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THE ROLE OF CHINA IN RESHAPING WESTERN AUTOMOTIVE STRATEGIES

Pauline Marie Dominique Garcies: *How can China's strategic approach to supply chain management reconfigure the Western automotive supply chain landscape today?*

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Abstract

This study examines the significant impact of the Chinese automotive industry on Western car manufacturers' strategies, focusing on product development, supply chain management, marketing, and sales strategies. The study examines how Chinese strategies are reshaping the competitive landscape and what Western companies need to do to adapt and compete effectively. The analysis highlights the Chinese influence in various areas of the automotive sector, while the findings emphasize the need for Western companies to realign their business models and strategic approaches. Recommendations are made on how Western companies can integrate these findings and improve their competitiveness in a rapidly evolving industry.

Key Words: *Chinese Automotive Industry · Product Development · Supply Chain · Digital Marketing · Direct Sales*

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List of abbreviations

AI	Artificial Intelligence
AR	Augmented Reality
BaaS	Battery as a Service
BRI	Belt and Road Initiative
C-V2X	Cellular Vehicle-to-Everything
CRM	Customer-relationship-management
EV	Electric Vehicle
HD	High Definition
HMI	Human Machine Interface
ICE	Internal Combustion Engine
ICT	Information and Communication Technology
IoT	Internet of Things
JIT	Just-In-Time
KOL	Key Opinion Leader
L4	Level 4
LFP	Lithium Iron Phosphate
LiDAR	Light Detection and Ranging
MSPR	Manufacturer's set retail price
NEV	New Energy Vehicle
NMC	Nickel Manganese Cobalt
OEM	Original Equipment Manufacturer
SCM	Supply Chain Management
SCR	Supply Chain Reconfiguration
SM	Social Media
SOE	State-Owned Enterprise
V2X	Vehicle-to-Everything
VR	Virtual Reality

1 Introduction

1.1 Contextualizing the Chinese Automotive Market's Global Significance

The global automotive industry represents a cornerstone of innovation and market evolution, deeply influenced by economic, technological, geopolitical, and societal factors. Historically, the industry evolved through ground-breaking innovations, from the invention of the internal combustion engine (ICE) in the late 19th century, through Fords' mass assembly line production in the early 20th century, to the recent advancements in electric vehicles (EVs) and autonomous driving technologies. This evolution underscores broader industrial and economic shifts, influenced by significant changes in consumer preferences (i.e. needs and demands), regulatory environment (i.e. market disruptions), and technological capabilities (i.e. AI, IoT, and blockchain) (Britannica 2024).

In recent decades, China has emerged as a pivotal player in the global automotive market, not only as significant consumer but also as a hub for automotive manufacturing and innovation (ITA 2023). This shift is reflected by the Chinese government's policy interventions aimed at fostering a competitive national automotive sector, emphasizing its input in the production of EVs and hybrid vehicles as a part of its broader industrial goals (Li, Yang and Sandu 2018).

Yet, China's role in influencing the automotive industry's global value chain extends beyond mere production and product development. It includes significant advancements in digital marketing strategies and sales strategies. By leveraging online platforms (e.g., websites, social media) and emerging technologies, China has not only enhanced market penetration domestically but also set new standards for global automotive marketing practices. Moreover, as Chinese companies increasingly adopt direct-to-consumer sales models and leverage online platforms, they can bypass traditional dealership networks. This strategy streamlines sales processes and reduces costs (Birke and Will 2022). The combined impact of these factors places the global automotive industry at a crossroads, with Western automotive companies facing the

imperative need to adapt to the rapid changes initiated by China's strategic moves in the industry.

1.2 Problem Definition, Research Gap, and Research Questions

1.2.1 Problem Definition

In the wake of technological advancements, evolving consumer preferences, and geopolitical shifts, the automotive industry faces unprecedented challenges and opportunities. Central to these dynamics is the ascendancy of China as a key player in the industry, reshaping the automotive value chain. This transformation, reflected in China's significant investments in product development, sales and marketing strategies, and supply chain resilience, poses a critical question on the capacity of Western automotive companies to adapt and remain competitive.

Indeed, while China's automotive industry has demonstrated remarkable adaptability in modernizing its value chain, Western firms appear to lag in fully integrating innovation and digital tools into their operations.

This thesis aims to analyze the influence of Chinese automotive strategies on the Western automotive market, particularly looking at pivotal trends within the Chinese automotive sector. Thus, this study intends to uncover how Chinese automotive brands have been able to successfully dominate the automotive industry, identifying key strategic trends that distinguish the Chinese automotive market: product development, supply chain organization, digital marketing, and sales strategies.

Through this analysis, the research paper seeks to provide insights and strategic recommendations that can help Western automotive companies align more closely with current global market trends, ensuring they remain competitive as Chinese influence continues to grow.

1.2.2 Research Gap

Scholars often explore what brands can learn from China to succeed in their own markets. However, few investigations have been conducted into China's influence on Western market practices. Given China's expanding role in the global automotive industry and the increasing presence of Chinese car manufacturers in Western markets, it becomes increasingly crucial to understand and respond to their strategies.

1.2.3 Research Questions

To fully understand and develop effective responses to the impact of Chinese automotive strategies on Western markets, this study will be broken down into several research questions. These questions aim to uncover the details of China's dominance in key areas of the automotive industry and to explore strategic initiatives for Western counterparts. The following questions will guide the research and aim to emphasize the potential changes required in specific areas of the Western automotive value chain. Thus, each question focuses on a different trend of the overall study, ensuring an in-depth analysis of the interaction between Chinese influence and potential Western adaptation in the automotive sector. In summary, the four trends mentioned previously are explored through the following questions:

RQ1: How can China's technological innovations in the automotive industry influence Western car manufacturers' product development strategies?

RQ2: How can China's strategic approach to supply chain management reconfigure the Western automotive supply chain landscapes today?

RQ3: How can China's strategic digital marketing communications transform Western digital marketing efforts in the automotive industry today?

RQ4: How can direct sales models in the Chinese automotive industry serve as an example for Western sales strategies?

1.3 Limitations

This study follows a qualitative approach to assess the impact of Chinese automotive strategies on Western markets, particularly examining product development, supply chain management, digital marketing, and sales strategies. The study is geographically limited to European and North American markets, the primary regions in competition with Chinese automotive companies (Munoz 2023). Moreover, due to different dynamics and competitive landscapes, the analysis only focuses on the automotive industry, excluding other significant sectors such as consumer electronics. Furthermore, this research aims to focus on the latest available data to ensure relevance, using historical data for context and primary data for insights and impressions from experts in the automotive industry. Finally, the analysis focuses on strategies and market responses from major automotive firms, excluding smaller entities, to avoid isolate case-specific events. It is also important to acknowledge that this thesis, based on qualitative analyses, may face limitations in objectivity, as these studies can be influenced by biases from data sources or the interpretations of the researcher (Chiang 2015). These limitations are designed to clarify the research focus and ensure a detailed examination within the Western automotive industry.

1.4 Outline / Course of Investigation

To address the research questions effectively, the study is divided into nine chapters as follows:

- **Chapter 1** – Introduction: contextualizes the global significance of the Chinese automotive market, defines the research problem, identifies gaps in existing literature, poses the study's guiding questions, acknowledges limitations, and outlines the course of the investigation.
- **Chapter 2** – Literature review: this chapter lays the foundation on the global automotive industry, followed by a comparative analysis of China and the West.
- **Chapter 3** – Methodology: we detail our research methodologies, including data sampling and content analysis techniques.

- **Chapter 4** – Findings and Data Analysis: we present the findings obtained from our primary data sets.
- **Chapters 5 to 8** – Investigations: we delve into the individual sub-investigations beginning with China's unique factors, technological innovations in areas such as electrification, autonomous driving, and connectivity and conclude by discussing the implications for Western car manufacturers. The second sub-investigation examines China's operational resilience within its supply chain, analyzing the complex network of manufacturers, suppliers, and distribution centers and the strategic initiatives aimed at enhancing global competitiveness. The third sub-study explores the role of marketing, particularly the digital communication strategies of Chinese key players, by analyzing their strategic positioning, branding practices, and customer-relationship-management (CRM) in the digital sphere. The fourth sub-investigation thoroughly examines sales strategies in the Chinese market, analyzes dealership networks and direct-to-sales models, and discusses the implications of changing sales approaches in the industry.
- **Chapter 9** – Conclusion: we examined China's impact on the Western automotive industry, and recommend strategic shifts.

2 Literature Review

2.1 Global Automotive Industry

2.1.1 History of the Global Automotive Industry

The history of the global automotive industry is characterized by several ground-breaking milestones that have significantly influenced modern societies and economies. The sector has evolved dramatically since its beginnings in the late 19th century and has become a cornerstone of manufacturing and technological innovation on a global scale (Library of Congress 2024).

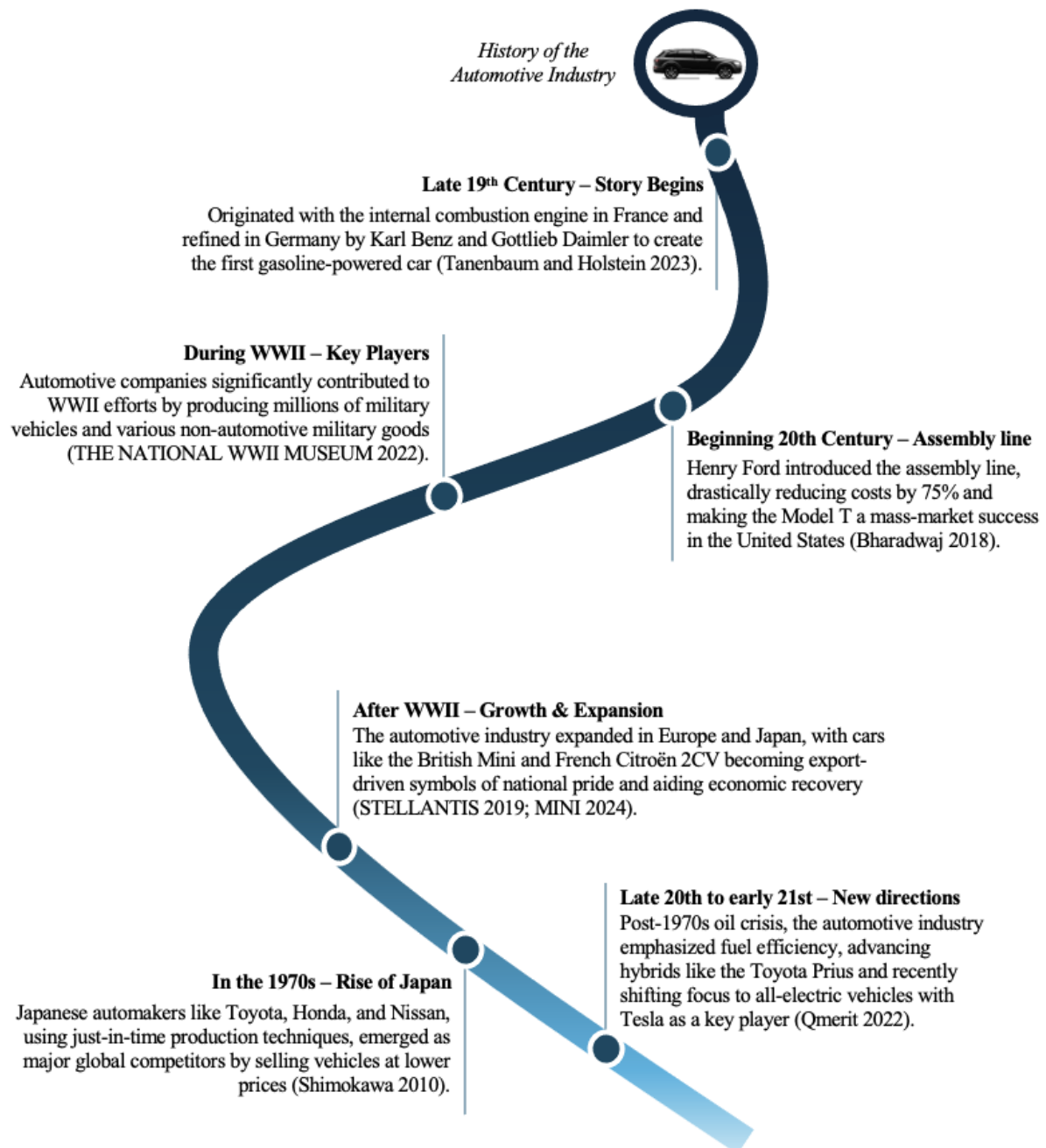


Figure 1. History of the Automotive Industry (own illustration)

Today, the automotive industry is on the cusp of a technological revolution where electrification, autonomous driving, connectivity, and shared mobility are among the new frontiers. These developments are changing the way we experience cars, making them greener, safer, and more integrated into customers' everyday digital lives. Traditional industry leaders need to rethink their strategies and adapt to the changing conditions and new market entrants,

many of them from China (Sadaf, et al. 2023; Tohme 2023).

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2.1.2 Market Structure and Environment

The automotive industry is a market with a high global economic impact due to its complex and diverse market structure. It comprises various entities such as manufacturers of passenger and commercial vehicles, suppliers, dealers, and mobility service providers (Wallentowitz, Freialdenhoven and Olschewski 2008). Market structures vary according to the type of organization. This discussion will focus on car manufacturers, which typically operate in an oligopoly (Cano-Kollmann, et al. 2018) where many large players, such as Toyota, Volkswagen, General Motors, and Ford, have historically competed and dominated market shares. However, the market is now in a state of flux, with Chinese players such as BYD, Geely, and NIO catching up and challenging the status quo market (Bechmann und Scherk 2009).

Amidst competitive pressures and constant change, a micro-analysis based on Porter's five forces model can provide insights into the key dynamics shaping the industry and, most importantly, clearly illustrate the market situation that Chinese players are challenging. In doing so, Porter's five forces help to better understand the existing competitive environment and identify opportunities to establish new innovative market potentials that facilitate entry into the industry (Porter 1989).

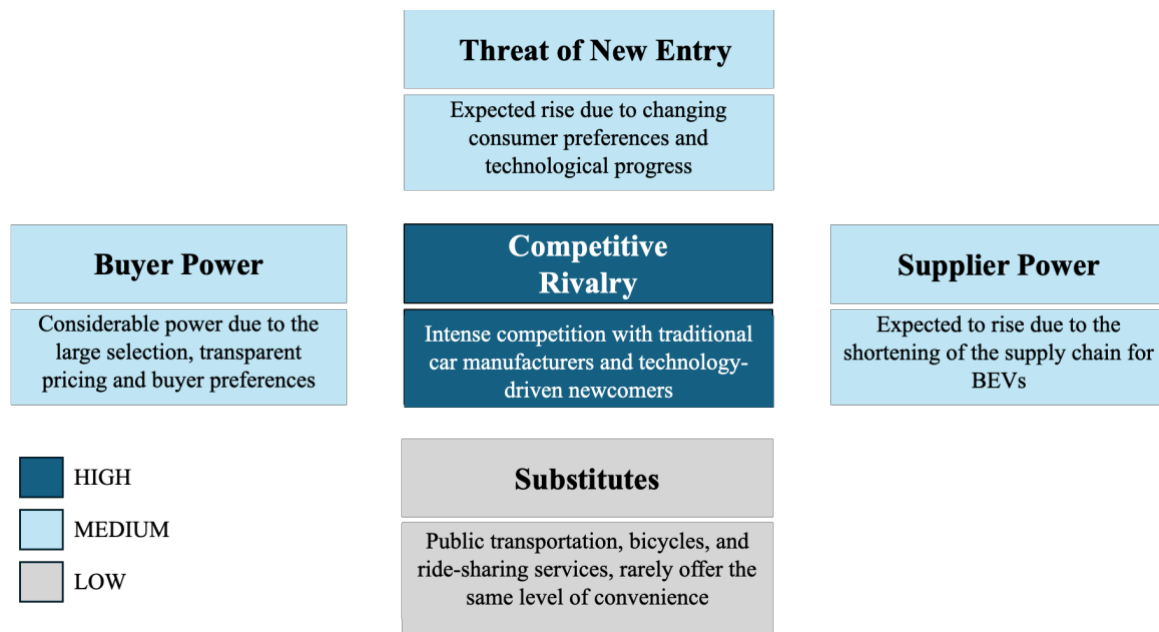


Figure 2. Porters Five Forces in the Automotive Industry (own illustration)

Threat of New Entry

- Market entry requires significant capital investment in technology and research, brand building, manufacturing facilities, and regulatory compliance.
- Barriers offer limited protection from new entrants as changing consumer preferences and technological advancements gradually weaken them (Grieco, Murry and Yurukoglu 2021).
- Chinese Electric Vehicle manufacturers offer unmatched low prices when entering Western markets with advanced technology and digitalization, creating tangible competition (Immenkötter 2024).

Supplier Power

- Suppliers who control critical components have more leverage whereas smaller suppliers have less (Hebisch, Wild and Herbst 2022).
- The number of components needed for EVs is estimated to be 30 to 40% lower than for ICEs, resulting in a leaner manufacturing process with fewer suppliers. Therefore, the bargaining power of suppliers is expected to rise (Cao, et al. 2021).

Buyer Power

- Consumer preferences serve as a driving force for companies to improve, deliver superior customer service and influence vehicle design and production (Peters 2000).
- Growing demand for EVs is a direct correlates with consumers' increasing preference for environmentally friendly vehicles (Redelbach, et al. 2013).
- Crucial to understand and anticipate these trends to maintain competitiveness; these shifts in consumer behavior cannot be overstated (Metwally 2023).

Substitutes

- Popularity depends on factors such as cost, convenience, environmental impact, and traffic conditions (Wallentowitz, Freialdenhoven and Olschewski 2008).
- Technological advancements, such as telecommuting, further reduces the need for cars by reducing travel demand.
- Car ownership remains indispensable as substitutes rarely offer the same level of convenience as owning a private car (Beirão 2007).

Competitive Rivalry

- Fierce competition as companies fights for market share and pursue economies of scale while competing on several fronts, spanning prices, innovation, and quality (Wang, Zheng and Lin 2024).
- Electric vehicles and novel mobility solutions has intensified competition, with both traditional car manufacturers and technology-driven newcomers contending for dominance, exemplified by Tesla, NIO and BYD (Mu 2023).

In summary, the industry faces substantial forces demanding significant effort, yet also presents many growth opportunities. Anticipating shifts in customer behavior, regulatory compliance, and technological advancements are essential for navigating these transformations.

2.1.3 Characteristics of the Global Automotive Industry

The automotive sector is rapidly expanding and plays a significant role in shaping the global economy. This is demonstrated by the sector's extensive internationalization of its production, driven by the relentless pursuit of economies of scale, access to new markets, and the optimization of production and supply chain logistics (Krasova 2018).

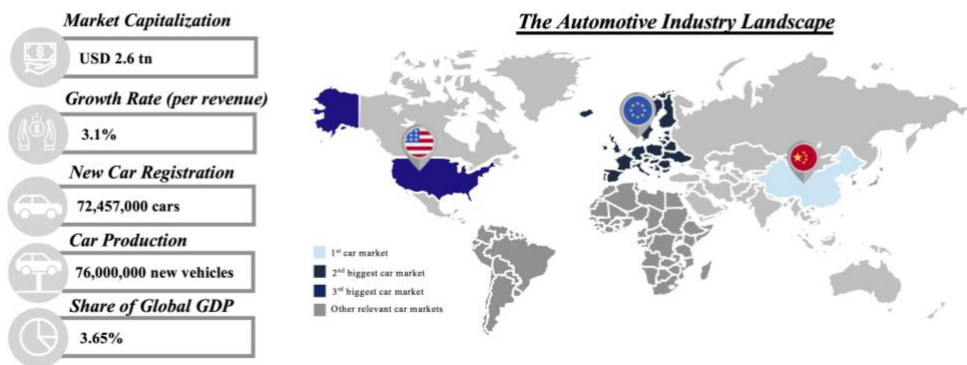
With a market capitalization of USD 1.4 trillion, the automotive industry is among the largest industries in the world, comparable in size to industries such as oil and gas, real estate, or insurance (Dyvik 2023; Yahoo Finance 2023). Additionally, being one of the oldest industries, originating in the late 1800s, and established companies as key players, new entrants are challenging the status quo. High initial and ongoing investments, low margins, fierce price competition, and high sales incentives do not seem to deteriorate the technological advancements in the industry (Lemp 2022). Besides that, governments and consumers increasingly emphasize sustainability topics, affecting the highly globalized supply and value chain. Additionally, rising geopolitical tensions in the South China Sea, explicitly in the Taiwan Strait and the intensifying conflicts in the Middle East, add even more pressure (Aljazeera 2024) (Deutsche Welle 2024).

Figure 3 shows a snapshot of key figures, development trends and players in the Chinese and Western Automotive Industry.

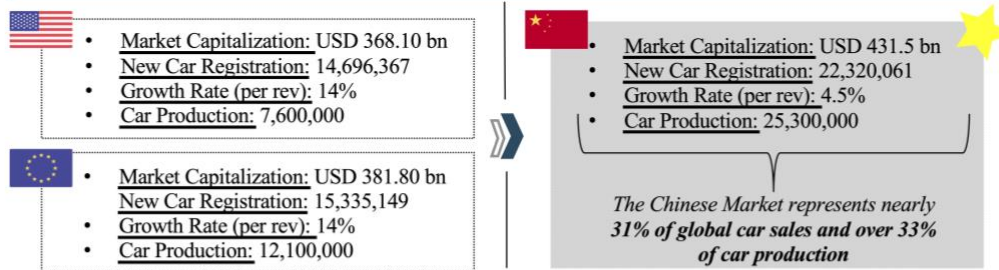
China's Influence on the Western Automotive Industry

Executive Summary - Snapshot of key developments

The Global Automotive Industry (in 2023)



Key Players per Region (in 2023)



Key Trends and Companies

Trends in the automotive industry:

Autonomous Driving



Top 10 companies in the automotive industry:

Per Market Cap



Market Share in %

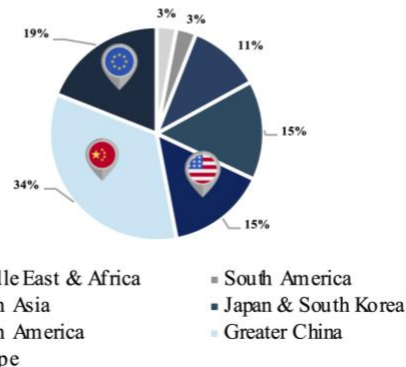


Figure 3. Executive Summary (own illustration)

2.1.4 The Automotive Industry in China

The automotive industry in China has experienced a transformative journey, beginning with its initial steps in the mid-1980s to becoming a global leader in production and EV by 2023. This evolution was catalyzed by various events, from strategic partnerships and policy reforms to an entrenched focus on technology and innovation.

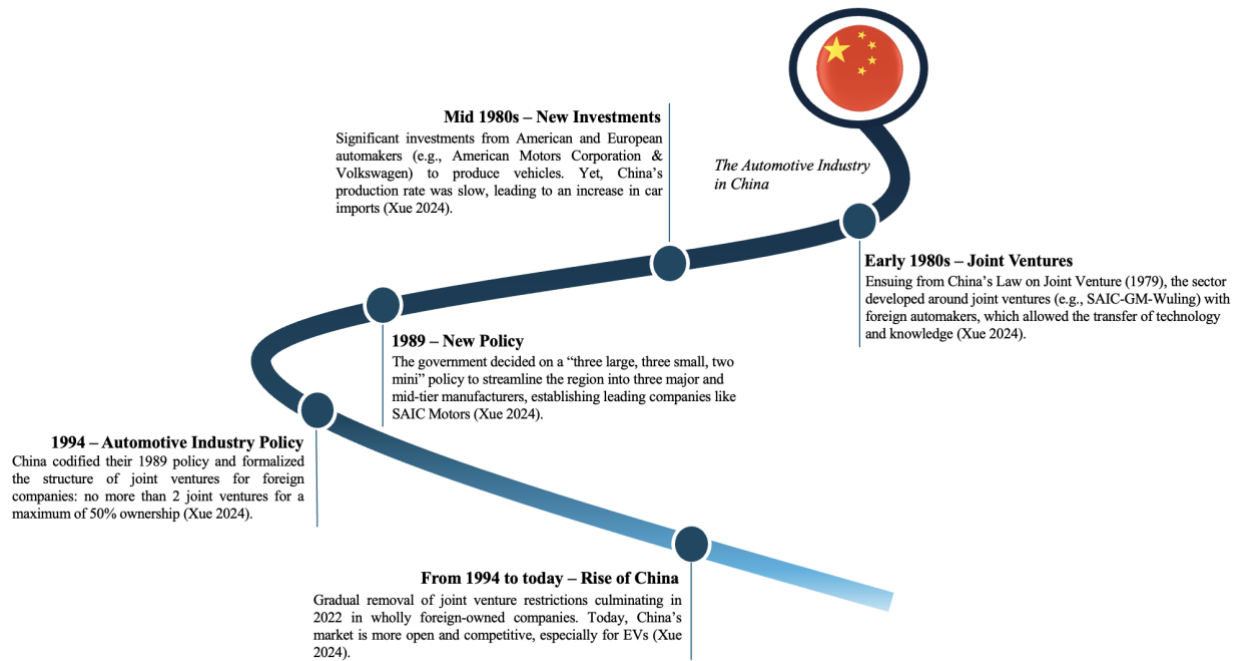


Figure 4. The Rise of the Automotive Industry in China (own illustration)

Today, China's automotive sector has successfully transitioned from a niche "visionary" EV market to mass adoption, significantly driven by the "Made in China 2025" initiative and government subsidies. This support has propelled China to dominate the EV market, with sales amounting to a staggering 63.6% of global share in 2022 (Xue 2024). China's global ascendancy stands as a testament to its adaptability, foresight, and commitment to innovation.

2.1.5 Key Trends and China's Role in the Industry Today

The automotive industry is currently experiencing significant changes in the four areas of electrification, autonomous driving, connectivity, and shared mobility (Roland Berger 2024; Heineke, Kampshoff and Möller 2024). These changes are expected to shape the future of the automotive sector and lead to an unprecedented transformation with far-reaching effects on the industry and its users (Kuhnert, Stürmer and Koster 2018). While these four trends are collectively reshaping the automotive landscape, this thesis focuses specifically on the first three - electrification, autonomous driving, and connectivity - due to their rapid development and significant impact in the context of the Chinese automotive industry's progress.

Electrification

First, the shift from internal combustion engines (ICE) towards electric powertrains is considered one of the most significant trends in the industry at the moment. Estimates indicate that half of the cars sold in the US by 2030 will be electric and global EV sales will increase by 12.8% annually from 2022 to 2034 (KPMG 2023). This development is a result of increasingly stringent fleet emission targets imposed on car manufacturers on the one hand and falling battery costs, high sales promotions, and growing consumer interest in electric cars on the other hand (Roland Berger 2024). Many traditional car manufacturers are currently planning to become exclusively electric in the foreseeable future and are investing huge amounts of money in realizing their strategies (Voigt 2023). However, they are facing new competitors in this market, many of them coming from China. Having recognized the potential of this technology early on, the country has invested huge resources in building a competitive EV ecosystem and now dominates the EV market on a global scale (Allianz Research 2023). China is also expected to capture 20% of the European EV market by 2027, the home of several leading global car manufacturers. This is mainly due to lower prices than competitors, leading battery technologies and increasing popularity of Chinese brands on the European continent (Singh 2024; Transportenvironment 2024). These strategic investments and the country's growing influence on the market make China a central player that is likely to determine the future dynamics of the global automotive industry.

Autonomous Driving

“Autonomous driving will disrupt people’s usual mobility patterns and choices” (Deichmann, et al. 2023). What was considered utterly unrealistic not so long ago has, with the help of artificial intelligence, machine learning and deep neural networks, enabled the development of autonomous vehicles that do not require human intervention even in complex traffic situations (Kuhnert, Stürmer and Koster 2018). While many companies have made important advances in

technology, there have also been some setbacks such as accidents with self-driving cars that have led to discontinuation of pilots. Although the trend is still of significant importance, it is likely that development timescales will be pushed back, especially for highly complex applications such as driving in urban environments (Heineke, Kampshoff and Möller 2024). China is also becoming increasingly important in this area. Although the country only started developing self-driving vehicles five years later than the US, in 2013, experts believe that China has now caught up (Financial Times 2024). In addition, Chinese customers are also more positive about autonomous driving than Western consumers, are enthusiastic about autonomous features and are more willing to pay for them leading to high interest in buying advanced autonomous pilot vehicles (Deichmann, et al. 2023). Together with a complete industrial chain and active regulatory support, these factors indicate that China possesses several prerequisites for a successful future in the autonomous driving market (Heineke, Kampshoff and Möller 2024).

Connectivity

Cars with built-in navigation systems that are connected to an external GPS have been around for many years, but this has been only a preview of what is to come. Vehicles today are not only able to communicate with other systems outside the car, e.g., with the road infrastructure, other vehicles, or a data center, but also play an important role in the advancement of IoT (Internet of Things) and autonomous driving (Phelan 2023). Furthermore, connected cars are not only said to be safer, better in fuel efficiency and therefore more environmentally friendly, but also able to reduce traffic jams in cities due to their capability of navigating past heavily frequented routes. In addition, connected car technology enables better diagnostics, maintenance, and fleet management of vehicles, making shared mobility solutions such as carpooling more efficient (Placek 2023).

Connected car technology is inseparable from automotive electrification and autonomous

driving and estimates indicate that there will be over 400 million connected cars in operation by 2025. Especially China is on the forefront of this development where about 90% of users report to use these features at least occasionally (Placek 2023). Moreover, the country's specific characteristics such as a still growing domestic market, advantages in information and communication technology (ICT), data processing and platform services and support from the Chinese government contributes to this development (Zhao 2019).

2.2 Comparative Analysis of China and the West

The subsequent section of the theoretical background delves into the primary distinctions between China and its Western counterparts regarding culture, behavior, and political landscape.

Western consumers prioritize personal preferences, reflecting their individualistic lifestyle and behavior. This individualistic approach goes beyond simple preference prioritization; it encompasses a customer-centric approach guided by intrinsic values such as quality and function in all strategies (Mooij and Hofstede 2011). Conversely, Chinese consumers often base their purchasing behavior on extrinsic attributes and prestige, a strict departure from the Western emphasis on individualism. This divergence is rooted in the general cultural dichotomy of collectivism and individualism, with Chinese consumers' lifestyles and behavior differing significantly within their country. For instance, civilians located in Southern and Eastern China are quicker to adopt new products and are more conscious consumers compared to other regions (Zhang, Van Doorn and Leeflang 2012). This difference underscores the importance of comprehending cultural nuances that influence consumer and purchase behavior (Szmigin and Piacentini 2018).

However, not only Western and Chinese consumers differ considerably, but also the working culture when it comes to decisions. In Western companies, experts carefully craft their strategies and implementations several months in advance. Early, they consult with agencies

and consultancies. On the contrary, Chinese companies' decision-making process is much faster. Instead of spending months carefully planning measures, they use Guanxi and work directly with major partners or brands without any middleman. It only takes a few weeks from conception to negotiation to implementation. This rapid implementation is because companies must be dynamic in this fast-growing economy (K. A. Whitler 2019a).

As aforementioned, there's a fundamental difference in approach. Western companies prioritize size and efficiency, characterized by a profit-centric mentality in direct conflict with risk aversion and fast dynamics. Conversely, Chinese marketers concentrate on speed and growth, embodying a revenue-centric mentality, that prioritizes speed over control and embraces a higher tolerance for risk-taking (Morrison 2019).

In addition, the political landscape of the automotive sector also reveals one significant difference between China and the West. In China, the government exerts a strong influence on the industry through direct ownership of state-owned enterprises (SOEs), regulations, and policies, thereby guiding the strategic goals of the sector such as the adoption of EVs (Xue, Wei and Greeven 2024). In contrast, the Western automotive market is predominantly private and market-driven, with governments influencing the industry by focusing on country regulations, competition, environmental concerns, and occasional financial support during crises, rather than full ownership (Wong 2009).

3 Methodology

3.1 Research Methods

3.1.1 Approach to Research

In research, methodology serves as the blueprint that offers a clear and structured pathway for conducting investigations, allowing for data collection, interpretation, and analysis (OxbridgeEssay 2023). In the introduction we provided the general research topic, identifying four individual research questions. With respect to the nature of the research questions, the most suitable approach to methodology should be a mixed method including qualitative and quantitative research.

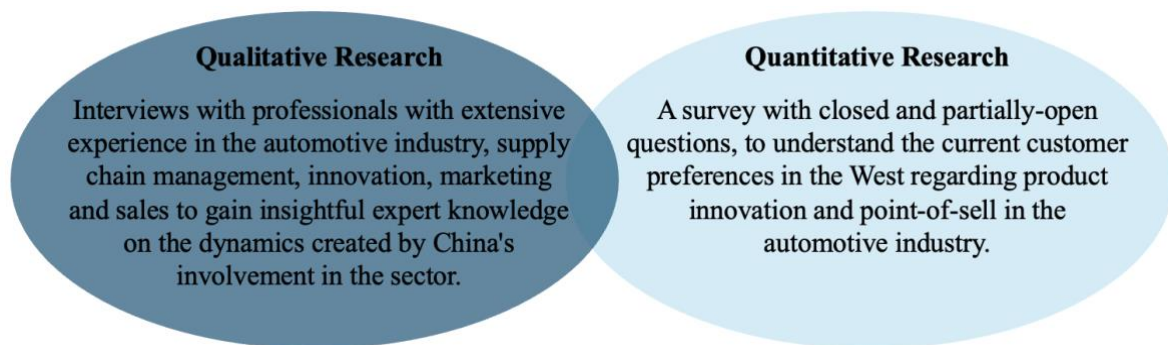


Figure 5. Mixed Research Method used to obtain knowledge (own illustration)

Mixed methods research utilizes the potential of both, qualitative and quantitative research allowing researchers to increase their understanding of the respective field of study (Harper 2022).

Qualitative research is best known to be exploratory research focused on gaining deep insights about a phenomenon (OxbridgeEssay 2023). Contrary to quantitative methods, it is a flexible approach, ideal to uncover nuanced insights, where the aim is to understand the underlying motivations and meanings behind certain actions, allowing us to draw recommendations for broader strategic measures (OxbridgeEssay 2023). The intention of this research is to investigate and analyze the trends in the Chinese automotive industry that drive the global automotive sector. Henceforth, it can be concluded that the study relies on a systematic and

empirical approach, where the use of qualitative research methods is particularly suitable.

However, the data collection and analysis process in qualitative research can be extremely time-consuming and resource-intensive (Bryman 2016). There is also a higher potential for researcher bias, as qualitative analysis often involves interpretative methods, which can be influenced by the researcher's personal biases and preconceptions (Maxwell 2012). Additionally, the findings from qualitative research are generally not generalizable to larger populations because they are typically derived from smaller, non-random samples, which limits their broader applicability (Merriam 2009). Henceforth, the findings can be used to make generalized recommendations, but their applicability cannot be certified. In contrast to this, in quantitative research, the researcher generalizes, allowing for explanations, predictions and understandings. Moreover, quantitative research maintains an objective and a distance view when interacting with participants, as personal involvement is part of qualitative research (Smith 2023). In this research, the intention of the survey is to assess consumer preferences regarding the assessment of technological development in vehicles and distribution channels.

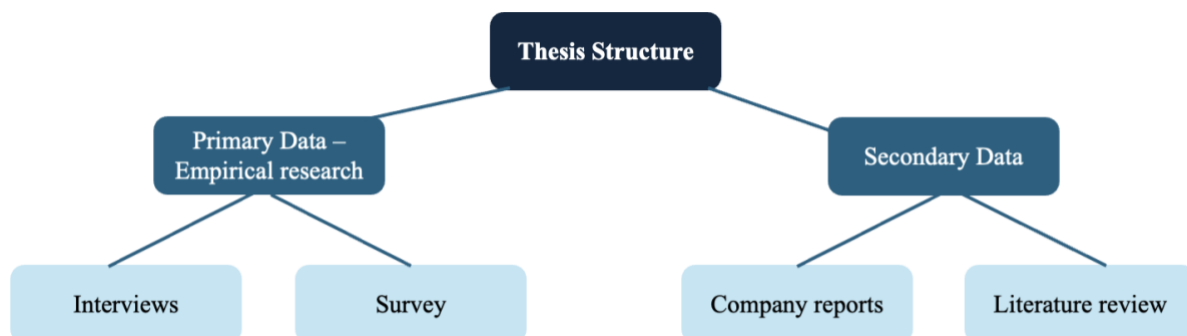


Figure 6. Research Structure (own illustration)

3.1.2 Research Paradigm: Epistemology and Ontology

The research paradigm concerns describing how researchers perceive the world; epistemology studies the nature of knowledge, while ontology focuses on the nature of social entities.

Adopting the interpretive research paradigm is suitable in this research as it allows for a deep understanding of the complex and subjective realities within China's influence on the

automotive industry. Interpretivism focuses on understanding phenomena through the meanings that people assign to them, which is essential when dealing with varied perspectives in international business environments (Scotland 2012).

Epistemologically, interpretivism holds that knowledge is subjective and constructed through social interactions. This paradigm asserts that understanding the nuances of China's influence on the automotive industry requires insight into the perceptions and interpretations of stakeholders within this sector (Saunders, Lewis and Thornhill 2012). Therefore, this research will focus on the subjective interpretations of involved parties, collected through methods such

CONCEPTS	INTERPRETIVISM
Ontology	Socially constructed, subjective, may change, multiple
Epistemology	Subjective meanings and social phenomena. Focus upon the details of situations, on reality, subjective meanings motivating actions
Axiology	Research is value bound, the researcher is part of what is being researched, cannot be separated and so he will be subjective.
Data Collection Techniques	Small samples, in-depth investigations, qualitative.

Table 1. Comparison of the Research Philosophies (Saunders et al., 2009)

as interviews, and a survey. Ontologically, interpretivism posits that reality is not a fixed element but is continuously constructed by human beings. In the context of this study, this means acknowledging that China's influence is perceived differently by different global stakeholders, and these perceptions affect the automotive industry in various ways (Weber 2004). The research will explore these multiple realities by engaging with diverse stakeholders through various perspectives.

3.2 Research Design

To effectively answer the four investigations, the methodological framework previously outlined will serve as the foundation of the study. As part of the data collection process, the research will use a synthesis of primary data, namely interviews and an online survey, and

secondary data such literature review and company reports.

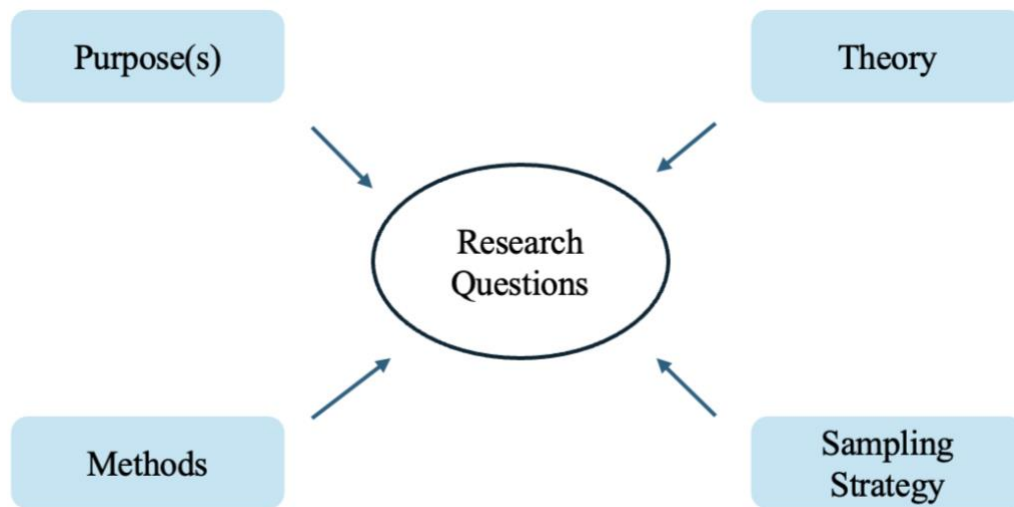


Figure 7. A Framework for Research Design (Robson, 2002)

3.3 Primary Data Collection

Interpretivist research requires researchers to interpret elements of the study, thus interpretivism integrates human interest into the research (Myers 2008). Moreover, interpretivism studies usually centers on understanding the nuances of interpretations and may utilize a variety of methods to capture diverse dimensions of the topic (Littlejohn and Foss 2009). Thereby, given the nature of our research and the need to explore various aspects requiring distinct interpretations, employing an online survey and structured interviews was considered appropriate.

3.3.1 Interview Guide

Semi-structured interviews were conducted with company representatives and industry experts who were carefully selected based on their roles and expertise related to the automotive sector. This method uses a rigorous yet also spontaneous format, utilizing a core set of identical questions for each participant, which provides the advantage of precise comparability and allows for clear, consistent conclusions across different responses. However, it still accommodates some flexibility, enabling us to tailor additional questions based on the specific

expertise and background of the interviewee, ensuring that the inquiry remains relevant and comprehensive. To engage in detailed discussions and remain efficient, interviews were held via email. Although they do not facilitate a free-flowing conversation, such interviews proved to be more efficient for our study. This method allowed us to simultaneously reach multiple targets, accommodating the multi-faceted nature of our research. This approach was particularly advantageous given the diverse aspects and geographic spread of the subjects involved.

Additionally, a critical factor for the successful execution of our chosen research method was the careful and informed selection of respondents. To ensure the validity of our interview results, we meticulously identified, screened, and selected experts from the relevant sectors using three sampling criteria:

1. First, the individuals targeted are working directly in the automotive industry. Although the research intersects with broader areas like technology and mobility services, we specifically chose to engage only those actively part of the automotive sector. This decision helped us keep the focus strictly on our main topic and avoid straying into less relevant areas.
2. Next, in selecting participants, the research focused on roles directly impacted by China's influence in the automotive industry, including product development (engineers and designers), supply chain management (logistics and procurement managers), marketing (brand managers), and sales (sales managers). These roles offer vital insights into how China's strategies affect everything from product creation to market competition, ensuring our study covers the most relevant areas of the industry.
3. Finally, participants selected for this study were required to have direct experience with or insights into China's influence within their specific areas of the automotive industry. This criterion was essential to ensure that the data collected would reflect first-hand knowledge of China's strategies, impacts, and practices as observed in the field.

Ultimately, we obtained various insightful expert knowledge through nine written interviews

with professionals with in-depth experience in the automotive industry, supply chain, innovation, sales, and marketing.

Interviewee I	Innovation Manager at BMW Group
Interviewee II	Global Process Expert Supply Chain at SEG Automotive
Interviewee III	Head of Sales at a German Dealership
Interviewee IV	Procurement Manager at Audi
Interviewee V	Director of Quality Sales at Porsche
Interviewee VI	Former CEO of BYD Germany
Interviewee VII	Former CEO and CFO of Pirelli Germany
Interviewee VIII	Former CMO at VW Group
Interviewee IX	Senior Marketing Manager at globally operating consultancy
Interviewee X	Marketing Manager at Renault
Interviewee XI	Product Development Manager at Emil Frey Group Switzerland

Figure 8. Overview of interviews' profile (own illustrations). (Source: Interviews)

It was imperative that these participants possessed not only consequential theoretical knowledge but also substantial practical experience in the field. This approach guaranteed that a robust and comprehensive body of knowledge was accessible for our study.

3.3.2 Survey Guide

Ensuing from the rising popularity and effectiveness of online surveys, this study employed an online survey as a secondary source of primary data collection to gather nuanced insights into China's influence on the global automotive industry, particularly focusing on sales and product development. This method is in line with the growing trend for using digital platforms for research, which offer alluring advantages in terms of reach, costs, and efficiency (Bryman and Bell 2015).

The online survey was conducted using Microsoft Forms, a platform known for its user-friendly interface and robust design options, allowing for the creation of clear and professional-looking surveys. This choice ensured a standardized approach to data collection and enhanced the

overall appearance and organization of the survey process. Additionally, the survey utilized pre-defined list of answers for all questions to ensure consistency in the responses. This helped to streamline the analysis process by reducing the variability in responses, which can be particularly challenging in qualitative research. This method also facilitated the gathering of more targeted insights into specific areas like sales and product development, enabling a more efficient synthesis of the complex data collected.

In contrast to targeted sampling strategies, this study's online survey was shared broadly to diverse individuals, employing a more inclusive approach to participant selection. The survey did not rely on purposive sampling techniques, as the questions were designed to capture a wide range of opinions rather than specific expertise in the automotive sector. This approach allowed the survey to capture perspectives from a variety of backgrounds and ensured that the research did not restrict its focus to any geographic area. By allowing individuals from different global regions to participate, the survey could gather a broader understanding of the perceived influence of China across various aspects of the global automotive industry. This method enhances the generalizability of the findings, reduces the biases found in qualitative studies, and provides a more comprehensive view of global perceptions and attitudes.

3.3.3 Method of Analysis

To analyze the primary data collected, this study employs both content analysis and conceptual analysis approaches. Content analysis is a research tool used to highlight the presence of specific words, themes, or concepts within given qualitative data (i.e., written interviews). To analyze the text under this approach, the data must be coded or broken down, then be further categorized to summarize data further. Conversely, conceptual analysis involves the examination of a chosen concept by quantifying and counting its presence (i.e. survey answers). The main goal is to examine the occurrence of selected responses in the data (Columbia 2023). The analysis of the survey answers involved a detailed breakdown of responses by question

number. Each question's responses were meticulously cataloged and quantitatively analyzed to determine the frequency of each type of answer provided by respondents. This process enabled the identification of the most prevalent answers for each question, highlighting dominant trends and commonalities among the participants' viewpoints.

This distinction in analytical approaches ensured that each set of data was examined in a manner that best suited its format and depth. Conceptual analysis provided a broad overview of the survey data, identifying overarching themes and quantifiable insights. In contrast, content analysis brought depth to the interview data, uncovering the intricate views and strategic insights of industry experts, thus enriching the interpretive nature of the study.

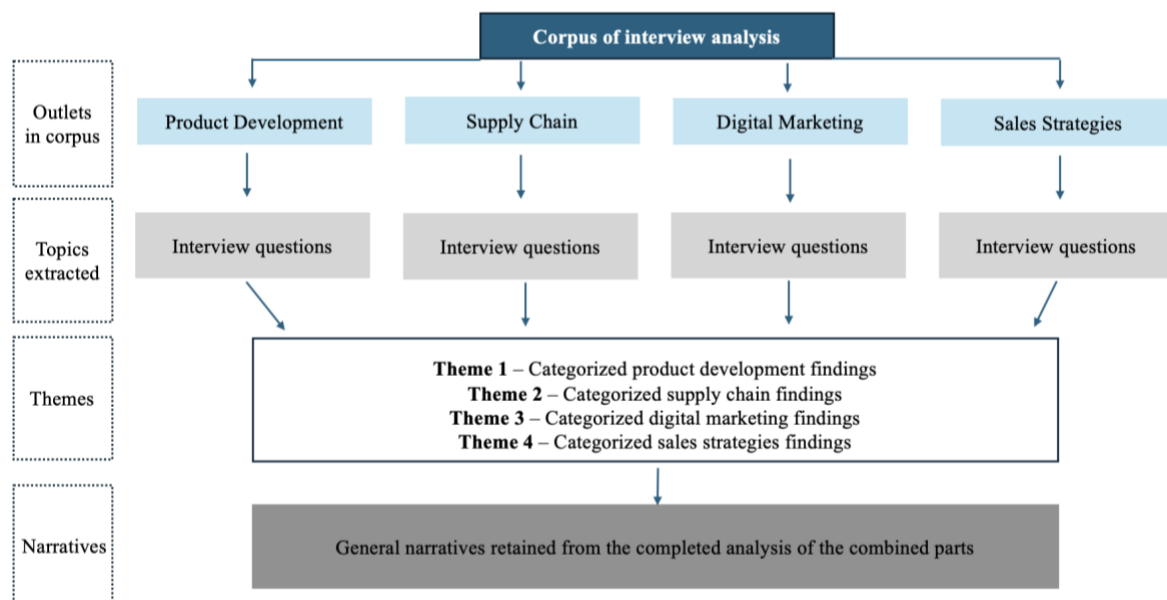


Figure 9. Content analysis flow chart (own construction)

3.4 Secondary Data Collection

In this research, secondary data collection forms a foundational component of the methodology, offering a robust way for gaining insights without the extensive time and resources associated with primary data gathering. This methodological approach involves a detailed systematic review and analysis of existing data sources to extract pertinent information that aligns with our research objectives. By employing secondary data, we not only bolster the efficiency of our

research process but also enhance the robustness of our study through the ability to cross-validate findings derived from primary data sources (Illinois Tech 2023). Integrating a diverse array of secondary sources, including academic journals and industry reports, enables us to construct a nuanced understanding of the subject matter. This approach ensures that our investigation is comprehensive, well-informed, and firmly anchored in previously established empirical evidence, providing a solid foundation for our analysis and conclusions.

3.4.1 Online Literature Review

The literature review of this study synthesizes the existing scholarly discourse on China's extensive role within the global automotive industry, particularly focusing on the four trends mentioned in the introduction. Adopting an integrative literature review methodology, this chapter builds a combined view that intertwines the various aspects of the industry studied. Key databases such as Research Gate, JSTOR, Consultancy firm reports, and Google Scholar were instrumental in gathering relevant literature.

For a more focused examination of China's influence on defined sectors of the automotive industry, a systematic literature review was conducted, which advocates for rigorous methodological frameworks to enhance the reliability of literature analysis (Tranfield, et al. 2003). This review specifically targeted peer-reviewed articles and consultancy reports, with high citation impact to ensure the inclusion of significant research findings (Easterby-Smith, et al. 2018). Initial searches were refined using specific keywords such as “China automotive expansion”, “global supply chain integration”, and “key marketing trends in China”, leading to a curated selection of articles that shed light on the transformative role of Chinese industry practices. To further narrow the number of articles, the search focused on the four individual trends to which the automotive sector belongs. Therefore, for each sub-investigation, keywords such as “supply chain reconfiguration”, “digital marketing trends”, “electrification”, and “direct sales” were added. Finally, the tool “Any Time” on Google was used to filter the search request

to data starting in 2018.

3.4.2 Company Reports

The company reports play a critical role, providing contemporary insights and firsthand data on industry player's strategic initiatives within China. These reports, sourced from leading Chinese automotive companies, as well as consultancies offer valuable information on market trends, policy compliance, and technological advancements. By analyzing these documents, the study gains a practical perspective on the operational impacts and strategic directions being pursued by key market players. This approach not only enriches the empirical data but also aligns theoretical discussions with real-world practices, ensuring a holistic view of China's expanding influence across various automotive sectors.

3.5 Research Quality and Accuracy – Ethical Research

Ensuring research is of high quality and trustworthy is of utmost importance in academia. A solid research project requires a well-structured methodology, transparency in data collection processes, and meticulous analysis techniques (Bryman 2016). Adopting an interpretivist method requires a thorough understanding of complex phenomena by prioritizing context and reflexivity (Wong 2012). Furthermore, the use of mixed methods of data analysis, such as combining content and conceptual approaches, enhances the comprehensiveness and depth of the primary findings (Guest and Fleming 2015). Ethical considerations, including confidentiality, consent, and respect of participants, are primordial to the research process (Dunn and Jeste 2001). Additionally, integrity in secondary data collection involves the critical evaluation of sources for reliability and relevance (Bryman 2016). This study aims to provide high-quality research that contributes to understanding China's global influence in the automotive industry by adhering to these principles.

4 Findings and Data Analysis

4.1 Findings Interviews

The results of the analysis of the ten interviews were summarised in Table 2 and clustered thematically (Appendix 2).

Themes	
Chinese Market	• “Green Field”: Automotive Industry was built from scratch • Technology Driven • Integrated Value Chain
Digitalization	• Online vs. Offline Marketing and Sales • Consumer Preferences • Personalization
Industry Conditions	• Entrepreneurial thinking • Governmental subsidies • Speed beats control
New Electric Vehicles	• Disruption • China as the Main Player • Substantially different to Combustion
Technological Development	• Autonomous Driving • Electrification • Connectivity
Western Market	• Traditional Market in the Automotive Industry • Established Players • Reliant on China

Table 2. Themes in alphabetical order (own illustration)

4.2 Results Survey

The relevant sample consists of 113 participants from Western European and North American countries. Additionally, most respondents are young adults (18-30 years), followed by middle-aged adults (46-65 years) and there are no participants under 18 or over 66. This ensures that the relevant sample only consists of persons legally capable of purchasing a car.

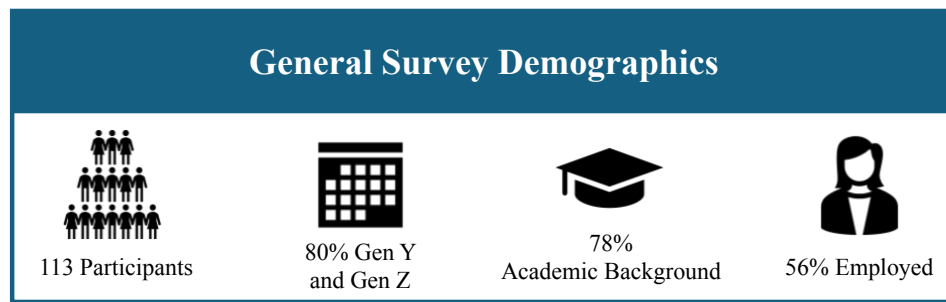


Figure 10. Survey Demographics (own illustration) Source: Survey

The survey is intended to show the acceptance and perception of Chinese automotive technology among Western customers and draws a differentiated picture. In general, most respondents believe that features such as autonomous driving and advanced connectivity will increase the likelihood of buying a car and expect technological advances to play an important role in future car purchases. These results are consistent with the findings from the literature review. However, perceptions of the quality and reliability of Chinese automotive technology vary widely. For most respondents, the knowledge that a vehicle is equipped with cutting-edge technology from China has a negative influence on the purchase decision. In addition, confidence in technologies such as autonomous driving and vehicle connectivity from Chinese manufacturers is significantly lower for most participants than for those from Europe or the US.

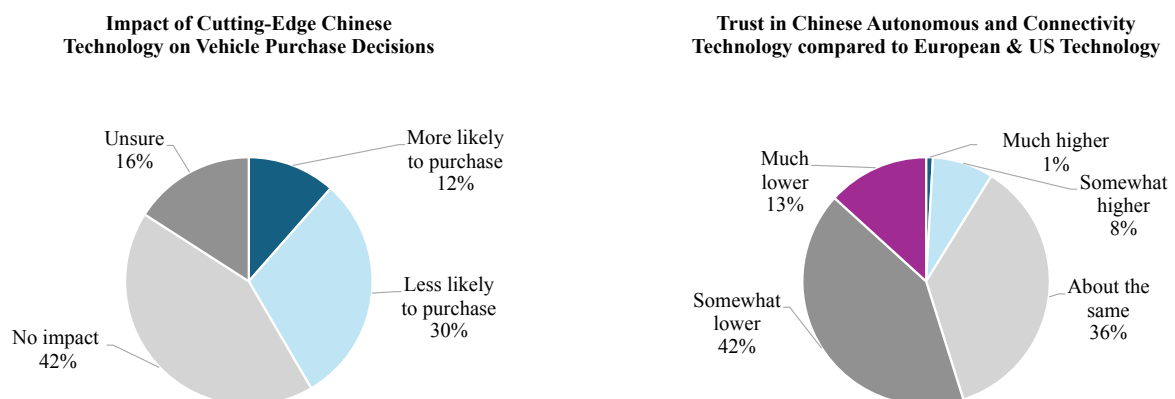


Figure 11. Selected survey results (own illustration)

Regarding the sales journey, and what is important to consumers the survey indicates a strong preference for the traditional car buying processes, including the importance dealerships when

it comes to price negotiation and in-person interactions, i.e., for testing and exploring vehicles. In contrast to this, there's an emerging openness to online car purchases driven by the potential for lower prices, although concerns about the inability to physically inspect cars beforehand persist. Moreover, the preference for traditional dealership support for after-sales services indicates a continued value placed on personal service and reliability post-purchase, essential for maintaining customer trust and loyalty.

This paints an ambivalent picture that shows changes in consumer behavior. A shift in needs and preferences can be observed as Western customers become interested in online sales of cars, whilst still preferring an offline point of sale.

5 Supply Chain Dynamics

5.1 Automotive Supply Chains

Increasing market disruptions, product diversity, and technological advancements influence global automotive players to compete through the myriad pathways of supply chain to survive and succeed in the volatile automobile industrial environment.

Agile supply chain management has shown to be the cornerstone of a company's competitive advantage and the critical success factor of the whole automotive sector. Today, a good supply chain strategy not only yields financial gains but should also surpass outdated approaches that once aimed for profits and are now obsolete (McGrath 2024). Invesp found that most companies excelling in their supply chain management experience revenue growth surpassing the industry average (Anderson 2023). Thereby, effective design and continuous evaluation of supply chains are crucial for automotive companies to adapt and prosper in a volatile industry.

This investigation seeks to dissect the critical elements that underscore China's success in automotive supply chain, looking at its dedication towards innovation, coupled with extensive manufacturing power, and responsiveness to disruptions, and propose how Western companies could draw potential lessons to reconfigure and enhance their own supply chain efficiencies.

5.1.1 Multi-tier Structure

Before further analyzing China's supply chain dynamics, we illustrate the multi-tier structure of automotive supply chains to enable the classification of the key participants (figure 14). Starting in Tier 0, OEMs, or Original Equipment Manufacturers are companies that design, engineer, source, and manufacture vehicles and automotive parts (Investopedia 2024). They often have global reach, driving technological innovation in the industry (Schliebener, Jan and Nickel 2021). Next, first tiers oversee manufacturing and supplying modules or systems directly to the OEM (Tian 2011). They take on the role of a quality buffer, enhancer of productivity, system developer, purchaser, designer, or problem solver to relieve the OEM (Schliebener, Jan

and Nickel 2021). Finally, second tiers simply produce more basic individual components that are included in a system manufactured by a first tier, and third tiers mostly supply single parts and raw materials (Tian 2011).

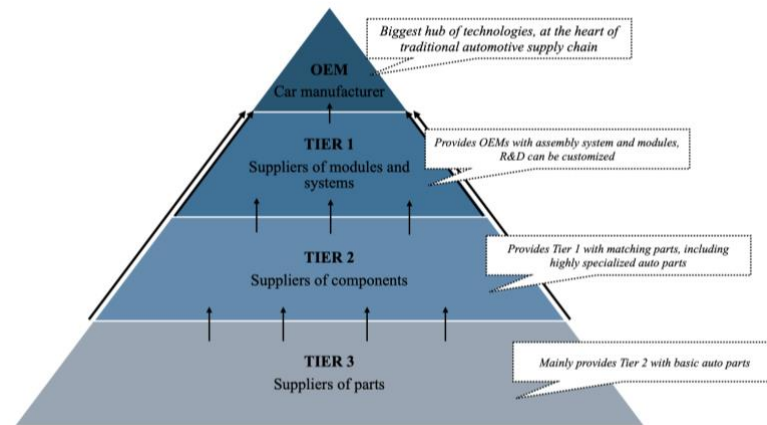


Figure 12. The Automotive Supply Chain Tiers: A Collaborative Effort

5.1.2 Industry Specific Characteristics

According to AR Racking (2024), supply chain can be divided in four stages: supply, manufacture, storage, and delivery. For each stage, five industry-specific characteristics prevail (i) to deliver products on time, (ii) in the right quantity and (iii) quality, (iv) at the most competitive cost, (v) from start to finish. Key characteristics necessary for achieving this include balance, efficiency, coordination, flexibility, and transparency. These ensure that each phase is well-planned, costs are minimized, and operations are synchronized (AR Racking 2024).

Nevertheless, given the impact of recent supply chain upheaval following the pandemic, auto industry experts argue that reconfiguration has become an essential characteristic of supply chain in the advent of another disruption (Saad 2022).

5.2 Supply Chain Management

The term “Supply Chain Management” (SCM), popularized by logistician and business consultant Keith Oliver in the 1980s, is described as the process to derive benefits from planning, implementing, and integrating business functions to satisfy customer requirements

(Kransdorff 1982).

Historically, supply chain management in the automotive industry refers to the coordination of various processes and global networks involved in the production and distribution of vehicles, from raw materials suppliers to distribution centers for final delivery to customers (Infor 2023). SCM aims to boost collaboration and communication, optimize inventory, and enhance operational efficiency, driving competition through the interplay of supply chain efficiency and system capabilities (Isbell 2023). Thus, it is crucial for every automotive enterprise to establish a robust and well-coordinated supply chain system to promote competitive advantages. Such a system is essential for ensuring the healthy development and smooth operation of each enterprise within the sector.

Having established a foundational understanding of SCM and its pivotal role in the general landscape, it is imperative to turn our focus towards a more specific and transformative phenomenon within the automotive industry. This brings us to the concept of Supply Chain Reconfiguration (SCR) – a critical component of SCM that automotive companies are increasingly leveraging to navigate amidst the disruptions.

5.3 Supply Chain Reconfiguration of the Automotive Industry

5.3.1 Concept of Supply Chain Reconfiguration

The advent of the Covid-19 pandemic has significantly transformed the automotive industry, exposing vulnerabilities in global supply chains, and prompting automotive companies to reassess their strategies and operations. The sudden halt in production, closure of factories, disruptions in logistics, and the “supply cut-off” of chips, highlighted the need for greater resilience and agility within supply chains. Considering these challenges, SCR has emerged as a crucial strategy for automotive manufacturers to adapt, survive, and thrive in an increasingly complex business environment (Chenneveau, Cheung, Le Deu, & Zhan 2022). SCR involves the strategic realignment and restructuring of supply chain networks, processes, and

relationships to enhance resilience, mitigate risks, and improve efficiency within the automotive sector (Christopher, Martin and Peck 2004). Central to this approach is the adoption of digital technologies - like big data and AI - to improve operations and decision-making, diversification of supply sources to reduce dependency risks, and strengthening partnerships for better risk management and communication (McKinsey & Company 2022; Deloitte 2021; Wang, Zhou, and Zhao 2023). Now that we've outlined the concept of SCR, next we will explore how these disruptions have specifically shaped China's supply chain landscape, setting the stage for a detailed analysis of SCR's impact.

5.3.2 Global Disruptions for Westerners and China

The pandemic led to widespread disruptions in key manufacturing hubs such as Shanghai and Guangzhou, exacerbating challenges such as chip shortages and logistic bottlenecks, slowing production as the demand for electric vehicles surged (Fitch 2023). Western automakers, heavily reliant on Asian-sourced parts, faced severe challenges when the supply of critical items like semiconductors were dramatically interrupted, causing extensive production delays and financial losses (Henry 2023; Interview III). The ensuing disparity in recovery rates highlights a critical lesson: the need for supply chain reconfiguration, not just as a reactionary tactic but as a fundamental component of strategic resilience. For the West, persistent challenges such as reduced shipping availability and longer transit times, have prevented a return to pre-Covid sales volumes due to global supply dependencies and a lack of flexibility (Interviews II and III). In contrast, China's automotive sector quickly recovered, supported by effective government policies and strategic supply chain reconfigurations, outpacing Western recovery rates (Wang, Jeff and Haex 2020; Interview IV). For Western automakers to achieve similar agility, a detailed analysis of China's supply chain adaptations is essential. Understanding these distinctive strategies will further shed light on effective measures that Western companies can implement to enhance their responsiveness and resilience against future disruptions.

5.4 The Chinese Automotive Supply Chain Landscape

5.4.1 Manufacturers

The Chinese automobile manufacturing industry has been undergoing significant transformations, driven by robust growth in production and revenue. During the first 11 months of 2023, the total industrial added value of China's automobile sector rose by 12.3% year-on-year, 7.6% points higher than that of the overall manufacturing industry (Xinhua 2024). This growth underscores the dynamic and expanding nature of the automobile manufacturing sector in China.

Today, the Chinese automobile manufacturing industry can be categorized into the following types: state-owned manufacturers, privately owned manufacturers, and Sino-foreign joint ventures (Meemi 2023). State-owned enterprises (SOEs), such as SAIC Motor Corporation, FAW Group, and Dongfeng Motor Corporation, traditionally dominated the industry. However, with the rise of the EV industry, private firms such as BYD and Geely are becoming major players. Additionally, since China's National Development and Reform Commission in 2018, foreign manufacturers' operations have facilitated, allowing them to produce cars without forming joint ventures with local partners (Meemi 2023). Within this varied landscape, the strategic structuring of China's automobile manufacturing industry – augmented by regular government intervention such as the “Made in China 2025” strategy, which aims to transform China's manufacturing industry from labor-intensive to technology-intensive in 10 years - have been critical in elevating the nation to a leading position in the global EV market (Xiaoying 2023). Indeed, a pivotal element of China's manufacturing strength, particularly in the automotive sector, is the strategic formation of industrial clusters. These clusters are concentrated regions where automobile manufacturers, suppliers, component providers, and R&D institutions co-locate to capitalize on shared infrastructure, labor markets and “benefit from enhanced agility, knowledge sharing, and resilience” (Interview III). This proximity

fosters competition, which in return provides significant incentives for firms to innovate and have a quicker response time and better alignment with market needs, enhancing supply chain efficiencies, contributing significantly to the competitive dominance of China's automotive industry (Ferras Hernandez, Nylund 2019; Interview II). The clusters are strategically located in regions with sturdy infrastructure, access to ports for export, and benefit from governmental support. The Pearl River Delta, Yangtze River Delta, and Beijing-Tianjin-Hebei are prime examples, housing giants like SAIC Motor in Shanghai, BYD in Shenzhen, and numerous suppliers and tech companies focusing on EVs and smart car technologies (Figure 15).

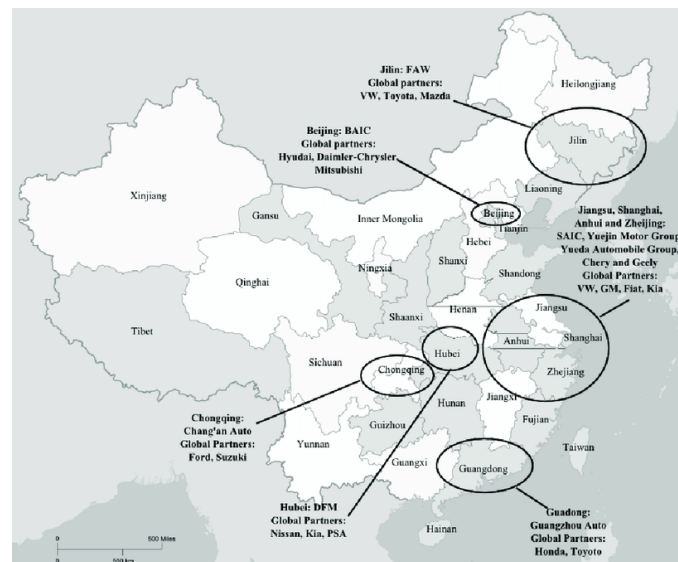


Figure 13. Automotive Manufacturing Clusters in China (Tuijl 2023)

Yet, the concept of industrial clusters, while not unique to China, is distinguished by its scale and significant government involvement (Interview III and IV). For example, Germany's automotive clusters in regions like Bavaria, Baden-Württemberg, and Lower Saxony, have evolved naturally over decades, supported by a strong involvement in engineering and manufacturing, but with less direct government intervention compared to China (Foxy 2023). In the United States, the automotive industry was traditionally concentrated in the Midwest, particularly around Detroit, Michigan (World History 2017). Unlike China's more recent and government-driven approach to developing clusters, Detroit's dominance was not the product

of deliberate government strategy but emerged historically, driven by the entrepreneurial spirit of early automakers.

Industrial clustering has significantly impacted China's automotive sector, especially in the EV market. By strengthening collaboration among manufacturers, suppliers, and researchers, China has enhanced technological innovation and reduced production costs, establishing itself as a leader in electric and autonomous vehicles (Xiaoying 2023; Interview III; Xinhua 2024). In contrast, Western automotive clusters, despite their rich history of innovation, struggle with the shift towards EVs and autonomous technology (Interview III). While Germany and the United States are progressing towards modern mobility solutions, China's strategic clustering and government support uniquely position it to swiftly adapt to market changes and scale new technologies efficiently (Interview IV).

Finally, embracing SCR, activities such as smart manufacturing – a part of China's "Made in China 2025" plan – has marked China's shift from being a manufacturing hub to a technology leader, enhancing its international competitive edge (ARC Advisory Group 2024). This shift, supported by the clustering of the automotive industry, has not only streamlined its manufacturing processes but has also dramatically accelerated the production capabilities within the sector. By 2023, Chinese manufacturers were producing 1.7 times that of Europe, which ranks second globally, underscoring the effectiveness of its clustered industrial model in achieving unparalleled scale and efficiency in the automotive sector (Figure 16; Zhang 2023).

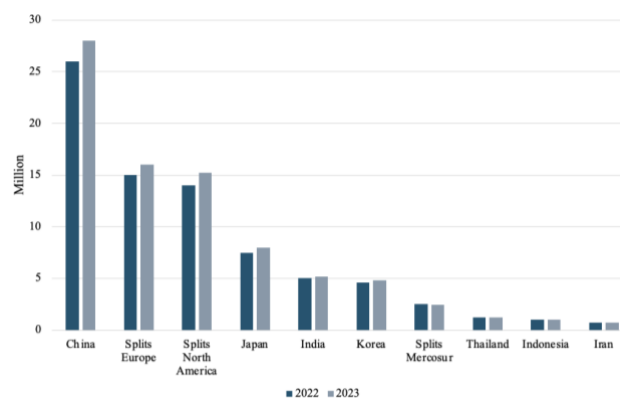


Figure 14. Global Top Ten Regions of EV Production 2022-2023 (Zhang 2023)

Transitioning from the current structure of automotive manufacturing in China, we shift our focus to another critical aspect of the country's automotive industry: Suppliers.

5.4.2 Suppliers

China's manufacturing prowess stands as a pivotal segment of its automotive industry, necessitating a sophisticated network of suppliers to firmly embed itself within global supply chains. This integration is not merely about quantity but also about the quality and strategic positioning that Chinese suppliers have achieved on the global stage. Since recent disruptions, automotive suppliers have had to reconfigure their structures to mitigate threats to revenue and profits, emphasizing the urgency of seizing new growth opportunities through digitalization and powertrain transitions (Mogge, Felix, and Daniel 2023).

As the automotive industry increasingly shifts towards EVs, traditional ICE suppliers recede in significance (Figure 17). In response to this growing trend and similarly to manufacturers, Chinese automotive suppliers have pivoted towards technology, heavily supported by governmental initiatives for the New Energy Vehicle sector (Interview I). This strategic shift has allowed them to control about 50% of the global Advanced Driver Assistance Systems (ADAS) market, secure over 63% of the global EV market share, outpacing American and European competitors, and has also led to higher EBIT margins, highlighting the profitability benefits of leading in advanced automotive technologies.

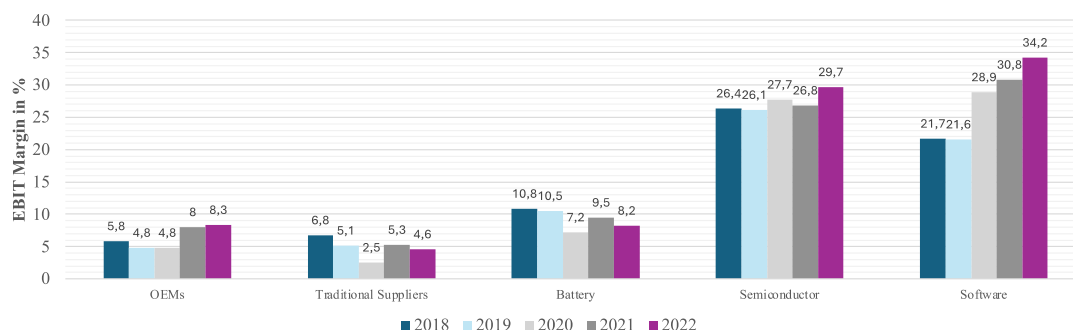


Figure 15. NEV suppliers can achieve higher EBIT margins (Roland Berger 2024)

This dominance not only underscores their indispensable role in providing hardware for

autonomous driving technologies but also highlights the diminishing relevance of traditional ICE products. To illustrate the stark contrast in market dynamics, let's consider the success of Chinese industry leaders like BYD Co Ltd and Harbin Dongan Auto Engine Co Ltd, who were among the top automotive suppliers in China by revenue in 2021. These companies, along with the top seven China-based automotive suppliers, generated impressive revenues totaling \$36,3 bn USD, demonstrating an average growth of 21.3%, which underscores the strong performance of local suppliers in the market (BYD Co Ltd Annual Report 2022). Adding to this achievement, BYD Co Ltd, who has been a standout example of this transition, overtook Tesla in the fourth quarter of 2023 with a growth rate of 73% compared to Tesla's 38%, leading in the NEV market for the first time (Cong, Mingyang, and Xuanmin 2024). This significant growth of BYD highlights the rapid and impactful shift Chinese automotive suppliers are making from traditional ICE products to advanced EV technologies, positioning them at the forefront of the global automotive market while Western suppliers are increasingly marginalized and forced “to re-think their long-term strategy and re-invent themselves” (Interview II).

Furthermore, driven by policies that prioritize local production, China is actively diversifying its sourcing strategy to reduce its dependence on external sources amidst recent global disruptions. This effort is highlighted by significant investments in semiconductor technology, with the goal of fulfilling 70% of its semiconductor needs domestically by 2025. This stands in stark contrast to the situation in the United States, where semiconductor manufacturing capacity is projected to decline at an average annual rate of 2.25% (Mark and Robert 2023; Lewis and Andrew 2019). Meanwhile, Europe, despite ongoing discussions about subsidizing local chip manufacturing since the onset of Covid, has yet to take decisive action, further increasing its dependencies (Interview V).

The rise of Chinese automotive suppliers globally is driven by their advancements in affordability and quality (Interview V). Research shows that Chinese suppliers offer products

that are 20% to 30% cheaper than those from Western companies, due to their efficient and creative operations (Luk, Wang, He, & Ernest 2023). They have also increasingly adopted international quality standards, significantly reducing the quality gap with global competitors (Interview V). The implementation of lean processes, focusing on waste reduction and continuous improvement (kaizen), has improved the reliability and quality of their automotive components, challenging the perception of Chinese products as inferior (Zhang 2015; Interview IV & X).

Finally, the strategic clustering of suppliers alongside manufacturers optimizes processes and fosters an ecosystem for knowledge sharing and technological advancement, enhancing supply chain efficiency and agility. This approach proved crucial during the pandemic, allowing Chinese suppliers to quickly adapt operations and maintain continuity. For instance, BYD Co Ltd rapidly expanded its production to include masks and sanitizers alongside automotive parts, demonstrating adaptability (Reuters 2021).

We now turn our attention to another significant dimension of China's influence in the automotive sector: the development of an extensive international distribution network.

5.4.3 Distribution Networks

“China exported 3.32 million vehicles in 2022, with a year over year growth rate of 57% with battery-electric vehicle exports accounting for more than one-in-four total exports. The pace shows no signs of slowing year-to-date, with January-April 2023 export volume surging by 76% year-over-year, to nearly 1.5 million vehicles” (Tu 2023).

China's rise as a global supply chain hub is a testament to its strategic geographical advantage and innovative distribution strategies, underscored by its “multifaceted distribution network which utilizes ports, railways, and roads” (Interview V). Their vehicle exports span a wide array of global markets, with top vehicle importers including countries such as Russia, the United States, and Mexico (Chen 2023). This extensive reach illustrates China's global distribution

capabilities and strategic positioning in the automotive sector (Figure 18).

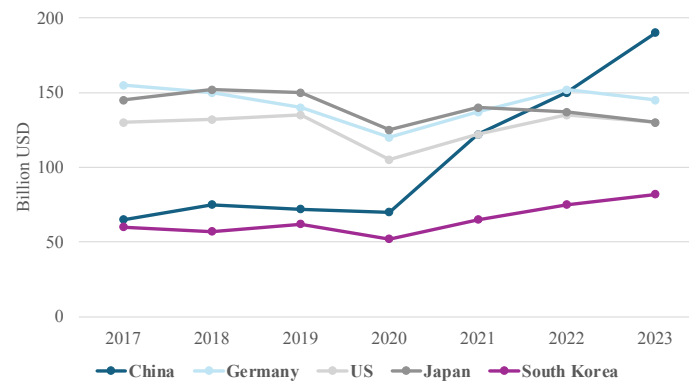


Figure 16. Car and Truck Exports for Select Countries 2017-2023 (Letzing and Sung 2024)

Furthermore, the Belt and Road Initiative (BRI) demonstrates China's aim to reshape global trade, linking over 60 countries across Asia, Europe, and Africa (Feingold 2023). Aligned with SCR principles, the BRI seeks to cut transportation costs and shipping times, enhancing economic ties globally (de Soyre, François, Mulabdic, Murray, Rocha, and Ruta; Feingold 2023). It extends beyond physical infrastructure, incorporating digital trade efforts to form a vast network of trade and digital commerce routes. This strategic approach positions China at the core of a new global trade network, enabling faster and more adaptable distribution channels, crucial for sectors like EVs (Feingold 2023).

Beyond the clear geographical advantage, China also depends on its key logistic hubs to support the spur in distribution. Shanghai, Shenzhen, and Guangzhou are not just logistic nodes; they are sophisticated ecosystems that allow for maritime, aerial, and land transportation with advanced warehousing and inventory management systems (Dimerco 2022; Interview V). These hubs are equipped with specialized equipment and facilities designed to handle the specific requirements of the automotive industry, and particularly those of the EV sector ((Dimerco 2022). For instance, a Shenzhen warehouse is a critical strategic piece for global supply chains. As one of the world's premier manufacturing centers, it offers direct access to the Port of Shenzhen, the world's third largest container port, and three of China's largest cargo airports, while being home to four large free trade zones (FTZs), allowing businesses to defer

customs duty and VAT payments until goods are sold or removed (Dimerco 2022).

Finally, reflecting again the principles of SCR, at the heart of China's distribution network lies a relentless drive for innovation, a trend observed through-out the entire automotive supply chain so far. The operational side of the distribution network in the Chinese automotive industry is increasingly leveraging advanced technologies such as blockchain, Artificial Intelligence (AI), and the Internet of Things (IoT) to enhance efficiency and reduce lead times. Blockchain and IoT technologies allow for real-time tracking of products, detection of defects or high temperatures, and improvement in transportation scheduling (Mourisard 2023). Simultaneously, AI and machine learning algorithms play a crucial role in predicting delivery times, optimizing routes, and enhancing inventory management (Mourisard 2023). These technologies can automate repetitive tasks, improve decision-making through data analysis, and provide real-time monitoring of inventory levels to reduce stock-outs and optimize warehouse operations.

Having gained a more nuanced understanding of China's supply chain landscape, we now transition to identifying the determinants of China's operational excellence along with the singular efforts that have collectively empowered China to establish this excellence.

5.5 Reaching Operational Excellence: Distinctive initiatives to Emerge as Winners

5.5.1 Concept of Operational Excellence

In this constantly changing supply chain business environment, key drivers such as transportation and shipping cost increases, raw materials and labor shortages, or border closures, are few of many that contribute to costly and unpredictable supply chain disruptions (Masao 2022). To maintain competitiveness, it is crucial to excel in your operations, a concept scholars refer to as operational excellence, a critical factor that maintains and improves an organization's competitive advantage (Colotla and Fookes 2024).

Supply chain operational excellence relies on 3 key factors, let's observe how China's

automotive supply chain exemplified these principles (Masao 2022):

1. **Consistent execution of your strategy and processes:** China's automotive industry focuses on “highly automated and more standardized streamlined operations” (Interview V), ensuring that every aspect of the supply chain aligns with overarching business objectives.
2. **Clear measurement and monitoring of progress:** The adoption of advanced technologies like IoT and Blockchain alongside China's value chain allows for meticulous tracking of supply chain components. This capability supports real-time data analysis and decision-making, enhancing responsiveness and reducing delays.
3. **Continuous improvement:** Chinese companies foster a culture of continuous improvement and cost efficiency, sharply contrasting with Western counterparts who appear more "reluctant and slow with the changes" (Interview II). This is demonstrated by their rapid turnaround during the pandemic and the ensuing integration of technological advancements to enhance productivity and reduce costs.

In summary, China's automotive supply chain has remained a step ahead by integrating the principles of operational excellence as a key component of its processes.

5.5.2 Distinct Government Initiatives in Supply Chain

China has not only built its operational excellence in the automotive supply chain through traditional key factors, but the government has also played a major role in shaping this excellence to propel China's influence in the automotive industry. Beyond direct policy intervention, this governmental influence extends to improving labor conditions and wages, which significantly impacts the supply chain.

Here are notable initiatives:

1. **Wage Reforms Impacting Supply Chain Costs:** By regulating and often increasing minimum wages, the Chinese government indirectly influences the operational costs within

the automotive supply chain. Higher wages can lead to increased costs, but they also motivate a higher standard of work and greater worker retention, which are crucial for maintaining consistent quality and output in supply chain operations (Liuyi, Yunchan, and Feirong 2023).

2. **Vocational Education and Development Programs:** The government supports vocational education and development initiatives that help workers acquire new skills relevant to the evolving demands of the automotive industry, particularly in areas like electric vehicle production and advanced automation. This upskilling of the workforce is essential for maintaining a competitive edge in the global market and ensures that the supply chain is not only efficient but also innovative (Cheng 2023).
3. **International Labor Standards Compliance:** To address international concerns about labor practices, China has been aligning its labor laws more closely with international standards. This helps in improving the global perception of Chinese manufacturing and reassures international stakeholders of the ethical considerations in China's supply chain management. For instance, in August of 2022, the Government of China ratified two labor conventions (No. 29 & No. 105) which prohibit forced labor and compulsory labor as a means of political coercion or education or punishment for the expression of political views (International Labour Organization 2022).

5.6 Conclusion

Throughout this research, we have delved into the strategic measures that have enabled China to navigate the complexities of the global supply chain market with agility and foresight to answer the following question: *How can China's strategic approach to supply chain management reconfigure the Western automotive supply chain landscape today?*

Central to our findings has been the role of SCR as a pivotal strategy in the overall automotive supply chain. This is exemplified by China's general dedication towards digitalization, which

fosters synergies, and drives technological innovation: “They focus their operations on technology rather than on traditional manufacturing systems, outdated with the production of electric vehicles” (Interview III). These advancements are setting new standards for the global automotive industry, where operational excellence can be achieved.

Moreover, the value of strong governmental support in transforming Chinese automotive companies into technology-centric enterprises illustrates a strategic and successful model of industrial evolution. Policies such as “Made in China 2025” acted as a catalyst in propelling China to becoming one of the largest EV markets globally. For Western companies, this suggests a reconfiguration strategy where greater collaboration with government entities could enhance their supply chain strategies and diversify cooperation. This approach would not only improve competitiveness but also facilitate a more resilient supply chain network.

Additionally, China’s automotive strategy effectively combines clustering with content sourcing diversification. By establishing industrial clusters that concentrate automotive manufacturers and suppliers, China enhances collaboration and resource sharing. Simultaneously, it diversifies content sourcing across these clusters, reducing dependency on single-source suppliers and increasing supply chain resilience. This integrated approach not only streamlines production but also strengthens the industry's ability to adapt to market changes and disruptions.

In conclusion, the strategic approach of China's supply chain management offers a blueprint for radical reconfiguration of the Western automotive supply chains. By embracing these transformative strategies, Western companies can not only prepare for future challenges but also capitalize on opportunities for growth in an ever-evolving global market.

6 Discussion and Conclusion

6.1 Managerial Relevance

This thesis has systematically analyzed China's influence on the Western automotive industry, revealing a significant shift from traditional approaches in the four areas studied to a robust emphasis on innovation and technology-centric approaches across all sectors of the industry in China. Our findings suggests that while sales and marketing are critical components of the industry, they are not the key drivers behind China's rapid success. This indicates that these areas might be less critical for Western industries aiming to emulate China's growth and market dominance strategies.

The research has identified supply chain management as a critical area of success within China's automotive sector. The strategic formation of industrial clusters and the integration of these clusters into the global supply chain have not only streamlined production but also enhanced China's responsiveness to market changes and technological advancements. This supply chain agility is largely attributed to the proximity and collaboration facilitated by these clusters, enabling rapid innovation and efficient adaptation to disruptions.

For Western automotive industries, this analysis suggests a reevaluation of strategic priorities. Emulating China's integration of robust governmental support with advanced supply chain and innovation strategies may provide a pathway to regain competitiveness. Rather than focusing predominantly on sales and marketing, Western firms might consider bolstering supply chain capabilities and fostering government-industry collaboration to enhance technological adoption and market responsiveness, as the unwavering governmental support is central to the efficacy of China's supply chain strategy. Similar to Henry Ford reshaping the industry, making cars a mass product, China is reshaping it with the heavy involvement of the government. Its role is profound, with policies such as "Made in China 2025" and targeted subsidies for electric vehicles stimulating the development of a technology-intensive manufacturing approach.

Studies, like those by Tang (2009) and Luo (2005), highlight that governmental support has been crucial not only in fostering an environment conducive to innovation but also in securing a competitive edge on the global stage. This integrated governmental strategy has provided a framework within which the Chinese automotive industry can thrive, showcasing a more unified and strategic approach than the segmented strategies observed in the West. It implies, that Western automotive companies, or in general the West might need to assess a shift in thinking. The belief that a free and self-regulating market is the single most important driver of innovation and economics success appears to no longer hold. In stark contrast, governmental interference, subsidies, and guidance allow for even greater success.

6.2 Theoretical Implications

This research contributes to literature by elucidating the different developmental trajectory of the automotive industry between the West and China over recent years, a period during which the industry has undergone considerable disruptions and transformation driven in large part by Chinese influences. Additionally, it delves into the critical interplay between the government and the automotive sector, which, unlike observed in the West, is not considered independent in China. Therefore, the empirical implications of this study are twofold, providing an analytical overview of the evolution of the industry and a comparative study into the role of the government within these two distinct contexts.

First, the thesis showed the distinct pathways through which the automotive industry has evolved in the West and China. While China entered the industry later than Western countries, they pioneered a groundbreaking approach by focusing heavily on the EV market. Indeed, aware of the saturated nature of the traditional automotive market, they strategically chose not to lag for years in a highly competitive ICE market and entered the industry by opening a new market. This strategic innovation not only propelled China to the forefront of the industry but also enabled them to establish and dictate their own rules within this rapidly expanding sector.

The rise of disruptions such as the pandemic has further emphasized this new market entry, hastening and unsettling Western firms. These pressures have urged Western automotive companies to rethink their strategies, driving a new evolution in the industry focused on innovation and technology-centricity. However, despite these shifts, Western companies appear less flexible and more anchored into their principles, often clinging to the historical value of the industry and resisting the transformative changes required. This hesitance contrasts with China's aggressive reshaping, highlighting a pivotal divide in strategic approaches between the two counterparts.

Meanwhile, although the automotive industry is often revered for its historical significance, we argue that it must undergo a comprehensive restructuring to remain relevant. The industry has already entered a new era where traditional ICE components have become outdated, signaling a need for existing players to become more flexible and adaptable to change. This shift is crucial as the sector evolves to incorporate advanced technologies and innovative business models, ensuring competitiveness in an increasingly dynamic global market.

Second, this study has investigated the divergent roles that governments play in the automotive sector in China and the West. In China, the government is a pivotal force, a key player, actively shaping the industry through direct policies coupled with indirect influences such as adjustments in wages and labor conditions. In contrast, Western governments typically view the automotive industry as an independent entity, one that should not be altered nor directly intervened with. This hands-off approach, while respecting market autonomy and natural directives, may hinder rapid adaptation and innovation compared to the Chinese model. The distinct levels of governmental support and intervention are not just simple differences but are central to understanding the pace and dynamism at which the Chinese automotive industry has advanced as a dominant player of the global industry. Therefore, upon close examination, this distinction in government input reveals to be a critical and powerful factor that accelerates

China's industry growth. For such, we argue that direct government intervention is an essential and required strategy that should take part in today's automotive sector strategies to enhance competitiveness.

6.3 Further Research

To conclude this work adequately and sufficiently, this final section contains suggestions or recommendations for future research in the relevant subject area.

In this study, it was established that China's influence in the automotive sector is considerable and that the combination of governmental support and entrepreneurial thinking is a key driver of China's far-reaching impact on the West. Due to the promising development in the automotive industry, through subsidising its own industry and valuable know-how within product development and supply chain, there are indications that China will also become active in other sectors. Accordingly, the automotive industry only serves as a cornerstone and showcase for disruptive powers. Initiatives such as the "Belt & Road" emphasise these goals of the Chinese, as structures are already being built to carry out further market expansions that are not attributable to the automotive industry.

Future research on China's influence on the vehicle industry should address China's diverse development prospects in global markets, focussing on technological innovation, supply chain dynamics and market expansion strategies. A particular focus should be placed on the aviation industry, as China has the potential to significantly expand its aviation industry and challenge the current market leaders through strategic investments in technology, infrastructure, and international partnerships. In the automotive industry, China has managed to reshape an industry that has been built up over decades without much prior participation. Therefore, it would not be far-fetched to think that by focusing on the development of cutting-edge aerospace technologies, such as more efficient jet engines and advanced materials for aircraft construction, China could also expand its competitiveness in this segment and challenge the big players and

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their strategies. Given the struggle, i.e., Boeing is currently facing, this might be an interesting topic to delve into.

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8 Appendices

Supplementary data, charts, and interview transcripts.

Appendix 1. Link to the Interview Transcripts

https://novasbe365.sharepoint.com/:b:/s/WorkProject9/EZ_-7WRNCOBHgQvaHqgdUnwBZdfH89N6zxYTm1En5yN6yQ?e=m6rDxg

Appendix. 2. Link to survey transcripts and results

Transcripts:

<https://novasbe365.sharepoint.com/:b:/s/WorkProject9/EcMM-ik73A9BjfW7SbKy5S0BCYK1ZK156TT51DwEjKovqw?e=nyp1Rs>

Results:

<https://novasbe365.sharepoint.com/:x:/s/WorkProject9/EXnQGV2JUgZAoxOJ9tJXVgkBghiG3kdfIwmTKkAjSsq8fQ?e=H2Tutu>

Appendix 3. Digital Marketing Visuals in China



(BYD 2024b)

Group Part



The power of technology

Smart, electric and smart driving are the future of cars. We are committed to continuously innovating industry-leading technologies, leading changes, and creating value for life.



design driven

We adhere to NIO's design genes and are committed to creating pure, easy-to-use, and desirable products to bring users a pleasurable experience with all the senses.

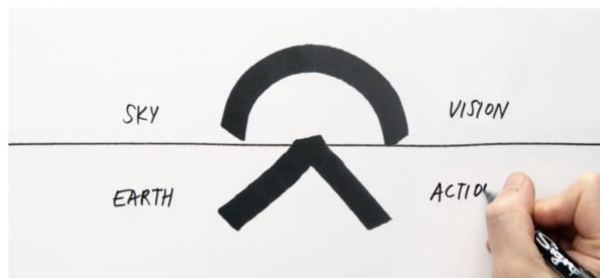


High-quality service that exceeds expectations

We redefine services to provide users with a full pleasant experience and improve user satisfaction.

(NIO 2024b)

Blue Sky Coming. 蔚来已来。
是我们对美好未来和清朗天空的愿景。
也是我们自公司创立伊始一直秉持的初心。



我们的品牌设计也传达着这些理念：
上方是天空，象征开放、远见和美好的未来；
下方是地球和指向地平线的道路，象征方向、行动和前进的动力。

(NIO 2024b)



(NIO 2024a)



(Porsche 2022)



(BYD 2024c)