipment have led to significant price increases for Chinese buyers. The cost of importing essential medical equipment forcing Chinese to seek alternatives.

6. How Tariffs Impacted China's Medical Supply Chain

The imposition of tariffs damages the supply chain of medical equipment in China by increasing costs at several stages. Hospitals and healthcare providers began to experience delays in receiving important devices, and the higher prices led to budgetary constraints for purchasing departments.

The most significant impact is the rising cost of medical equipment, which deprives hospitals of the ability to maintain and upgrade their facilities. As fewer drugs are imported from the United States, Chinese hospitals have less access to the latest medical technology, which may reduce the quality of patient care. In addition, some hospitals have had to delay or cancel equipment purchases due to the increased financial burden on hospitals, which could have a long-term negative impact on public health outcomes. The tariffs have had a knock-on effect on the market, harming both direct imports and the broader supply chain that relies on United States components to assemble medical equipment.

First, the Chinese government believes that most crucial thing is to increase their investment in domestic research and development in order to reduce its dependence on foreign suppliers, especially the U.S.. However, in the high-tech areas, their products are not quite competitive as the quality of American products.

Second, it has diversified its sources of imports. By increasing imports from countries such as Germany, Japan, and South Korea, China has sought to diversify its suppliers and reduce its dependence on U.S. products.

Third, China seeks opportunities to relocate supply chains. Chinese firms have sought to relocate portions of their

supply chains to countries not affected by tariffs, such as Vietnam or Malaysia, in order to reduce the cost of imported components and finished goods.

Mindray Medical International is one of the largest medical device manufacturers in China. It experiences a negative affect by the US tariffs because like most of the company in China, Mindray largely relies on the components imported from the US to produce medical devices such as MRI machines and ultrasound machines. And they has reported the increase in production costs after the new tariff policy.

According to the company's 2019 financial report, the cost of important imported parts rose by 15 per cent, but overall U.S. imports fell by 12 per cent. To do so, Myriad began sourcing additional parts from European manufacturers and accelerated the development of domestic alternatives for key components. The company's short-term profitability is being squeezed, but these changes will take time.

7. Policy Recommendations

The Chinese Government could adjust trade policies. For instance, providing short-terms tariff exemptions for essential medical equipment can help reduce costs for health-care providers. In addition, negotiating with major trading partner, especially the US is important. I suggest that Chinese and the US government should no longer been aggressive, and recreate a peaceful trading relationship.

Also, since the import of high-tech product had been restricted. The Chinese Government should continue to support domestic research and development in the medical device sector. Government can provide subsidies or reduce tax for companies' development department or technology institution. That help China reduce its dependence on foreign imports in the long run.

Another effective solution is the government could explore opportunities to move parts of their supply chains to countries that are not affected by tariffs. This could help companies to lower the manufacture expenses due to the lower cost, and establish operations in Southeast Asia or elsewhere.

The government could also try to collaborate with private company to promote the pharmaceutical industry. The col-

laboration between private and public sector will reduce financial burden for both side, and the resources from both side could motivate a higher potential for success

8. The China and America's pharmaceutical industry

The Chinese pharmaceutical industry is one of the largest pharmaceutical markets in the world, and the market size is expanding continuously, expected to grow further. With the increase of government R&D investment, many companies are actively engaged in the development of new drugs and technological innovation. At the same time, the government has passed a series of policies such as reducing taxes and official subsidies to promote international cooperation, further encouraging the development of the pharmaceutical industry.

The US pharmaceutical industry is also one of the largest pharmaceutical markets in the world, covering prescription drugs, over-the-counter drugs, and medical devices. Many top pharmaceutical companies, such as Pfizer, Merck, and Johnson & Johnson, are leading the development of the US pharmaceutical industry. In terms of research and development, many companies invest billions of dollars annually in the development of new drugs and clinical trials. In terms of quality, the FDA strictly oversees the approval and regulation of drugs to ensure their safety and effectiveness, and maximize drug quality. As the world's largest consumer of drugs, the US accounts for about 40% of the global pharmaceutical market. At the same time, the US is an important exporter of drugs, with many innovative drugs. However, the pharmaceutical industry also faces many challenges, including trade frictions with other countries: the US-China trade war is a typical example. In the US-China trade war, the US imposed tariffs on medical products from China, while China imposed tariffs on medical products from the US. However, in both cases, the trade war had a greater impact on the US.

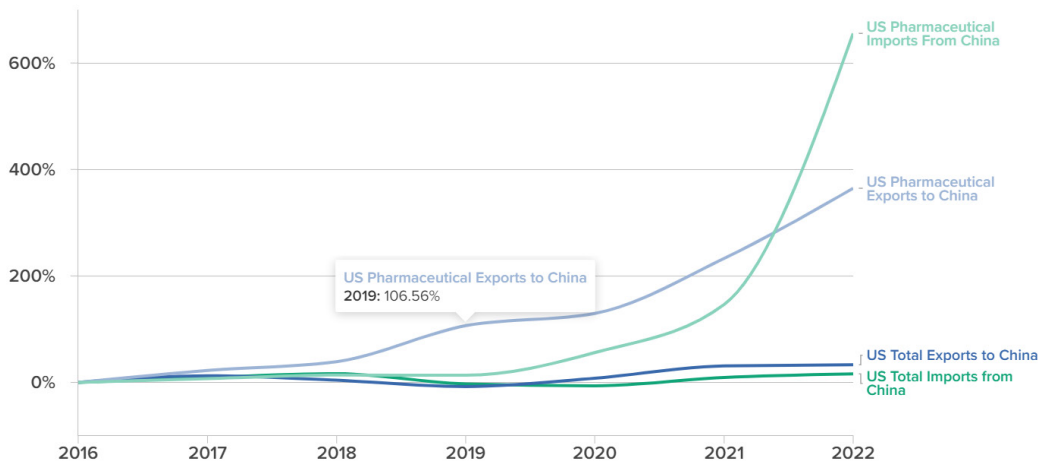
9. How does tariff affect the USA pharmaceutical industry?

This is a diagram which show the US and China's Booming Pharmaceutical Trade

US and China's Booming Pharmaceutical Trade

Percent Change in Value since 2016

Atlantic Council
GEOECONOMICS CENTER



Percent Change in Value since 2016

Source: a diagram drawn by Niels Graham US Census Bureau

Over the past five years, bilateral pharmaceutical trade has grown from just 0.6 percent of trade relations to nearly 3 percent of total value. The United States imports \$10.2 billion from China and exports \$9.3 billion. From this chart, we can intuitively see that since 2016, the trade between the United States and China has been increasing, which indicates that the United States has a strong dependence on China's pharmaceutical industry. About 80% percent of the active pharmaceutical ingredients in the U.S. medical industry come from China, with the rest supplied by countries such as India. Reliance on Chinese raw materials make the United States vulnerable to supply

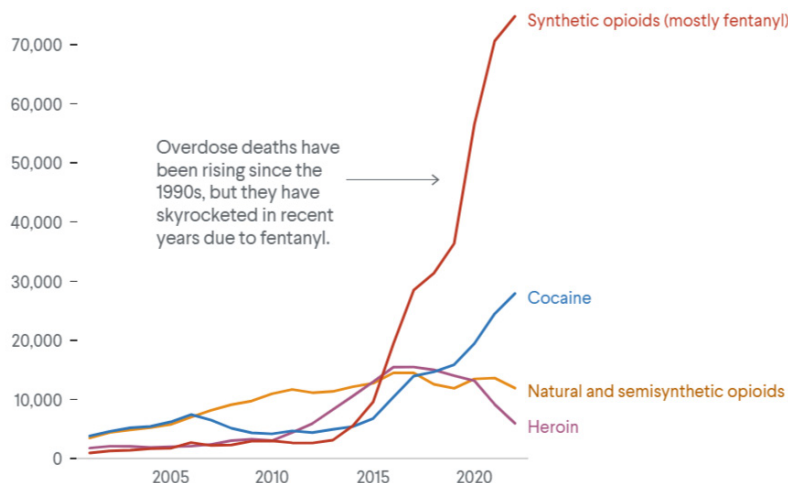
constraints, which can have a significant impact on the cost and availability of drugs. What's more, During the pandemic, protective products and related commodities supplied by China accounted for 17 percent of global exports. Since the US-China trade war covers the full range of upstream and downstream goods, the impact of the tariff increase will have an impact on bulk drugs, bulk drug and generics.

10. Examples of Specific medicine

Fentanyl

Driven by Fentanyl, U.S. Drug Deaths Have Skyrocketed

Overdose deaths involving selected drugs, per year



(How a Trade War Could Affect the US Healthcare Industry, n.d.)

Fentanyl is a powerful drug made from opioids used to treat sudden and persistent pain. It is 100 times more potent than other opioids such as morphine, heroin, or oxycodone.

The United States is in the midst of a well-documented opioid crisis, with about 100 people dying from it every day. After President Biden took office, he banned the production of fentanyl and brought the situation under control for a certain period of time. But China remains a major supplier of illicit fentanyl, which enters the United States through some Mexican smugglers. China has been working with the United States to reduce shipments of these dangerous drugs after the United States imposed tariffs on some Chinese drugs. They have added more dauphitanyl varieties to the list of controlled substances. Their cooperation has had an impact, with fewer of these drugs being seized by U.S. law enforcement. But China's cooperation is at risk because of the trade war, which has imposed tariffs on each other's pharmaceutical industries. Once illegal fentanyl increases, it will have deadly consequences for users and an already strained healthcare system.

Effects on generic drugs

A generic drug with the same active ingredient formulation as the branded drug. Generic drugs are usually cheaper than brand-name drugs. In the United States, the poor depend on it. Tariffs set by the United States and China for each other have led to generic drugs facing rising input prices, and generic drug companies may face greater difficulty in obtaining affordable inputs due to lack of intellectual property portfolios to use in intense negotiations. The FDA estimates that 80 percent of APIs used in the United States come from China or India. Trump's proposed 25% tariff on APIs produced in China would encourage generic drug manufacturers to source APIs outside of China, while also spurring an overall increase in API prices,

making generic drugs less affordable for consumers, some of whom may not be able to afford them. The FDA estimates that 80 percent of APIs used in the United States come from China or India. Trump's proposed 25% tariff on APIs produced in China would encourage generic drug manufacturers to source APIs outside of China, while also spurring an overall increase in API prices, making generic drugs less affordable for consumers, some of whom may not be able to afford them. The increase in pharmaceutical manufacturing costs may be passed on to end users. Rising prescription drug prices could affect insured people in the form of increased health insurance premiums, simply raising the cost of drugs.

11. Conclusion

In general, the tariffs that China and the United States set for each other have an impact on both sides. But in the pharmaceutical industry, the impact on the United States is even greater

References

1. Lingxiu Dong, a Panos Kouvelisa, 2020
2. (How New Tariffs on Chinese Medical Products Will Affect US Healthcare, 2024)
3. International Trade Administration. (2020). U.S. Medical Devices Industry Assessment. Retrieved from [URL].
4. U.S. Census Bureau. (2018). U.S. Exports to China by NAICS Medical Devices. Retrieved from [URL].
5. Mindray Medical International. (2019). Annual Report. Retrieved from [URL].
6. Ni, J., Zhao, J., Ung, C.O.L. et al. Obstacles and opportunities in Chinese pharmaceutical innovation, 2017
7. Niels Graham, 2023
8. Claire Klobucista and Mariel Ferragamo, 2023
9. GlobalData Healthcare, 2018