

Schwabe, Julian

**Article — Published Version**

From “obligated embeddedness” to “obligated Chineseness”?  
Bargaining processes and evolution of international automotive firms  
in China's New Energy Vehicle sector

Growth and Change

**Provided in Cooperation with:**

John Wiley & Sons

*Suggested Citation:* Schwabe, Julian (2020) : From “obligated embeddedness” to “obligated Chineseness”? Bargaining processes and evolution of international automotive firms in China's New Energy Vehicle sector, Growth and Change, ISSN 1468-2257, Wiley, Hoboken, NJ, Vol. 51, Iss. 3, pp. 1102-1123,  
<https://doi.org/10.1111/grow.12393>

This Version is available at:

<https://hdl.handle.net/10419/230143>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<http://creativecommons.org/licenses/by/4.0/>

# From “obligated embeddedness” to “obligated Chineseness”? Bargaining processes and evolution of international automotive firms in China's New Energy Vehicle sector

Julian Schwabe 

Department of Geography, Philipps-Universität Marburg, Marburg, Germany

## Correspondence

Julian Schwabe, Department of Geography, Philipps-Universität Marburg, Deutschhausstraße 10, 35032 Marburg, Germany.

Email: julian.schwabe@uni-marburg.de

## Abstract

Over the past decades, the automotive sector in China has been characterized by the obligation of foreign manufacturers to enter joint ventures, transfer technologies, and localize production. Still, the Chinese automotive industry has remained dependent on foreign brands, capital, and technology. The advent of markets and supply chains for electric vehicles, however, changes the framework conditions for established foreign automotive firms in terms of competitive landscape and access to core technology components. This is mainly the result of political initiatives: Established automotive manufacturers are exposed to direct and indirect restrictions that influence their production of electric vehicles, their choice of suppliers, and their potential market shares in the future. This paper outlines multilevel bargaining processes of Chinese and foreign actors as they aim to maximize value capture in a fundamentally transitioning automotive sector. In contrast to the lead firm-centric focus of recent global production networks (GPN)-discussions, this paper argues that the determinants of how production networks evolve is first and foremost a question of the institutional environment. Focusing on power balances between state and firm actors in multilevel bargaining processes

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2020 The Authors. Growth and Change published by Wiley Periodicals LLC

offers a way of explaining GPN-evolution in institutional contexts in which power concentrates in executive bodies and decision-making processes are often informal.

## 1 | INTRODUCTION

The Chinese automotive market has displayed remarkable growth over the last decades as vehicle sales in China grew multifold from only 5.7 million units in 2005 to 29.1 million units in 2017 (OICA, 2017). Proportional to its growth as a market, China's relevance as an investment location for international automotive firms and suppliers has increased drastically since the early 2000s. The conditions under which foreign companies settle in China have been researched, among others, by Liu and Dicken (2006) who argued that China was in a position to basically dictate restrictive conditions for market entry, including joint-venture obligations, technology transfer, and localization of suppliers:

*The basic bargaining strategy of the Chinese government toward automobile-related FDI [foreign direct investment] has been to trade access to the domestic market, which it controls unequivocally, in return for capital and technology. The aim has been to accelerate the development of the industry while, at the same time, avoiding ceding full control of the industry to foreign TNCs [Transnational Corporations]. (Liu & Dicken, 2006)*

These conditions were termed by Liu and Dicken “obligated embeddedness” and the aim of such policies was to establish internationally competitive Chinese car manufacturers in the mid-term (Liu & Dicken, 2006; Nolan, 2014). However, from the Chinese perspective, the results are mixed: Foreign firms did establish comprehensive automotive production capacities and supply networks in China over the past decades (Sturgeon & Van Biesenbroeck, 2011). The market, however, continues to be predominantly covered by foreign brands. Despite comprehensive regulatory measures for protecting domestic firms, Chinese car companies have retained high dependency on foreign technology and capital (Kennedy, 2018; Nolan, 2014). This applies to vehicle sales as well as supply, which is mostly localized in China but dominated by large foreign suppliers in technology intensive-areas like combustion engines or electronic management systems (Sohu, 2017).

This picture, however, may change fundamentally, as the industry currently undergoes various transitions with regards to engine technology, business models, connectivity, and automatic driving (Teece, 2019). China has been one of the first countries to provide substantial support for the development of a market for “New Energy Vehicles” (NEV) which include battery electric vehicles, fuel cell vehicles, and plug-in hybrids. Even though NEV-sales are largely driven by policies, China has evolved as the largest electric vehicle market globally, with Chinese brand manufacturers such as BYD and BAIC leading in sales volumes (IEA, 2018). Comprehensive political support for the deployment of the NEV-sector is connected to the overall development goal to turn China into a world leading technology provider for the future automotive sector and to establish dominant market shares of domestic companies in this area (Wübbecke, Meissner, Zenglein, Ives, & Conrad, 2016).

This development raises the question of future perspectives for foreign automotive firms in China. Hence, it is worthwhile to revisit the notion of “obligated embeddedness” outlined by Liu and Dicken and explore in this study how the priorities of Chinese industrial policy have changed, how international automotive firms adjust their production structures, and how bargaining processes in different contexts can explain new localizations of value-added activity and inter-firm linkages in the emerging NEV-sector.

These aspects are explored from a qualitative perspective in which motivations, bargaining processes, and firm-level outcomes of recent policy initiatives are examined. Specifically, data from semi-guided expert interviews is used to analyze macro-level lobbying efforts, company strategies, and market entry conditions (using the case of Tesla). For the purpose of this study, 15 expert interviews with representatives of international OEMs, industry associations, and the German government were conducted in Beijing in 2018 and 2019. Complementing the empirical evidence gathered in interviews, publicly available data such as statistics, press releases, and media reports are used to outline announcements for vehicle production, market shares, and dynamics in the automotive industry.

As a theoretical frame, this article refers to the (closely related) concepts of *global value chains* (Gereffi, Humphrey, & Sturgeon, 2005) and *global production networks* (Coe & Yeung, 2015; Henderson, Dicken, Hess, Coe, & Yeung, 2002). In this context, a particular focus lies on power balances in national- and local-level bargaining processes as an explanatory factor for the way how international automotive manufacturers organize electric vehicle production in China.

This article is structured as follows: The theoretical framework of this paper as well as a review of Chinese institutional characteristics and practices of managing foreign investments are outlined in the following sections. Afterward empirical data about changing framework conditions amidst upcoming markets for electric vehicles as well as industry-side responses are explored. The paper concludes with a discussion about power balances between foreign stakeholders and Chinese state actors and conceptual implications.

## 2 | Power, market dynamics, and geopolitics as determinants for global production networks

A wealth of literature around the closely interrelated concepts of global value chains (GVC) and global production networks (GPN) has developed models on the regional, sectoral, and firm level in order to explain how global production is organized and which factors determine development outcomes for companies and regions. Without elaborating on the points of friction between these frameworks (such as chain vs. network-concepts; this is addressed by Coe & Yeung (2015) and Smith (2015)), the main parameters serving as explanatory factors for the evolution of GPNs, as well as conceptual weaknesses, shall be outlined.

GVC and GPN-literature centers on the actions of lead firms (such as brand assemblers) who orchestrate their subsequent structures of value-added activities based on market-side drivers which Coe and Yeung (2015) refer to as *capitalist dynamics*. As Coe and Yeung explicate:

*we argue that these capitalist dynamics become the raison d'être of global production networks that in turn prompt and explain the strategies of economic actors and their consequences for uneven development in different regional and national economies. (Coe & Yeung, 2015)*

These capitalist dynamics refer to competitive forces which, depending on the context, apply to varying degrees and include pressures to geographically expand one's market, to innovate, to reduce costs, or to improve financial performance. According to Coe and Yeung, they form the independent variable for the formulation of lead firm-strategies who are prompted to react to those pressures (Coe & Yeung, 2015).

The evolution of GPNs are essentially the result of actor strategies within the constraints of existing structures (Coe & Yeung, 2015). Actor strategies are aimed at maximizing the capture of value (which may have been created by themselves or others). Thus, competition for value capture is a key driver

around which relationships between agents (such as firms, state actors, or NGOs) evolve. While firms strive to capture value for their *organization* (e.g., in terms of profits, access to technologies, or access to markets), states, and their subdivisions aim to maximize value capture for their *territory* (such as tax revenues, knowledge inflows, employment). In the context of bargaining processes with international firms, they therefore aim to localize as much value creating activity as possible. Striving to maximize value for their own entity, firms, and states use power resources at their disposal to influence bargaining outcomes in their favor (Liu & Dicken, 2006).

The distribution of value capture is then fundamentally determined by the power balance between actors in the context of bargaining processes (Coe & Yeung, 2015; Depner & Bathelt, 2005; Henderson et al., 2002). Hence, understanding different conceptualizations of power helps to frame those bargaining processes and explain their outcomes. Allen (2003) distinguished between a *centered* and a *relational* perspective of power, wherein a centered approach takes a hierarchical view of actors whose relationships form based on power imbalances. As such, this concept describes power resources which are *possessed* by one central actor (e.g., a state institution) in order to exercise authoritative influence. Such authority can take the form of a high-ranking position, a mandate, regulatory powers, or (more implicitly) market dominance and purchasing power (Allen, 2003). Within a relational context, on the contrary, power resources are highly context specific and can be *mobilized*, for example, in the form of collective citizen action or coordinated lobbying of industry stakeholders (Hess, 2008; Liu & Dicken, 2006). In a more recent conceptualization by Dallas et al., both of these perspectives are adapted in a two-dimensional scheme in which the authors distinguish between direct and diffuse transmissions of power which can take place in a dyadic (between two bargaining parties) or collective (multiple-actor) context. The resulting matrix describes four different ways in which power expresses itself as a determinant for interrelationships and bargaining outcomes (Table 1; Dallas, Ponte, & Sturgeon, 2017).

These four expressions of power draw on different kinds of (centered and relational) resources in order to unfold their potential as source of bargaining strength. The availability of such resources arguably depends on the institutional context in which the bargaining process takes place. This point leads to a frequent criticism of the GPN/GVC-concept (e.g., Neilson et al., 2018; Werner, 2017; Yeung, 2018) in which the seemingly dominant role of capitalist dynamics and lead firm-strategies as the main driving forces in shaping GPNs questioned. This is not to say that the role of states as “extra firm actors” (Coe & Yeung, 2015) has not been acknowledged within the GPN and GVC-discussion (see Smith, 2015 for a comprehensive overview). States manage their domestic economy not only by using their regulative authority, but also through interventionist practices and protection of domestic firms in order to achieve certain development goals (Dicken, 2015; Smith, 2015). However, especially in the Chinese context, the criticisms of an under-conceptualized role of the state in recent GPN-discussion appears to be valid. In this context, Yeung (2018) outlined Chinese industrial policies on NEVs to be a “prima facie example of how the dominant role of a pro-active state can alter the development trajectories of an industry” (Yeung, 2018). This article acknowledges the prominent role of Chinese state actors by putting their policy priorities, their negotiations with lead firms and organizational results (rather than lead firm-strategies) at the center of analysis.

Another aspect that has received relatively little attention thus far is the profound influence which geopolitics can have on the way how GPNs evolve. This not only touches upon the aspects of national-level industrial policy, but also context-specific bargaining processes. Glassman argues that Geopolitics “play a central role in the constitution of [global production] networks” (Glassman, 2011), using the example of U.S.-lobbying for normalized economic relationships between South Korea and Japan in the 1960s that enabled the development of firms like Hyundai and Samsung into globally competitive TNCs (Glassman, 2011). One does not need the backdrop of potential military conflict

TABLE 1 Typology of power in global value chains

	Direct	Diffuse
Dyadic	<p><i>Bargaining power</i></p> <ul style="list-style-type: none"> <li>• Operates in firm to firm relations</li> <li>• Exhibits different degrees in hierarchy, captive, relational, modular, and market linkages</li> <li>• Is shaped by the relationship between lead firm/platform owner requirements and supplier competencies</li> </ul>	<p><i>Demonstrative power</i></p> <ul style="list-style-type: none"> <li>• Operates through informal transmission “mechanism along value” chains and/or competitive mimicry among suppliers and would-be platform owners</li> <li>• Is shaped by quality conventions implicitly accepted by the parties of a dyadic transaction</li> </ul>
Collective	<p><i>Institutional power</i></p> <ul style="list-style-type: none"> <li>• Operates through government regulation and/or multi-stakeholder initiatives or other institutionalized forms</li> <li>• Can be leveraged through industrial standards and codified “best practices”</li> <li>• Helps to build platforms and stimulates their network effects, extending to platform ecosystems</li> </ul>	<p><i>Constitutive power</i></p> <ul style="list-style-type: none"> <li>• Is based on broadly accepted norms, conventions, expectations, and best practices, e.g., financialization, “platform ideologies”</li> <li>• Can be leveraged by social and consumer movements</li> <li>• Arises from user-induced platform adjustments, extensions, and fully open platforms that stretch them beyond established ecosystems and opens up space for new platform owners</li> </ul>

Source: Dallas et al. (2017).

(such as the context of the cold war as outlined by Glassman) to recognize the mutual influence of industrial policies, geopolitical situations (e.g., disputes about trade and investment rules), and context-specific bargaining outcomes. The current trade dispute between China and the USA is one contemporary example of the relevance of the geopolitical dimension. As will be shown below, the geopolitical context is not only relevant for setting macro-level policy priorities, but also for context-specific dyadic bargaining processes.

Power balances, market imperatives and geopolitical considerations influence strategies of state actors and TNCs and bargaining outcomes, for example, for macro-level industrial policy or context-specific projects on the local level. These outcomes then determine the ways in which a TNC can access and operate in the market of a host country and, in turn, influence the way how regions of the host country connect to GPNs. That is to say, that TNCs become territorially embedded in their host economies as they open locations and initiate relationships with downstream businesses, leading to regional-level development processes like employment, capital inflow, and knowledge spillovers (this is the type of embeddedness which Liu & Dicken (2006) focused on). At the same time, supply structures of the host country become organizationally embedded in the global production network of the TNC (“network embeddedness”; Henderson et al., 2002). The intersection of a TNC's location and a location's connection to the TNC's production networks describes the nexus of the territorial and organizational dimensions from which both TNC and host state pursue the maximization of value capture.

The simplified correlation of these aspects can be summed up as such that economic and non-economic actors on all levels utilize power resources in pursuit of maximizing value capture. The availability of power resources for bargaining processes depends not only on the internal capacities of the bargaining parties, but also to a large extent on the institutional framework conditions, the positioning of a firm to cope with capitalist dynamics as outlined by Coe and Yeung (2015) and, depending on the context, the geopolitical situation. The resulting bargaining processes on multiple levels then



influence the various ways of how economic actors are interconnected, embedded, and constrained by environments they operate in. Given the premise that in the Chinese context, the institutional environment (simply put: the state on different levels) plays a critical role in shaping production networks, the institutional environment, and the exercise of power in the development of the Chinese automotive industry are introduced in the following.

### **3 | CHINESE STATE ACTORS: EXERCISING POWER THROUGH GOALS, REGULATIONS, AND BARGAINS**

China is a particularly prominent example for the profound influence of state policy in the formation of GPNs. The Chinese economy is commonly characterized in literature as “mixed economy” (Robins, 2010), “socialist market economy” (the official term of the Chinese government; Naughton, 2017) or “state capitalism” (Peck & Zhang, 2013). Such terms point to several characteristics which influence the interplay of state actors and companies: These include a historical legacy of China as an authoritarian one-party system with no independent judiciary, a tradition of planning targets and quotas to guide policy making, a common practice of high state intervention in economic activities, power struggles between the central and local levels of governance as well as the essential importance of personal relationships (Liu & Dicken, 2006; Peng, Wang, & Jiang, 2008; Wuttke, 2017). In this context, official and semi-official planning targets defined by the central government play an important role in steering the economy toward anticipated development paths. This applies to Five-Year Plans, which not only provide the overall development framework of the country, but also sector or technology-specific plans like the Made in China 2025-roadmap (MIC). Such development outlines formulate socioeconomic development goals based on which provincial and local level governments orient their policies and based on which subsequent laws and regulations are formulated (Van Aken, 2013).

One key aspect of the way how Chinese state actors exercise power over companies is the considerable leeway that exists in the way how (and if) political goals are achieved and regulations implemented. Governments on the local level focus on achieving such targets which the central level considers to be a priority. Another important aspect amidst the absence of reliable legal protection is the potentially discriminative implementation of laws and regulations which in some cases are vaguely formulated (Van Aken & Lewis, 2014). Such circumstances enable Chinese state actors to provide approvals, intervene in business operations, and distribute funding based on political considerations without having to explicitly breach existing regulations (EUCCC, 2017). This way, the Chinese state actors in general hold considerable bargaining power in determining the sort of business operations they allow or encourage in their territory and under which conditions (Liu & Dicken, 2006). On the contrary, Liu and Dicken have pointed out the existing rivalry between localities as each one needs to fulfill certain goals for economic development and growth, leading to intense competition among provinces for investment. This provides a source of bargaining strength that can be exploited by TNCs in order to find the most favorable location (Liu & Dicken, 2006).

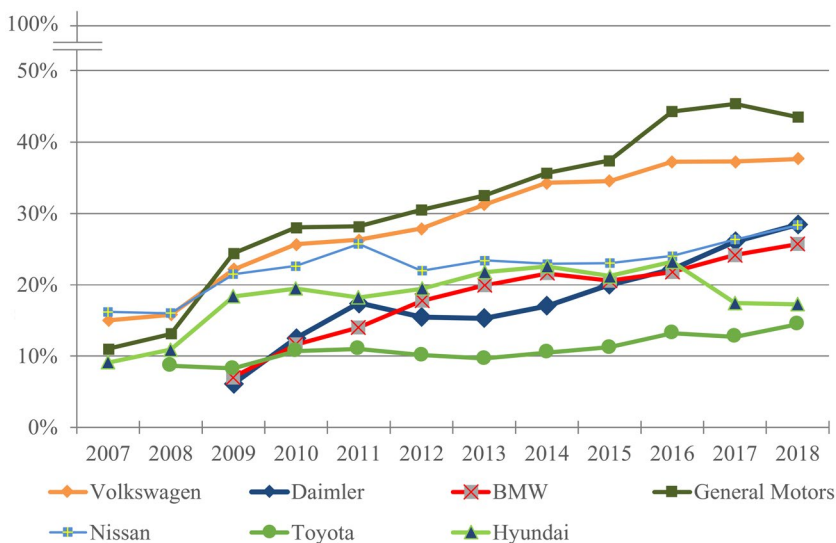
### **4 | CHINESE STATE ACTORS: DESIGNING AN NEV-MARKET WITH DOMESTIC FIRMS AND TECHNOLOGIES**

Over the past decades, international firms have developed strong positions in the Chinese automotive market regarding brand recognition and supply network. While vehicle production is mostly localized

(the import share is at 4%; Chyxx.com, 2019), it is mostly foreign brands which lead sales and domestic delivery of technology intensive components like engines (sales shares of foreign brands in passenger vehicles ranged between 50% and 60% between 2013 and 2017. Foreign brands in delivery of key components can reach over 90%; Chyxx.com, 2018, Sohu, 2017). At the same time, as Figure 1 displays, large foreign manufacturers grew increasingly dependent on the Chinese market. This is especially true for the large volume producers Volkswagen and General Motors: For those companies, the China-specific sales shares increased multifold since 2007. The tendency has been similar for high-end brands Daimler and BMW, while for Japanese and Korean brands, the growth has been more moderate. Germany is particularly exposed to political risks in this context: Given the importance of the automotive industry for the German economy, on the one hand and, the dependence of German companies on the Chinese market, on the other hand, German actors from industry and government are particularly sensitive of the risks that domestic car companies face with regards to overseas markets.

The Chinese leadership has several motivations to develop the NEV-market: While reducing air pollution in the cities is widely communicated in the media as a main benefit, an interviewed German government representative named reduced dependence from oil imports (amidst a steadily increasing vehicle stock) and the development of a technologically competitive (electrified and connected) automotive industry as the main motives for the Chinese state to strongly support electric vehicle deployment. The leadership realized that domestic firms will not be able to establish global competitiveness for vehicles with combustion engine. The development of a market for electric vehicles, therefore, provides a strategic opportunity to restructure an industry of global importance in a way that allows Chinese firms to occupy higher market shares in more technology intensive-areas.

The Chinese NEV-market is driven by political initiatives. State actors apply various measures to support vehicle deployment and to cultivate domestic companies. Subsidies and license plate restrictions have been the main instruments for pushing electric vehicle deployment thus far. Cumulated sales subsidies alone amounted to an estimated 36.6 bil. USD between 2009 and 2017 (Kennedy, 2018). These measures were effective especially in cities like Beijing and Shanghai, enabling them to achieve



**FIGURE 1** International automotive groups (volume and high-end producers): share of China in vehicle sales over time. *Source:* Own compilation based on company annual reports



NEV-shares far above national average (GIZ, 2018; IEA, 2018). With the phase out of subsidies by 2020 and the introduction of an NEV-credit system (colloquially called “production quota” by industry stakeholders) in 2019, the market risk of NEV-deployment is shifted entirely to the industry. This system was initially announced in September 2016. In its final version, announced in September 2017, it applies to OEMs with annual production volumes of at least 30,000 units. Within this credit system, each produced car stands for a certain amount of credits and OEMs are required to collect a minimum amount of NEV-credits (10% in 2019 and 12% in 2020) which can be obtained by producing NEVs. The credit value of an NEV depends on the vehicle type (battery electric, plug-in hybrid or fuel cell) and its range. OEMs which do not meet their minimum credit requirements will need to buy credits from other manufacturers or face penalties (GIZ, 2018).

Political support for vehicle deployment and cultivation of domestic companies is guided by targets and regulations which are summarized in Table 2. Technology transfer continues to play a role as Sino-foreign JVs are required to master core technologies of the models assembled, including battery, electric motor, and inverter. At the same time, the overall cancelation of the joint-venture rule was announced so that foreign companies would in principle be able to setup wholly foreign owned vehicle production (NDRC, 2018). While the example of Tesla (as discussed below) shows that the setup of a wholly foreign owned vehicle production facility is already possible, the implications of abolishing this rule remain to be seen.

Some of these policy initiatives have triggered particular concern among foreign industry stakeholders. This applies to the Made in China 2025-framework (published in 2015; Expert Commission for the Construction of a Manufacturing Superpower, 2015) and the New Energy Vehicle credit system (announced in 2017, in force since 2019; GIZ, 2018). From this backdrop, multilevel-bargaining processes in which Chinese and foreign actors pursue their goal of maximized value capture are outlined in the following empirical section. These include state actors and associations which negotiate on the national level as well as individual companies who negotiate new inter-firm linkages and market entry conditions on the local level.

## **5 | NATIONAL LEVEL: FOREIGN INSTITUTIONS LOBBYING FOR DELAYED “PRODUCTION QUOTAS” AND EQUAL MARKET ACCESS**

Processes of institutional lobbying in China are relatively opaque. Industry associations primarily engage with central government stakeholders including the state council, ministries, and commissions relevant to their field of interest in order to obtain information on upcoming policies, convene the standpoint of their members and influence goals, laws, regulations, and policy implementation. Also, associations often seek to promote their position publicly. While the Chinese system remains authoritative, lobbying efforts have been recognized as being relevant and also influential (Deng & Kennedy, 2010).

The context of foreign responses to the NEV-credit system and the MIC-framework are cases of foreign institutions addressing Chinese government stakeholders in order to influence the formulation of the regulation (in the former case) and to influence the implementation of a framework of policy goals (in the latter case). The main methods in these two cases, as described above, include consultations with central government stakeholders and the public communication of their position. Below, lobbying efforts of foreign actors on these two items of industrial policy are outlined based on interviewed government and industry stakeholders.

**TABLE 2** Central-level planning goals and regulations for promoting a domestic electric vehicle industry

	Planning targets (selection)	Relevant regulations (selection)
Vehicle deployment	13th Five Year-Plan: <ul style="list-style-type: none"> <li>● Deploy 5 mil. NEVs by 2020</li> <li>● Annual production of min. 2 mil. NEVs by 2020</li> </ul>	<ul style="list-style-type: none"> <li>● New Energy Vehicle credit system (in force since 2019): Determines required share of NEVs in total production for each OEM with annual production of min. 30,000 vehicles</li> <li>● Subsidies for electric vehicle sales (phasing out by 2020)</li> </ul>
Cultivation of domestic companies	Made in China 2025-Roadmap: <ul style="list-style-type: none"> <li>● Market shares of domestic producers:               <ul style="list-style-type: none"> <li>○ Min. 80% of NEVs by 2025</li> <li>○ Min. 80% of NEV batteries from domestic producers by 2020</li> <li>○ Min. 50% Sensors, driving assistance, lightweight components by 2025</li> </ul> </li> <li>● Cultivate 10 globally competitive domestic NEV-brands</li> </ul>	<ul style="list-style-type: none"> <li>● Battery “White List” (canceled in June 2019):               <ul style="list-style-type: none"> <li>○ List of battery producers for which NEV-subsidies are eligible</li> <li>○ Initially, foreign firms were not included, as requirements were formulated in a discriminative way</li> </ul> </li> <li>● Joint-Venture requirement (phased out):               <ul style="list-style-type: none"> <li>○ Vehicle production needs to be in a JV with a Chinese counterpart with at least 50% share</li> <li>○ JV needs to possess core technologies of NEV: Battery, inverter, electric motor</li> </ul> </li> </ul>

Source: Expert Commission for the Construction of a Manufacturing Superpower (2015); MIIT et al. (2017); ICCT (2018); Kennedy (2018); MIIT (2019).

Various interview partners from different foreign industry associations have confirmed the concern which the NEV-credit system has raised, as an initiative which surprised the industry in the way how it was proposed in 2016, giving companies only very short notice to prepare before the rule would come into force (which was originally anticipated for 2018; ICCT, 2018). Due to a relatively broad mobilization of stakeholders, it was possible to pursue the Chinese government to delay the rule by one year and make it more flexible. This relatively successful lobbying effort was possible because of two main reasons: First, international representatives of the sector, including business associations from the EU, United States, Germany, Japan, and South Korea, have developed and communicated a common position on this topic. Second, the lobbying effort was elevated from the industry to the political level, as it was put on the agenda of bilateral talks between Chinese Prime Minister Li Keqiang and German chancellor Angela Merkel. An interviewed German government representative described the situation as follows:

*It was very important to make clear that there is a common position [among all automotive industry stakeholders] and that this is not about the interests of one individual company. However, the influence of foreign industry associations in China is limited (...), therefore the dialogue on the government level is all the more important.*

In the context of the MIC-framework, lobbying is about interpretation and implementation about the goals outlined in the roadmap. The framework outlines semi-official targets of market shares for domestic

firms in various sectors including NEVs and components (see Table 2). It is important in this context to interpret the term “domestic” as the word used in the document (“自主”; “self-owned”) could mean either: A brand of Chinese origin or a locally produced product. The criteria based on which domestic market shares are defined remains unspecified (EUCCC, 2017; Wuttke, 2017). Uncertainty about such significant definitions complicate investment planning. This is relevant regarding required NEV production in the context of the credit system as it could, in theory, force foreign OEMs to produce electric vehicles while at the same time capping their potential market shares based on goals outlined in the MIC-roadmap. Efforts of foreign industry associations vis-à-vis representatives of the Chinese Ministry of Industry and Information Technology (MIIT), therefore, focused on emphasizing the need for continued market liberalization and nondiscrimination of foreign companies. As an interviewed representative of a foreign industrial association stated:

*First, when we talk about this [the MIC-roadmap] with the Chinese authorities, of course they push back, they say ‘there are no such conditions that certain percentages should be indigenous’. Then we know there are working level documents that have that indication. So individual ministries or individual officials will be pushing in that direction, trying to push foreign companies to corners. So what we are trying to say [to Chinese representatives] is that for any innovation to be successful, it has to be integrated in the global supply and value chains, also in China.*

While mentioning of the MIC-roadmap has been toned down in more recent official statements, it nevertheless appears to serve as a guideline endorsed by the central-level leadership that influences the management of local economies, using vaguely formulated regulations (such as for distribution of subsidies or government procurement) as leeway to protect domestic firms (EUCCC, 2017; Wuttke, 2017). The MIC-roadmap is one of the most controversial expressions of an overall push to position domestic companies in technology intensive sectors which has already taken shape during the 12th Five-Year Plan period (Ling & Naughton, 2016). Specific to the market of electric vehicles, a “white list” of battery providers which would be eligible for sales subsidies was introduced in 2015, outlining requirements (such as localized production) which favored Chinese battery producers. The Japanese producer Panasonic and Korean producer LG Chem were not included in this list until 2018 and the list was canceled altogether in 2019 (MIIT, 2019). Commenting on the “white list” an interview partner familiar with the Chinese battery industry stated that its introduction was originally motivated by excluding the Korean firm LG Chem in retaliation for the placement of U.S.-missile defense units in South Korea. While the Chinese government could not publicly communicate this motivation, the “white list,” defined requirements which were de facto discriminatory against non-Chinese producers. Such initiatives to cultivate domestic technology providers appear to be effective insofar, as governments on the local level oblige using different formal and informal means. The implications of these macro-level industrial policy initiatives on company strategies and local-government priorities are outlined in the following.

## 6 | OEM-STRATEGIES TO FULFILL THE “PRODUCTION QUOTA”

The NEV-credit system pressures foreign OEMs to introduce electric vehicle portfolios faster than originally anticipated. While the system applies to foreign and Chinese OEMs alike, Chinese companies were better prepared for this requirement: In average, they collectively surpassed the obligatory 10% NEV-credit requirement for 2019 2 years ahead of time while Sino-foreign JVs achieved only

0.5% in average (GIZ, 2018). Consequently, Chinese OEMs dominate the domestic market in electric vehicle sales covering 91.5% between January and November 2018 (Chyxx.com, 2019), which is in stark contrast to the high market share of foreign companies in overall vehicle sales. This is not only because of low market demand, but also due to cultural differences between Chinese and foreign firms in decision-making processes. German management, for instance, tends to base decisions on clear and definite information such as official policy announcements. In the Chinese context, however, (as many interview partners have pointed out) it is often necessary to make major investment decisions in situations of ambiguity. As a Chinese interviewee of a German OEM explained: "As a Chinese, when the authorities have an intention, they have their way to tell you: 'We are going to do this in the next couple of years,' but they are not going to implement this policy officially yet, but by then you should prepare." As a consequence, most foreign automotive firms announced production plans only after the NEV-credit system was being formulated. Table 3 outlines the NEV-production strategies of large foreign invested OEMs.

The production strategies are characterized by minimizing risk: While German companies appear to follow more diverse approaches compared to Japanese and U.S.-manufacturers and include new JVs, new production sites and capacity extensions, VW and BMW operate plants which can produce both, conventional and electric vehicles, allowing them to relatively flexibly adjust production. Compared to their German competitors, Japanese OEMs are more reliant on existing infrastructure for producing EVs and invest in capacity expansion rather than new locations. An interesting observation is the partnership of several Japanese companies with GAC to produce electric SUVs under the GAC-brand based on the Trumpchi GS4 model. These vehicles are almost identical in their design and are distributed using the sales channels of Toyota, Honda and Mitsubishi. This move is unusual and has been interpreted as a quickly feasible, low-cost method to fulfill the requirements of the NEV-credit system.

The phase out of the joint-venture requirement does not appear to be relevant for established OEMs. With the exception of Tesla (as a relative newcomer) the only established foreign OEM attempting to gain a majority share thus far is BMW. All other established OEMs attempt to build NEVs either within existing or new joint ventures. The reason, as mentioned by an interviewed representative of a German OEM, is difficulty of obtaining a production license for new wholly owned facilities. As the central government has become restrictive about granting new automotive production licenses, it appears to be more feasible in terms of administrative costs, access to infrastructure and, not least, access to political decision makers to continue working with Chinese JV-partners. An interviewed industry representative confirmed that most established foreign companies do indeed prefer to work with joint-venture partners as they are valuable in managing relations with their local government, which significantly improves their standing in administrative procedures and early detection of problems.

Interviewed industry representatives pointed out that the production plans outlined in Table 1 are mostly a consequence of the NEV-credit system (with the cooperation of Japanese firms with GAC being a particularly illustrative case in point). Initially, OEMs are likely to produce only the number of EVs as required by their individual credit score because the development of the market after subsidies have been phased out remains uncertain. A drastic decrease of year-on-year sales of electric vehicles in September 2019 indicates that the development of purely demand driven NEV-markets without subsidies continue to be challenging (CAAM, 2019). Lower than anticipated sales of the Denza (the earliest Chinese foreign joint venture for EV production) also indicates that producing electric vehicles has not yet been attractive for established firms from a purely economic standpoint.

**TABLE 3** Electric vehicle production announcements of established foreign automotive firms in China

Foreign company	Joint venture/ Ownership	New JV plant	New plant expansion	Plant	Announced	Scheduled NEV production start	Brand	Production location	Remark
Volkswagen	JAC—Volkswagen (50%, 50%)	✓			2016	2018	Sol*	Hefei	Production of low-cost EVs under new brand
	JAC—Volkswagen (50%, 50%)	✓			2017	TBA**	VWCV	Hefei	Production of electric commercial vehicles
	SAIC—Volkswagen (50%, 50%)		✓		2018	2020	VW, Audi, Skoda	Shanghai	Production of EVs
Daimler	FAW—Volkswagen (51%–49%)		✓		2014	2018	VW, Audi	Foshan	Combined production lines for conventional and EVs. Factories opened in 2018, EV-production to be gradually increased
	BYD—Daimler (50%, 50%)	✓	✓		2010	2014	Denza*	Shenzhen	Production of EVs ongoing
	BJEV (BAIC: 37.3%, Daimler: 3.9%, others: 58.8%)			✓	2017	2019	EQ*	Beijing	Production of EVs under new brand
BMW	Great Wall Motor—BMW (50%, 50%)	✓			2018	2021	MINI	Zhangjia-gang	Production of electric MINI, possibly also for export
	BMW—Brilliance (50%, 50%)		✓		2018	2020	BMW	Shenyang	Production of electric SUV, possibly also for export, BMW to increase ownership share to 75%, approval pending
	SAIC—GM (50%, 50%)				2019	2019	Buick, Chevrolet, Cadillac	Shanghai	Production of electric Buick model in 2019, roll out of 60 electric models by 2023
General Motors	SAIC—GM—Wuling (50.1%–44%–5.9%)				2017	2017	Baojun	Liuzhou Qingdao	Production of small electric cars ongoing

(Continues)

TABLE 3 (Continued)

Foreign company	Joint venture/ Ownership	New JV	New plant	Plant expansion	Announced	Scheduled NEV production start	Brand	Production location	Remark
Ford	Zotye—Ford (50% 50%)	✓	✓		2017	TBA	TBA	Jinhua	Production of small EVs under new brand for ride hailing fleet
	Jiangling—Ford (Jiangling: 41%, Ford: 32%, others: 27%)				2017	2019	Ford	Nanchang	Production of electric SUV
Hyundai	BAIC—Hyundai (50%, 50%)				2019	2019	Hyundai	Beijing	Production of three EV models
Mazda	Changan—Mazda (50%, 50%)				2018	2020	TBA	Nanjing or Chongqing	Production of electric SUV
Toyota	FAW—Toyota (50%, 50%)		✓		2016	2018	Toyota	Tianjin	Production of Corolla PHEV and ZOE BEV ongoing, further models follow
	GAC—Toyota (50%, 50%)		✓		2018	2018	Toyota	Guangzhou	Production of Levin PHEV on-going, C-HR BEV by 2020, further models follow
Honda	GAC—Honda (50%, 50%)		✓		2018	2019	GAC	Guangzhou	Production of electric SUV based on the GAC Trumpchi GS4, using sales networks of foreign counterparts
Mitsubishi	GAC—Mitsubishi (50%, 50%)				2018	2018	GAC	Guangzhou Changsha	
Nissan	Dongfeng—Nissan (50%, 50%)		✓		2018	2020	Dongfeng, Vinucia, Nissan	Wuhan Changzhou	Gradual launch of 20 EV models
	Zhengzhou—Nissan (Dong-feng: 79.7%, Nissan: 20.3%)		✓		2018	2018	Nissan	Guangzhou	Production of Sylphy BEV
					2016	2016	Dongfeng	Zhengzhou	Production of light commercial BEV's ongoing

(Continues)



**TABLE 3** (Continued)

Foreign company	Joint venture/ Ownership	New JV	New plant expansion	Plant	Announced	Scheduled NEV production start	Brand	Production location	Remark
Nissan-Renault	Nissan, Renault— Dongfeng (25%, 25%, 50%)	✓			2017	2019	eGT Automotive*	Shiyan	Production of EVs under new brand
Renault	Dongfeng—Renault (50%, 50%)				2017	2019	TBA	Wuhan	Launch of three low priced electric models under new brand

\*Brands specific to electric vehicles.

\*\*To be announced.

Source: Own compilation based on press releases of automotive manufacturers and articles from sector-specific media.

## 7 | LOCAL LEVEL: GOVERNMENT-INFLUENCE ON CHOICE OF BATTERY SUPPLIERS

One core component of the electric vehicle is the battery, which covers roughly one-third of vehicle production cost. Evidence from various interview partners (including a representative of a German OEM, a German government representative, and an industry expert) indicates that the selection of battery suppliers by international OEMs is in some cases influenced by local governments in order to favor Chinese firms. In such a context of dyadic bargaining processes, local authorities can apply informal, non-explicit means to influence the outcome in their favor. This is highlighted with the example of an interviewed German OEM in the context of establishing battery supply for its planned electric vehicle portfolio: From the perspective of the German management, the choice of a battery cell producer in China was mainly a matter of technical standards and performance. From the perspective of Chinese employees involved in the decision-making process, however, it was to be decided by political criteria. The reaction from Chinese authorities to choosing a battery supplier that may be eligible but not politically endorsed included, for example, a drastic slowdown of administrative processes. Such reactions however are never explicit, as an interview partner described: “They didn’t say ‘you can’t do that’, they just acted very, very slow, which means ‘you should try something else’.”

Indicators of authorities favoring or disfavoring specific battery suppliers went beyond the listing of a company in the “white list”: Also, whether they are owned by central government entities or whether Chinese state banks are invested in those companies are important for evaluating whether local authorities would support the choice of a specific battery vendor. As a result of this process, an (initially favored) foreign supplier was dropped and replaced by a Chinese one. This example is one indicator of how incentives to engage Chinese firms, as outlined in the MIC-roadmap, play out on the local level. In this context, the removal of the battery “white list” seems relatively irrelevant, as pointed out by an interviewee familiar with the battery industry: Over the 4 years in which the participation of large foreign battery suppliers like LG Chem and Panasonic was restricted, the domestic producers such as CATL and BYD invested in technological performance and production capacity and secured contracts with most OEMs aiming to produce electric vehicles. Such contracts are typically concluded over several years, making it more difficult for foreign battery suppliers to position themselves in a market which is by now dominated by CATL and BYD.

Overall market shares of Chinese and foreign battery suppliers for electric vehicles in China indicate that protection of domestic companies, and especially the development of CATL, contributed to dominant market shares of Chinese battery companies: As of 2018, CATL and BYD, respectively, covered 44% and 22% of the delivered MWh of battery capacity. The remaining market is fragmented and distributed among 51 different suppliers each of which delivered capacities of at least 25 MWh to the domestic market of electric vehicles. Out of these, the U.S.-based firm Farasis is the only non-Chinese supplier with a noteworthy market share of 4% (Gaogong Lidian, 2019).

## 8 | LOCAL LEVEL: TESLA'S DEAL WITH THE GOVERNMENT OF SHANGHAI

The most prominent example of a new foreign entrant to the Chinese electric vehicle market is Tesla: Vehicle exports to China contributed between 17.2% and 8.2% to Tesla's overall revenue in the years 2016 to 2018 (Tesla Inc., 2019, 140). In 2019, Tesla broke ground for its giga factory in the Shanghai Free Trade Zone. The factory will eliminate the 25% import tariffs that Tesla cars in China are have previously been subject to (Tesla Inc., 2019).

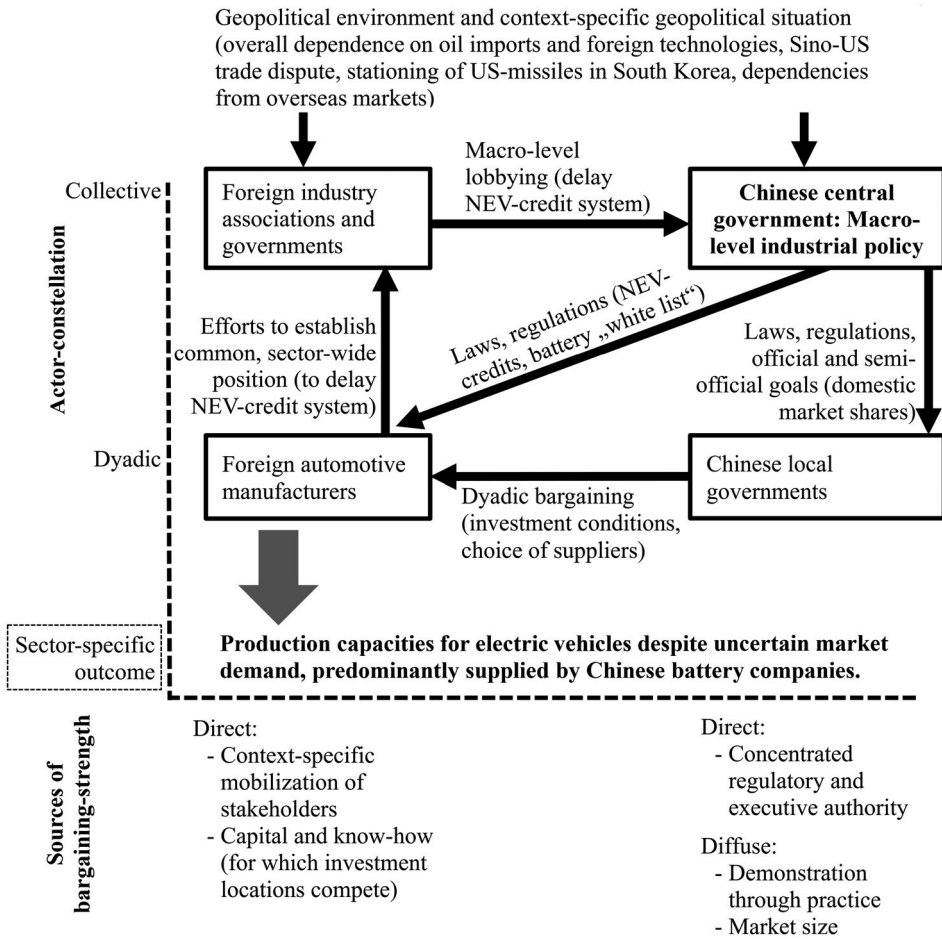
The conditions under which Tesla was able to build a production in China appear to be relatively favorable. The planned cancelation of the JV-obligation of automotive firms can be viewed in this context. An industry representative familiar with Tesla explicated that within this process, several local-level governments lobbied the central level to abolish this obligation and the planned investment of Tesla appeared to have been the cause that would lead the central government to announce a phase out of this rule. Also, this move was interpreted as a concession to foreign stakeholders within the context of the ongoing trade dispute with the USA. Similar to previous investments of foreign automotive companies, several local governments competed as investment locations, enabling Tesla to choose whichever location offered the most favorable terms. Besides employment and capital, the brand of Tesla played a decisive role in being perceived as an attractive investor, as a city hosting a Tesla factory could hope to use this brand name to attract further investment.

Production in the Tesla factory in Shanghai commenced in December 2019, starting off as a CKD (completely knocked down)-production, assembling mostly imported parts. Tesla is not subject to explicit localization requirements and government stakeholders appear to not directly influence the choice of the battery supplier. There is nevertheless an explicit intention of Tesla to localize the battery supply and other parts of the production (Tesla, 2019, 2020). As the interview partner explained, Tesla is generally willing (and implicitly expected) to engage and train local suppliers in order to enable them to meet the technical requirements of Tesla, and thus, gradually develop a local value chain not only for battery, but also for other components specific to electric vehicles such as electric engine, battery management system, or battery temperature regulation.

## 9 | DISCUSSION: POWER BALANCES AND MULTILEVEL BARGAINING AS DETERMINANTS FOR PRODUCTION NETWORKS

The multilevel bargaining processes and outcomes outlined in the previous sections are summarized in Figure 2. The results of the macro-level industrial policy strategies are visible at scale as all international OEMs active in China adapt their capacities for NEV-production, with several new joint ventures being established. For the time being, they tend to follow a strategy of minimizing risk as market prospects for electric vehicles remain uncertain. Local governments appear to indirectly influence the choice of battery suppliers as they follow the semi-official goals of the MIC roadmap. From this empirical evidence, several conceptual observations can be made:

First, Chinese policies on developing the NEV-sector indicate a shifting priority from managing investment inflows (as outlined by Depner & Bathelt, 2005; Liu & Dicken, 2006 or Sturgeon & Van Biesenbroeck, 2011) toward steering capacities and linkages of already localized firms toward desired directions. State intervention in economic activities is certainly not new to China (or East Asian countries for that matter; Dicken, 2015, 181f). Past industrial policies, however, commonly aimed at enabling domestic industrial sectors to catchup with the international state of art through a mixture of protectionism and channeling foreign investment (the approach of “obligated embeddedness” described by Liu & Dicken, 2006 is an example of this). The case of Tesla indicates that market entry conditions for TNCs are comparatively liberalized. It is now possible to setup a wholly foreign owned facility for vehicle production without explicit requirements of technology transfer. In this context, as a company new to the Chinese market, Tesla could wield bargaining power by leveraging the competition of different investment locations. The relevance of abolishing sector-specific regulations like the joint-venture requirement and the battery “white list” remains to be observed, however and may be limited in the context of the given interrelationships.



**FIGURE 2** Multi-level bargaining relationships between foreign industry stakeholders and Chinese state actors and sector-specific outcome Black arrows indicate directions of influence. In brackets: Aspects relevant to the case of NEV-production outlined in this article. *Source:* Own adaption

Rather than issuing restrictive conditions for investment inflow, in the context of electric vehicles, the state exercises its authority to *create* an NEV-market with the explicit goal of establishing Chinese firms as market and technology leaders. This example challenges the conceptual assumption of capitalist dynamics and lead firm-strategies (as outlined by Coe & Yeung, 2015) to be the main driving forces for the formation of GPNs (Yeung, 2018). The independent variable in this case is Chinese industrial policy, which forcefully pushes demand and supply and wherein local-level governments also influence inter-firm linkages, leading to an NEV-sector in which Chinese OEMs and suppliers of core components cover dominant market shares. As such, Chinese industrial policy can be much more intrusive in terms of influencing company decision making compared to other industrial policy regimes which focus on attracting investments and localizing production through tax incentives and subsidies (such as eastern European countries; Lutsey, Grant, Wappelhorst, & Zhou, 2018) or on enforcing emission standards (such as the EU). The Chinese ability to *create* production networks that are dominated by domestic firms is due to a concentration of institutional power within the Chinese central government (which is neither contested by political competition nor truly restricted by an

independent judicial system) and the central government's control over the world's largest market on which German OEMs in particular grew increasingly dependent over time.

This leads to the second (and main) conceptual point of this article: Compared to *capitalist dynamics* as described in GPN-literature, Chinese industrial policy (as an independent variable for the formation of GPNs) is articulated in an entirely different context and to a certain degree a matter of bargaining with foreign counterparts. As described above, the Chinese side holds immense institutional power in this regard. This is not to say that power balances are completely one-sided: Foreign industry associations can achieve concessions if they manage to develop a sector-wide position and mobilize governments from their home countries (thereby elevating the negotiation from a matter of business lobbying to a matter of international diplomacy). Industry associations draw their bargaining strength primarily by forming a collective position and attempting to mobilize other actors to support their cause. As described by Allen (2003), such a decentralized, relational expression of power is context-specific and depends highly on the achieved degree of alignment and mobilization.

Institutional bargaining outcomes, such as macro-level industrial policies provide the frame within which dyadic bargaining takes place. In this context, local governments have the leverage and the incentive to influence strategic company decisions in a way that contributes to domestic industrial policy goals. It is the dyadic bargaining level in which the Chinese push for cultivating domestic firms is implemented. As indicated by several interview comments in the context of battery supply, practices of favoring domestic firms are in some cases indirect and informal, but nevertheless systematic and a result of political signals from the central leadership. Such implicit pressures are, again, the result of the Chinese institutional setup: Local governments bodies are mainly concerned with fulfilling national development goals which are broken down to their region. In the absence of an independent judiciary and institutionalized competition of interest groups, negotiations, and government decision making are characterized by a high degree of informality and concentration of institutional power in executive bodies. The informality and decentralized nature of such bargains also makes them difficult to address in the context of coordinated lobbying efforts. Amidst weak judiciary and formal institutionalization of decision making, diffuse transmissions of power become relevant as local-government practices function as guiding, demonstrative example (a function which in more formalized institutional environments may be fulfilled by court rulings). A myriad of dyadic, informal negotiations in which inter-firm linkages are determined allows local governments to utilize their institutional authority while foreign counterparts are in a difficult position to mobilize stakeholders for support (thus, creating power-balances working strongly in their favor; Figure 2).

Due to the prominence of executive bodies and the partial informality of decision making and bargaining processes, it is not only of strategic importance for TNCs to understand the market and (formal) legal environment they operate in, but also the priorities of policy makers on the local and central levels of government. In this instance, several interview partners pointed out that the correct interpretation of leadership priorities are an essential basis for strategic decisions in China and a capability which TNCs need to spend resources to develop. The geopolitical dimension is a factor that latently influences decision-making processes on all levels: Reducing dependence from oil imports amidst continuous growth of a motorized vehicle stock is a major motivation of developing the market for electric vehicles in the first place. Also, different aspects of specific geopolitical situations influence bargaining processes, such as the intervention of the German government in order to delay the introduction of the NEV-credit system, or the relatively favorable conditions under which Tesla could establish a factory in Shanghai. In some cases (as indicated by the battery "white list"), the Chinese government penalizes foreign companies for political actions of the governments of their home countries. The geopolitical context is a relevant factor for micro- and macro-level bargaining processes in a

sector as globalized as the automotive industry and has been rightfully pointed out as being somewhat underrepresented in related research on GPN (Coe & Yeung, 2019; Glassman, 2011).

## 10 | CONCLUSION

This study attempted to explain the evolution of NEV production networks in China by focusing on multilevel bargaining processes and the organizational results they produce. The example of the NEV industry illustrates China's ability to create production networks for a new, globally relevant sector in which Chinese firms cover major parts of the market and value creation. Could other emerging economies like Brazil, Mexico, or Eastern Europe follow suit and pursue similar development strategies?

This is unlikely because none of them feature China's combination of concentrated institutional power, market size and presence of domestic technology companies: Most emerging countries are dependent on investments of TNCs to develop production structures for traditional and electric vehicles. They feature neither domestic vehicle assemblers for high volumes nor domestic battery manufacturers, and therefore, lack the basis to develop technologically independent NEV-sectors. Eastern European countries like Poland, Hungary, and Czechia have all developed sizable capacities in the automotive sector based on international investments (Domański, Guzik, Gwosdz, & Dej, 2013; Lutsey et al., 2018; Pavlínek & Ženka, 2016). They also establish capacities for electric vehicles (such as battery factories by LG-Chem and Samsung) and feature startups which attempt to develop electric vehicles under their own brand. However, given their dependence on foreign capital and expertise, their policies regarding electric vehicles mainly focus on attracting FDI through tax exemptions, grants, and subsidies (Lutsey et al., 2018).

China is a highly relevant, but somewhat unique example in the way how its government stakeholders shape production networks. However, elements of the institutional context which apply to China, such as one-party rule, a dominant executive, high informality of decision-making processes, and relatively weak judiciary do apply in varying degrees to other economies as well (Vietnam being one plausible example from Asia, see also Thomson, 2007). Arguably, formal and informal bargaining processes between state actors and firms are critical factors in explaining the way how production networks evolve in such contexts. This point concurs with frequent criticism that asserts the GPN-approach to be too centered on the actions of lead firms.

The value in the typologies of power outlined by Dallas et al. (2017) for this study lies in its categorization of distinguishable expressions of power which emerge in different bargaining scenarios and institutional contexts. While Dallas et al. thought of those categories primarily as an evolution of predominant types of power-relationships which one value chain goes through as it develops (Dallas et al., 2017), it is also clear that different actor constellations and power transmission mechanisms occur simultaneously. The example of China illustrates that decisions impacting the evolution of a GPN can be explained with the attributes (such as power balances and institutional context) of the bargaining processes that precede them.

In this instance, this paper argues that the independent determinants of how production networks evolve in terms of localities and inter-firm linkages is first and foremost a question of the institutional environments they operate in. This ultimately determines the degree to which the capitalist dynamics outlined by Coe and Yeung (2015) can (or cannot) unfold their transformative potential.

This article offered insights from three decision-making processes on questions which affect the evolution of GPNs, namely the choice of product-portfolio, choice of suppliers, and conditions of market entry. Viewing the evolution of inter-firm linkages and localization of value-added activity as the result of a dynamic myriad of permanently ongoing bargaining processes, the cases presented here



cannot claim to be representative. However, individual empirical findings of this study are, in general, consistent with other contributions on the topic such as Kennedy (2018), Yeung (2018), or Teece (2019). Nevertheless, empirical validation of the main conclusions of this article would be beneficial, as well as a comparison of mutual influences in policy making and sector-specific outcomes for other branches defined as “strategic emerging industries.” Evaluating bargaining processes between Chinese and foreign stakeholders is relevant and worthwhile, but due to its intransparent and partly sensitive nature, also a challenging endeavor.

## ACKNOWLEDGMENTS

I sincerely thank Markus Hassler for his valuable advice and continuous support. A draft of this study was presented at the 15th Symposium of Economic Geography in Rauischholzhausen (Germany). I thank all conference participants for providing constructive and valuable feedback. Furthermore, I thank all interview partners. This study would not have been possible without their contribution.

## ORCID

Julian Schwabe  <https://orcid.org/0000-0001-5999-0588>

## REFERENCES

- Allen, J. (2003). *Lost geographies or power*. Malden, MA: John Wiley & Sons.
- China Association of Automobile Manufacturers (CAAM). (2019, October 16). *NEVs declined yearly*. Retrieved from [http://www.caam.org.cn/chn/21/cate\\_463/con\\_5226712.html](http://www.caam.org.cn/chn/21/cate_463/con_5226712.html)
- Chyxx.com. (2018, January 6). *China vehicle sales and market demand analysis 2017*. Retrieved from <http://www.chyxx.com/industry/201801/600701.html> (in Chinese)
- Chyxx.com. (2019, February 1). *New Energy Vehicles sustain high growth in production in 2018, sales, imports and exports grow year on year, New Energy Vehicles gradually take market lead*. Retrieved from <http://www.chyxx.com/industry/201902/711984.html> (in Chinese)
- Coe, N., & Yeung, H.-W.-C. (2015). *Global production networks theorizing economic development in an interconnected world*. Oxford, UK: Oxford University Press.
- Coe, N., & Yeung, H.-W.-C. (2019). Global production networks: Mapping recent conceptual developments. *Journal of Economic Geography*, 19(2019), 775–801. <https://doi.org/10.1093/jeg/lbz018>
- Dallas, M., Ponte, S., & Sturgeon, T. (2017). *A typology of power in global value chains* (Working Paper in Business and Politics No. 92). Frederiksberg, Denmark: Copenhagen Business School.
- Deng, G., & Kennedy, S. (2010). Big business and industry association lobbying in China: The paradox of contrasting styles. *The China Journal*, 63(63), 101–125. <https://doi.org/10.1086/tcj.63.20749196>
- Depner, H., & Bathelt, H. (2005). Exporting the German model: The establishment of a new automobile industry cluster in Shanghai. *Economic Geography*, 81(1), 53–81. <https://doi.org/10.1111/j.1944-8287.2005.tb00255.x>
- Dicken, P. (2015). *Global shift*. London, UK: Sage Publications.
- Domański, B., Guzik, R., Gwosdz, K., & Dej, M. (2013). The crisis and beyond: The dynamics and restructuring of automotive industry in Poland. *International Journal of Automotive Technology and Management*, 13(2), 151–166.
- European Union Chamber of Commerce in China (EUCCC). (2017). *China manufacturing 2025 - Putting industrial policy ahead of market forces*. Retrieved from <https://www.europeanchamber.com.cn/en/china-manufacturing-2025>
- Expert Commission for the Construction of a Manufacturing Superpower. (2015, September 29). “*Made in China 2025*” key area technology roadmap. Retrieved from <http://www.cae.cn/cae/html/files/2015-10/29/20151029105822561730637.pdf> (in Chinese)
- Gaogong Lidian. (2019, January 14). *Top twenty producers of rectangular, soft pack- and cylindrical batteries installed in new energy vehicles by 2018*. Retrieved from <http://www.gg-lb.com/asdisp2-65b095fb-35973-.html> (in Chinese)
- Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy*, 12(1), 78–104. <https://doi.org/10.1080/09692290500049805>

- Gesellschaft für Internationale Zusammenarbeit (GIZ). (2018). *The E-mobility race and China's determination to win*. Retrieved from <http://www.sustainabletransport.org/wp-content/uploads/2018/09/Report-on-Measures-by-the-Chinese-Government-to-Promote-Electro-Mobility.pdf>
- Glassman, J. (2011). The geo-political economy of global production networks. *Geography Compass*, 5(4), 154–164. <https://doi.org/10.1111/j.1749-8198.2011.00416.x>
- Henderson, J., Dicken, P., Hess, M., Coe, N., & Yeung, H.-W.-C. (2002). Global production networks and the analysis of economic development. *Review of International Political Economy*, 9(3), 436–464. <https://doi.org/10.1080/09692290210150842>
- Hess, M. (2008). Governance, value chains and networks: An afterword. *Economy and Society*, 37(3), 452–459.
- International Council on Clean Transportation (ICCT). (2018). *China's new energy vehicle mandate policy (final rule)*. Retrieved from [https://www.theicct.org/sites/default/files/publications/ICCT\\_China-NEV-mandate\\_policy-update\\_20180111.pdf](https://www.theicct.org/sites/default/files/publications/ICCT_China-NEV-mandate_policy-update_20180111.pdf)
- International Energy Agency (IEA). (2018). *Global EV-Outlook 2017*. Retrieved from <https://www.iea.org/reports/global-ev-outlook-2017>
- International Organization of Motor Vehicle Manufacturers (OICA). (2017). *Personal registrations or sales of new vehicles - All types*. Retrieved from <http://www.oica.net/wp-content/uploads/Sales-all-vehicles-2017.pdf>
- Kennedy, S. (2018). *China's risky drive into new-energy vehicles*. Washington, DC: Center for Strategic & International Studies, China Innovation and Policy Series.
- Ling, C., & Naughton, B. (2016). An institutionalized policy-making mechanism: China's techno-industrial policy. *Research Policy*, 45(2016), 2138–2152. <https://doi.org/10.1016/j.respol.2016.09.014>
- Liu, W., & Dicken, P. (2006). Transnational corporations and 'obligated embeddedness': Foreign direct investment in China's automobile industry. *Environment and Planning A: Economy and Space*, 38(7), 1229–1247. <https://doi.org/10.1068/a37206>
- Lutsey, N., Grant, M., Wappelhorst, S., & Zhou, H. (2018). *Power play: How governments are spurring the electric vehicle industry*. International Council on Clean Transportation White Paper May 2018. Retrieved from [https://theicct.org/sites/default/files/publications/EV\\_Government\\_WhitePaper\\_20180514.pdf](https://theicct.org/sites/default/files/publications/EV_Government_WhitePaper_20180514.pdf)
- Ministry of Industry and Information Technology (MIIT). (2019, June 26). *Ministry of Industry and Information Technology announcement no. 22, 2019*. Retrieved from [http://www.gov.cn/xinwen/2019-06/24/content\\_5402761.htm](http://www.gov.cn/xinwen/2019-06/24/content_5402761.htm) (in Chinese)
- Ministry of Industry and Information Technology (MIIT), National Development and Reform Commission (NDRC) and Ministry of Science and Technology (MOST). (2017, April 6). *Notice on printing and adopting the 'medium and long-term development plan for automobiles'*. Retrieved from <http://miit.gov.cn/n1146295/n1146562/n1146650/c5600446/content.html> (in Chinese)
- National Development and Reform Commission of the People's Republic of China (NDRC). (2018, June 30). *Special management regulation of foreign investments 2018*. Retrieved from <http://www.ndrc.gov.cn/zcfb/zcfbl/201806/W020180628640822720353.pdf> (in Chinese)
- Naughton, B. (2017). Is China socialist? *Journal of Economic Perspectives*, 31(1), 3–24. <https://doi.org/10.1257/jep.31.1.3>
- Neilson, J., Pritchard, B., Fold, N., Dwiartama, A. (2018). Lead firms in the cocoa-chocolate global production network: An assessment of the deductive capabilities of GPN 2.0. *Economic Geography*, 94, (4), 400–424. <http://dx.doi.org/10.1080/00130095.2018.1426989>
- Nolan, P. (2014). Globalisation and industrial policy: The case of China. *The World Economy*, 37(6), 747–764. <https://doi.org/10.1111/twec.12197>
- Pavlínek, P., & Ženka, J. (2016). Value creation and value capture in the automotive industry: Empirical evidence from Czechia. *Environment and Planning A*, 48(5), 937–959.
- Peck, J., & Zhang, J. (2013). A variety of capitalism ... with Chinese characteristics? *Journal of Economic Geography*, 13(3), 357–396. <https://doi.org/10.1093/jeg/lbs058>
- Peng, M. W., Wang, D. Y. L., & Jiang, Y. (2008). An institution-based view of international business strategy: A focus on emerging economies. *Journal of International Business Studies*, 39(5), 920–936. <https://doi.org/10.1057/palgrave.jibs.8400377>
- Robins, F. (2010). China: A new kind of 'mixed' economy? *Asian Business & Management*, 9(1), 23–46. <https://doi.org/10.1057/abm.2009.21>

- Sohu. (2017, July 20). *Analysis of the automotive supplier industry in China 2017*. Retrieved from [http://www.sohu.com/a/158556717\\_662308](http://www.sohu.com/a/158556717_662308) (in Chinese)
- Smith, A. (2015). The state, institutional frameworks and the dynamics of capital in global production networks. *Progress in Human Geography*, 39, (3), 290–315. <http://dx.doi.org/10.1177/0309132513518292>
- Sturgeon, T. J., & Van Biesenbroeck, J. (2011). Global value chains in the automotive industry: An enhanced role for developing countries? *International Journal of Technological Learning, Innovation and Development*, 4(1), 181–205.
- Teece, D. J. (2019). China and the reshaping of the auto industry: A dynamic capabilities perspective. *Management and Organization Review*, 15(1), 177–199. <https://doi.org/10.1017/mor.2019.4>
- Tesla Inc. (2019, February 19). *Annual report on form 10-K for the year ended December 31, 2018*. Retrieved from <https://tesla.gcs-web.com/static-files/0ff834d7-dd3b-4d69-81a1-a4246a7b5736>
- Tesla Inc. (2020, February 13). *Annual report on form 10-K for the year ended December 31, 2019*. Retrieved from <https://tesla.gcs-web.com/static-files/07bfc70-aba1-4a27-af09-4f101678320c>
- Thomson, L. (2007). Accessing global value chains? The role of business–state relations in the private clothing industry in Vietnam. *Journal of Economic Geography*, 7, 753–776. <https://doi.org/10.1093/jeg/lbm028>
- Van Aken, T. (2013). Making the grade: Performance targets and industrial energy policy. In China Environment Forum (Ed.), *China Environment Series 12. Special Water and Energy Issue* (pp. 121–128). Washington, DC: Woodrow Wilson International Center for Scholars.
- Van Aken, T., & Lewis, O. A. (2014). The political economy of noncompliance in China: The case of industrial energy policy. *Journal of Contemporary China*, 24(95), 798–822. <https://doi.org/10.1080/10670564.2015.1013374>
- Werner, M. (2017). Review of global production networks. *Journal of World Systems Research*, 23(2), 765–768. <https://doi.org/10.5195/JWSR.2017.745>
- Wübbecke, J., Meissner, M., Zenglein, M. J., Ives, J., & Conrad, B. (2016, December 8). *Made in China 2025 the making of a Hightech superpower and consequences for industrial countries*. Mercator Institute for China Studies. Retrieved from <https://www.merics.org/en/papers-on-china/made-china-2025>
- Wuttke, J. (2017). The dark side of China's economic rise. *Global Policy*, 8, 62–70. <https://doi.org/10.1111/1758-5899.1243>
- Yeung, G. (2018). 'Made in China 2025': The development of a new energy vehicle industry in China. *Area Development and Policy*, 4(1), 39–59. <https://doi.org/10.1080/23792949.2018.1505433>

## AUTHOR BIOGRAPHY

**Julian Schwabe** is a post-doc researcher at the Working Group on Regional Studies at the Department of Geography, University of Marburg. His main research interest includes the interplay of actor strategies and institutional constraints on topics such as Chinese environmental policy, development of the Chinese automotive industry and renewable energy development in rural areas in the EU.

**How to cite this article:** Schwabe J. From “obligated embeddedness” to “obligated Chineseness”? Bargaining processes and evolution of international automotive firms in China's New Energy Vehicle sector. *Growth and Change*. 2020;51:1102–1123.

<https://doi.org/10.1111/grow.12393>