Foreign trade

The China Market in Transition: How Does Mechanical Engineering Remain Competitive?

Executive Summary

Basic Challenges in the Chinese Market

- German and Swiss machinery manufacturers face a **complex field of economic and political tension** in China. On the one hand, the large Chinese market is an important anchor in the Covid-19 crisis. On the other hand, geopolitical tensions, Chinese industrial policy and the headwinds caused by the pandemic itself make business more difficult.

- As political tensions increasingly affect business activities in China and globally, it is becoming ever more important for German and Swiss mechanical engineering companies to factor them into **their strategy planning for the Chinese market.**

China's Economic Model

- China is clearly not evolving into a Western-style **free market economy**.

- Rather, China is perfecting its model of **"hybrid" state capitalism**. The state retains essential control, and thus significant associated market distortions remain a structural element of this model.

- At the same time, the government leaves **a certain amount of room for market forces to maneuver** and pushes ahead with individual liberalization measures such as foreign investment, pricing and land acquisition. The aim is to increase the effectiveness of the system.

Made in China 2025

- At the core of China's industrial policy is the **Made in China 2025** strategy, adopted in 2015, which has three objectives: 1. modernizing manufacturing; 2. promoting independent innovation; and 3. building national champions.

- China continues to adhere to these goals, even if the Made in China 2025 strategy is no longer mentioned in the Chinese public sphere so as not to provide the USA with further points of attack to criticize the Chinese economic model.

- Almost a third of machinery manufacturers view Made in China 2025 **positively**. This is partly because the strategy promotes the modernization of industry and the demand for intelligent manufacturing.

Results of Made in China 2025

- After 5 years of the program, the **results of the strategy are mixed**. Large companies in particular have modernized their production. SMEs, however, generally lag behind in modernization.

- Made in China 2025 has gradually advanced the **substitution of foreign technology** in some areas, such as traction batteries, energy technology or electric cars. In other areas, however, the strategy has performed less successfully, for example in semiconductors or medical technology.

- In mechanical engineering, Chinese companies have used state aid to narrow the **technology gap** with foreign competitors, for example in five-axis machine tools. More and more, leading Chinese companies dominate the mid-market segment, while foreign companies continue to set the tone in the premium segment.

14th Five-Year-Plan

- The **14th Five-Year Plan provides a strategic response** to the challenges of the Covid 19 pandemic and the conflict with the USA.
- It is also based on the belief in the **superiority of the Chinese political system**. The early recovery from the pandemic is seen as an opportunity to catch up with the industrialized countries.
- **Specific Five-Year plans** for mechanical engineering and intelligent manufacturing as well as for individual industrial sectors such as robots, agricultural machinery or construction machinery are also currently under development.
- Slightly more than half of the **machinery manufacturers** see the new five-year plan as relevant for their business in China. They consider the concept of "dual circulation", China's ambitions for technological independence and China's climate policy to be particularly important.

Dual Circulation

- Dual Circulation as the core strategy of the plan aims to **increase domestic demand** through more household consumption among other things. This is intended to strengthen China's economic independence and resilience in the face of the uncertainty in global markets flowing from Covid-19 and the conflict with the USA.
- Nevertheless, Dual Circulation continues to attach great importance to **international trade**. China promotes regional economic integration with China as the center.

Technological Independence

- Like Made in China 2025, the 14th Five-Year Plan promotes China's **technological independence.**
- Unlike Made in China 2025, the emphasis is now shifting to **national security** and vulnerability to disruption of supply chains for key technologies by the USA.
- An intensification and acceleration of efforts to achieve technological independence is therefore to be expected. In particular, the government is focusing on **"bottleneck" technologies,** such as advanced semiconductors, on which China depends but which it can develop or produce only to a limited extent itself.
- A draft plan for **smart manufacturing** calls for Chinese brands to serve 70 % of the smart manufacturing market by 2025.

Climate Policy

- Xi Jinping's announcement of **carbon neutrality by 2060** has triggered an acceleration of climate policy, for example in emissions trading, emission targets for the steel sector and the expansion of renewable energies. Nevertheless, the emission targets of the 14th Five-Year Plan are rather moderate until 2025. For the period 2021 - 2025 and beyond, there is so far no cap on CO^2 emissions.

Instruments of Industrial Policy

- The government is implementing the objectives of the 14th Five-Year Plan through a number of economic and industrial policy instruments that can lead to **market distortions** to the detriment of foreign companies.

- The government continues to provide **extensive subsidies** to companies, for example for industrial modernization or research and development. According to an analysis by Sinolytics, about 150 Chinese machinery manufacturers receive annual subsidies of € 1.15 billion, or 12 % of their net profit.

- The 14th Five-Year Plan intensifies **the reformation of state-owned enterprises** to make them more competitive. The Plan contemplates that more private investors will be involved, and that management will function in a more market-oriented way. Major restructuring has already taken place in the mechanical engineering sector. For example, Shenyang Machine Tools was taken over by the China General Technology Group.

- China uses **standardization** specifically as a tool to achieve industrial policy priorities. A systemic disadvantage of foreign companies through strategic standardization is therefore possible. 40 % of VDMA and Swissmem members observe disadvantages for their business due to specific Chinese standardization.

- However, new opportunities are also opening up as **standardization bodies** are increasingly open to foreign companies. However, only 8 % of VDMA/Swissmem members are active members of technical committees in China.

- The **protection of intellectual property** remains the greatest challenge for German and Swiss mechanical engineering companies in China. Nevertheless, China has steadily improved protection and with an effective strategy, companies can partially avoid or punish intellectual property violations.

Foreign Trade Policy

- Although China no longer relies primarily on export surpluses for its growth, an **active foreign trade policy** is an important component of "dual circulation". In its trade policy, China wants to expand market access in third countries for its export products, while imports should increasingly concentrate on higher-value goods. At the same time, supply chains are to be optimized with regard to national security. In terms of investment policy, the Chinese market is to become, in the words of President Xi, a "marketplace".
The Chinese economy will become a "powerful gravitational field" that attracts foreign capital, technology and talent. At the same time, the internationalization of Chinese companies will continue.

- Another priority of China's foreign economic policy is the increased economic integration of the Asia-Pacific region, in particular through the **RCEP agreement**. This approach builds on the regional connectivity for trade and investment created by the Silk Road Initiative and is also intended to strengthen China's role in regional value chains and production networks. With this regionalization, China is also pursuing its geo-economic interests.

- For the mechanical engineering sector, the RCEP agreement has **three main strategic effects**: 1. short-term growth effects in the regional economies that promote business; 2. possible negative competitive effects in the medium to long term due to imports from Japan and South Korea; and 3. long-term partial shifts of Chinese production networks, particularly in the direction of Indonesia, Thailand and Malaysia.

- Finally, a whole range of **foreign trade instruments** will be newly established for the 14th five-year period. On the one hand, promotion instruments such as the (FDI) positive lists, technology import positive lists and extensions of free trade zones and ports are aimed at attracting high-tech and high-quality products. On the other hand, various instruments are used to strengthen the export activities of Chinese companies. These include pilot zones to promote cross-border trade E-commerce, the digitalization of trade, the development of export alliances, the promotion of production-supporting services and export-oriented logistics.

Geopolitics and Decoupling

- The **Biden administration** continues to take a hard line against China. As part of the systemic competition, mainly the USA, but partly also China itself, is pushing economic and technological decoupling at different levels.

- Almost half of **German machinery manufacturers** say they are affected by the economic conflict between China and the USA; mostly by punitive tariffs, delivery difficulties due to disruptions in the supply chain and delivery restrictions to Chinese customers.

- On the **Swiss side,** only 22 % of companies see their China business threatened by the economic-political conflict. Here, too, the increase in punitive tariffs is the biggest challenge.

- If **political tensions** intensify, German and Swiss machinery manufacturers could be forced to choose between the American and Chinese markets.

- **Export and investment controls by** both the USA and China can have an increasing impact on exports and supply chains of European machinery manufacturers as a result of extra-territorial application.

- In particular, the US government's **"Entity List"** specifically cuts off individual Chinese companies from US technologies. In 2020, 125 Chinese companies were on this list. Under certain circumstances, this could also indirectly influence the exports of European companies.

- For its part, the Chinese government has signaled that it **will punish foreign companies** that comply with foreign sanctions and thereby harm Chinese business interests. These rules have not yet been applied, but could pose a decision-making dilemma for foreign companies

Debates on Foreign Trade Policy in the EU/Germany

- In March 2019, the EU fundamentally realigned its **China strategy**. In it, China is simultaneously referred to as a "cooperation partner", "competitor" and "rival" with regards to the respective political and social model. This China strategy also included a 10-point action plan.

- Among other things, several measures have been taken to address distortions in the EU market caused mainly by **Chinese state-owned enterprises or state financing**: 1. introduction of a new investment control regime at the EU level; 2. presentation of a connectivity strategy as an alternative to the Silk Road Initiative; and 3. creation of autonomous instruments.

- The overarching concept of **"open, strategic autonomy"** developed by the EU in response to a **geopolitically** increasingly uncertain world provides the basis for a holistic rethinking within the EU with regard to its dealings with China. This new concept envisages strengthening the EU's independent decision-making capacities in economic, foreign and security policy vis-à-vis foreign powers.

- In addition to the China strategy, the European Commission published a comprehensive new strategy on European trade policy in February 2021, which defines **reciprocal and fair trade with China** as a core priority. Above all, the new trade policy is meant to align with the EU's "open, strategic autonomy" as well as its geopolitical interests.

- Ratification of the "**Comprehensive Agreement on Investment** (CAI), agreed upon between the EU and China at the end of 2020, remains uncertain in the wake of mutual sanctions. The European Parliament passed a resolution on 20 May 2021 stating that the ratification process is stopped as long as the Chinese sanctions against representatives of EU institutions remain in force. Against this background, the ratification of the CAI is considered unlikely.

Debates on Foreign Trade Policy in Switzerland

- The **first China strategy** recently adopted by the Federal Council presents an analysis of China as a new world power, defines principles for future cooperation and sets out goals and measures for foreign policy towards China. In view of Switzerland's geopolitical positioning as a non-aligned and neutral state, it basically follows the proven, flexible approach of Swiss foreign policy.

- Although Switzerland is looking to update the **Switzerland-China Free Trade Agreement**, especially to improve market access for Swiss industrial goods and services, the economic incentives for China to update the agreement remain limited. A second restraining factor is China's diplomatic irritation, as stated by the the Chinese ambassador in Bern.

- A Memorandum of Understanding concluded between Switzerland and China in 2019 for **cooperation in third markets** along the Chinese Silk Road Initiative has not yet opened up the desired economic opportunities for Swiss business. The analysis of China's strategy for the Silk Road Initiative is also more critical and explicitly recognizes the geopolitical motives behind this Chinese government initiative.

- **Corporate responsibility** is an ever-growing area of concern in connection with China. Due to concerns about human rights violations, especially of ethnic minorities in China, the parliament has become very active and criticizes the China strategy as insufficient in this respect. Revised at the beginning of 2021 by the Federal Parliament, the National Action Plan for the Implementation of the "UN Guiding Principles on Business and Human Rights" and on Corporate Social Responsibility is an important reference.

- In March 2020, Parliament adopted the so-called **"Motion Rieder"**, a legislative mandate declared binding by the Swiss Parliament, and instructed the Federal Council to develop an investment monitoring system. The Federal Council had previously concluded in its own analysis that monitoring was sufficient. The decision in favor of an investment control follows a current broad international trend to create autonomous instruments for national security reasons, with which a state can block business takeovers by a sovereign power if necessary.

Cybersecurity

- Since the **Cybersecurity Law of 2017,** the Chinese state has issued numerous specific requirements for cybersecurity. Foreign companies with branch offices in China are also affected by these measures.

- The sheer volume and complexity of regulations can be a challenge for SMEs.

- Despite this momentum, 42 % of VDMA and Swissmem members have not yet evaluated the impact of cybersecurity regulation on their company. 14 % expect challenges; 28 % expect none.

- In particular, many see the delay in Internet speed and the limited access to servers abroad, an unclear legal situation with VPNs and the regulation of cross-border data traffic as the greatest challenges.

- Compliance with European and international cybersecurity regulations (such as the GDPR and ISO/IEC-27001) is an important basis, but is not sufficient for compliance with specific Chinese rules.

- The rules for cross-border data transfer have not yet been finalized. However, it is expected that the transfer of personal data in particular will be regulated, for example employee and customer data. There is even less clarity so far regarding the transfer of machine data. Data-based business models and services in mechanical engineering such as remote monitoring, maintenance or cloud platforms could be affected.

- Even less attention is paid to the important and mandatory self-assessment of IT systems by the company itself, such as websites and platforms hosted in China. This may require a review by external auditors and subsequent registration with the police authorities.

Branches/Industrial sectors

- Chapter 9 of the study analyzes in detail the implications for seven branches or industrial sectors: Machine tools, precision tools, plastics and rubber machinery, agricultural machinery, fluid technology, drive technology and textile machinery.

Recommendations for Action

- Chapter 10 of the study provides strategic and operative recommendations for mechanical engineering companies in the Chinese market. These include innovation, Chinese competition, localization, the development of Asian markets outside China, government relations, intellectual property protection and standardization.