

The revival of industrial policy

A study of Made in China 2025 & Make in India



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Abstract

This thesis is a comparative case-study and investigates China and India's industrial policy strategies "Made in China 2025" and "Make in India" in the context of the recent revival of industrial policy. In particular, it explores the strategies' objectives, the policy instruments and the role of the state. The thesis addresses the similarities and differences between MIC2025 and MII and has a special focus on the auto industry. It is argued, that MIC2025 and MII have a similar focus on the manufacturing sector but differ in their approach to it. However, in the auto industry, China and India's strategies share more resemblances. Both strategies exemplify how industrial policy has become more complex and the thesis, therefore, contributes to an understanding of what characterises industrial policy today in emerging economies.

Keywords: Industrial Policy, China, India, Made in China 2025, Make in India, Manufacturing Sector, Auto Industry.

Resumé

Dette speciale er et komparativt studie af Kina og Indiens nyligt annoncerede industrielle politikker, “Made in China 2025” og “Make in India”. Dette er med udgangspunkt i en forståelse af, at industriel politik har genvundet interesse og er forandret. I kapitel 2 gennemgås industriel politik som begreb og hvilke tilgange til industriel politik der findes i litteraturen. Litteraturgennemgangen viser, at der er behov for at anskue industriel politik empirisk. På baggrund af litteraturgennemgangen fremstilles i kapitel 3 begrebsrammen, som i specialet anvendes til at analysere MIC2025 og MII. Begrebsrammen, der anvendes i analysen af MIC2025 og MII, fokuserer på at identificere og kategorisere strategierne på baggrund af deres målsætninger, politiske instrumenter og statens rolle.

I kapitel 4 gennemgås den metodiske tilgang der anvendes i analysen og som er inspireret af dokumentanalyse. Specialets metodiske overvejelser angående valg af cases og metode uddybes her.

I kapitel 5 præsenteres en historisk gennemgang af, hvordan industriel politik har fulgt liberaliseringsreformerne i henholdsvis Kina og Indien med et særligt fokus på automobilindustrien. Dette følges af en litteraturgennemgang af, hvordan tidligere studier har analyseret og forstået industriel politik i Kina og Indien. Litteraturgennemgangen viser, at industriel politik har haft en afgørende og overvejende positiv betydning i Kina og Indien.

I kapitel 6 analyseres MIC2025 and MII med udgangspunkt i, hvilke målsætninger strategierne har, hvilke politiske instrumenter der anvendes, samt hvilken rolle staten spiller i styringen af de to strategier. Resultatet viser, at Kinas industrielle politik i højere grad baserer sig på en regulerende, selektiv tilgang, mens Indiens tilgang i højere grad er faciliterende og horisontal. I kapitel 7 sammenlignes resultaterne af analysen af MIC2025 og MII. Sammenligningen viser, at strategierne deler et fokus på fremstillingssektoren, men at landenes tilgang til at fremme udviklingen i sektoren er forskellig. Herunder viser sammenligningen, at et fokus på fremstillingssektoren er et udtryk for en generel tendens i industriel politik i dag. Endvidere viser sammenligningen, at begge strategier fokuserer på en mere bæredygtig og inkluderende udvikling. Afslutningsvis viser sammenligningen, at der ikke kan udledes noget generelt om de instrumenter der anvendes i MIC2025 og MII, udover at de er blevet mere komplekse og opererer inden for flere politikområder.

Specialet bidrager til en øget forståelse af industriel politik i dag, omend specialet også viser, at der er behov for flere empiriske studier til at forstå den kompleksitet, der omgiver feltet og for at kunne udvikle en forståelse, der er mere tilsvarende til de tendenser, vi ser i dag.

Nøgleord: Industriel politik, Kina, Indien, Made in China 2025, Make in India, automobilindustrien, fremstillingssektoren

Table of content

Abbreviations & clarification of concepts	6
1. Introduction	7
1.1. Research question and sub-questions	10
2. The evolution of industrial policy - A review of the field	12
2.1 Horizontal vs. vertical industrial policy	13
2.2 The early phase of industrial policy: Infant industry protection	14
2.3 The revival of industrial policy	16
2.4 Sub-conclusion	18
3. Conceptual framework	19
3.1 Definition of industrial policy	19
3.2 Comparative advantage conforming or defying?	21
3.3 Policy instruments in industrial policy	22
3.4 The role of the state	23
4. Research design	25
4.1 Comparative method and case selection	25
4.2 Analysis strategy	27
4.3 Data	28
4.4 Scope of the thesis	29
5. China and India's economic reforms - Towards a market economy	31
5.1 India's reforms	31
5.1.1 The evolution of India's auto industry	33
5.2 China's reforms	34
5.2.1 The evolution of China's auto industry	35
6. China and India's industrial policies - A review	37
6.1 Industrial policy in India	38
6.2 Industrial policy in China	41
6.3 Sub-conclusion	44
7. Industrial policy for Industrial upgrading: An analysis of Make in India and Made in China 2025	46
7.1 Make in India: Becoming a manufacturing hub	46
7.1.1 Minimum government, maximum governance	49
7.1.2 Policy instruments	50
7.1.2.1 Ease of doing business	51
7.1.2.2 Infrastructure creation	53

7.1.2.3 FDI reforms	56
7.1.2.4 Protection of intellectual property rights	58
7.1.2.5 Skill development	58
7.1.3 The automobile and the auto-component industry	60
7.1.4 Sub-conclusion	64
7.2 Made in China 2025: Becoming a manufacturing superpower	66
7.2.1 The auto industry and the promotion of New Energy Vehicles	69
7.2.2 Policy instruments	71
7.2.2.1 Government subsidies	72
7.2.2.2 Government procurement	75
7.2.2.3 Research and Development	75
7.2.2.4 FDI through joint ventures	79
7.2.2.5 A more decisive role for the market? The continued role of SOEs	82
7.2.3 Sub-conclusion	85
8. Made in China 2025 and Make in India compared	87
8.1 New objectives in Industrial Policy: Sustainability and inclusive growth	89
8.2 Policy instruments	92
8.3 The role of the state in China and India's industrial policies	95
8.4 Sub-conclusion	97
9. Conclusion	99
Bibliography	102

Abbreviations & clarification of concepts

AMP	Automotive Mission Plan
BJP	Bharatiya Janata Party
DPITT	The Department for Promotion of Industry and Internal Trade
DMIC	Delhi-Mumbai Industrial Corridor
EoDB	Ease of Doing Business
FAME	Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GST	Goods and Services Tax
IMF	International Monetary Fund
JVs	Joint Ventures
MIC2025	Made in China 2025
MII	Make in India
NATRiP	National Automotive Testing and R&D Infrastructure Project
NEMMP	National Electric Mobility Mission Plan
NEVs	New Energy Vehicles
ODI	Outbound Direct Investment
OEMs	Original Equipment Manufacturers
R&D	Research and Development
SEZs	Special Economic Zones
SOEs	State-Owned Enterprises
WB	World Bank
WTO	World Trade Organisation

Auto industry

The term “auto industry” refers to the automobile and the auto component industry. In addition, the automobile industry refers to OEMs consisting of passenger cars, commercial vehicles, three-wheelers and two-wheelers.

1. Introduction

Authors: Cecilie & Katrine

China and India's rise are unprecedented in speed and breadth. Their rise and performance as emerging economies have changed global economic dynamics and strengthened China and India's position to influence and shape developments in the world. Today, China and India are among the main drivers of global economic growth. In 2018, China ranked as the second largest economy in terms of GDP, only surpassed by the US, and India ranked as the seventh largest economy in the world (WEF 2018). China and India are projected to continue their growth rates in 2019, as India's GDP is expected to grow with 7.4 per cent and China's GDP growth, despite a slowdown, is expected to be around 6.2 per cent (IMF 2018). How China and India develop will have repercussions and implications for the global system and the rest of the world. China has already pressured the global system through its enormous economic power and it is likely that India will be putting pressure on the system in the same way China has already done (Dahlman 2012:209).

The rise of China and India has, therefore, received great scholarly attention both because of the rate in which they have grown but also because their development has challenged the Washington Consensus. By having followed different developmental paths, China and India each exemplify countries that have been able to overcome some of the challenges that many developing countries are still struggling with by participating and thus taking advantage of the opportunities provided in the global economic system (Dahlman 2009, 2012). Their development paths have thus made them interesting in the field of comparative studies as they exemplify cases of gradual liberalisation and reforms but also differ in many other aspects.

China's opening up of its economy in the late 1970s stimulated the development of manufacturing activities with export potential in which China enjoyed a comparative advantage given its cheap labour force. China became the largest exporter of cheap manufacturing products which characterised China as 'the world's factory'. Since the 1980s,

the manufacturing sector has consistently been one of the principal sources of growth followed by the service sector (Yusuf & Nabeshima 2010). In contrast, it was a boom in India's exports of services that served as the catalyst for its economic growth and characterised India as the world's 'back office' due to its technological achievements. India's manufacturing sector has, however, remained weak especially compared to China's (Yusuf & Nabeshima 2010; Felipe et al. 2013a). In China, the sector has consistently accounted for about half of GDP, whereas in India it has remained under 30 per cent of GDP (Bosworth & Collins 2008).

There exists a consensus around the fact that China and India's economic development has been shaped by their economic reforms that have contained a gradual marketisation and liberalisation of their economies. However, the two countries have also promoted a number of industrial policy strategies that have affected the development of sectors and industries through strategic steering of the economy by the governments (Dahlman 2009). Industrial policy contains different objectives and instruments but has traditionally been connected to the protection of domestic industries. Both China and India have actively employed several protectionist policy instruments and have, therefore, challenged neoclassical assumptions and adherents of the Washington Consensus. While the Washington Consensus has dominated economic thinking since the 1980s, the financial crisis of 2008 reduced the dominance of these assumptions and industrial policy saw a revival (Stiglitz et al. 2013). The revival has done away with a lot of the scepticism surrounding industrial policy and has at the same time revealed that industrial policy has become more complex and diverse. Industrial policy today contains policy instruments that go beyond traditional instruments of protecting domestic industries and entail more comprehensive objectives than mere growth. The new focus on industrial policy globally has revealed that more countries than ever are engaging actively with industrial policy. A survey conducted by UNCTAD (2018) shows, that during the past five years, 84 countries, accounting for 90 per cent of global GDP, have adopted formal industrial policy strategies (UNCTAD 2018:128). The new emphasis on industrial policy has further initiated debates about the role of the state in steering and interfering with the market and some observers have suggested that the financial crisis marked "the return of the state" (Szalavetz 2015). The state's new legitimacy in steering the economy poses the question of

what role it should play. In this environment, it has become increasingly important to understand industrial policy and how states conduct it.

Within the recent revival of industrial policy, China and India have each launched industrial policy strategies to accommodate their challenges in order to steer the economic structure and sustain economic growth. India's Prime Minister Narendra Modi, who came into power in 2014 promising economic reforms, launched "Make in India" (MII) in September 2014. The strategy is devised to transform India into a *manufacturing hub* and is part of a wider national plan of a massive reform programme that is a response to one of the main challenges in India, namely fighting unemployment (MII 2014). Not long after the MII strategy was announced, the Chinese government announced "Made in China 2025" (MIC2025) in May 2015 under President Xi Jinping. The strategy aims to transform the country's manufacturing sector and upgrade China from a manufacturer of quantity to one of quality (Lucas & Feng 2017). The MIC2025 strategy is one of China's most ambitious industrial policies to date and the goal for the first ten years is to become a *manufacturing superpower* by dominating high-tech industries and becoming self-sufficient in key industries (MIC2025 2015).

Especially the launch of MIC2025 has caused worldwide reactions and concerns. When Xi took power in 2013 the future perspective of China was shaped by a positive view on China's efforts to adapt to the international society. However, it has become apparent that Xi has tightened his grip on power and is asserting China as a superpower with nationalistic policy aims. The MIC2025 clearly represents this shift and has left the rest of the world worried about China's intention. Some observers have argued, that the release of MIC2025 is what provoked the current trade war between China and the US (McBride & Chatzky 2019). This underlines how industrial policies have repercussions outside national borders. Likewise MII has attracted attention as India's economy surpassed China's economy in terms of growth rate and became the world's fastest growing economy with an annual growth rate of 7.2 per cent in the final quarter of 2017 (Stacey 2018), unveiling the growing debate on whether the Indian economy will become bigger than China's in the near future. The Modi-government's effort to reform the country through a wide-ranging reform programme has received great attention since the party took office in 2014 promising to revive India's stalled economy. The

massive reform agenda in India is watched closely as the world awaits the results. Furthermore, India is the world's biggest democracy and forecasted soon to be the most populous country in the world which have also added to the attention to Modi's reform programme. If Modi succeeds, India can soon be on a fast-track growth spree.

This thesis will serve to provide an understanding of how industrial policy is conducted today by the two major economic powers China and India, as the world experiences a revival of industrial policy. Understanding the conduction of industrial policy gives an understanding of how states today structure and steer their economies in an ever-changing global environment. Therefore, the objective of this paper is to provide an assessment and comparison of MIC2025 and MII by addressing the objectives and policy instruments entailed in each strategy with a focus on the role of the state.

1.1. Research question and sub-questions

Authors: Cecilie & Katrine

What characterise Made in China 2025 and Make in India and how can we understand the strategies in the context of the recent revival of industrial policy?

- 1) What are the objectives of MIC2025 and MII, what policy instruments do they employ to obtain the objectives, and what is the role of the state?
- 2) How do MIC2025 and MII emphasise the auto industry and what are the implications of MIC2025 and MII in China and India's auto industries?
- 3) What are the similarities and differences between MIC2025 and MII and how do they reflect industrial policy today?

The thesis is structured as follows; first, in order to understand what industrial policy is, how it is conducted and how it has been approached by academia, there is a review of literature pertaining to the field of industrial policy. Second, we present the thesis' conceptual

framework. Third the research design is presented. Fourth, there is a brief overlook of China and India's development paths and their industrial policies with special attention to the auto industry. Hereafter, an analysis of MIC2025 and MII will be made with a special emphasis on the strategies' objectives, policy instruments and the role of the state. This is followed by a comparison of the results from the analysis of MIC2025 and MII. Lastly, there is a conclusion.

2. The evolution of industrial policy - A review of the field

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This section serves the purpose of presenting the debates there exist within the field of industrial policy and how the field has developed from a narrow understanding of what industrial policy includes towards a broader, more complex understanding of the concept.

Central for the debates that surround industrial policy is what role the state should have in conducting industrial policy. Debates about the proper role of the state in promoting economic growth through industrial policy have their origin in the field of political economy. Arguments about the appropriate role of the state in respect to the market have been unfolding and advanced throughout history as new experiences challenged old assumptions. A prevalent school of thought has been the Neoclassical school. Its scepticism of government intervention rests on strong assumptions about market efficiency. The Neoclassical school argues, that government intervention will prevent the market from working towards equilibrium. In contrast, adherents of government interventions, deriving mostly from the Keynesian school of thought, stress the imperfections of the market and, therefore, a strong need for regulation to restrict market failures (Stiglitz et al. 2006).

Neoclassical assumptions are constructed around an ideological assault on state intervention, known as the Washington Consensus, that dominated economic development thinking from the 1980s and until the recent financial crisis. In this environment, critique of industrial policy was prominent. The financial crisis, however, refueled the argument in favour of government intervention and marked a turning point and a shift away from the neoclassical assumption that the promotion of market-based strategies leads to more efficient outcomes. The financial crisis highlighted, that government intervention was necessary to correct market-failures and prevent collapse of the economies (Stiglitz et al. 2013). Industrial policy experienced a revival in both academia and in policy circles and a number of different economic views have fed into the recent resurgence and reshaping of discussions on

industrial policy (Chang & Andreoni 2016). While the newer approaches differ in their analysis of the rationale and scope of industrial policy, they form a common ground around the idea that governments should play a proactive role in a country's development process (Salazar-Xirinachs et al. 2014).

Based on historical and empirical evidence in countries at all levels of development, industrial policy is now generally acknowledged as a necessary driver of economic development and, therefore, the state is recognised as a central actor (Stiglitz et al. 2013; Noman & Stiglitz 2016). The discussion within the field of industrial policy has therefore changed from one that discusses *if* governments should engage in industrial policy to one that is concerned with *how* to best conduct industrial policy (UNCTAD 2018; Salazar-Xirinachs et al. 2014; Stiglitz et al. 2013; Rodrik 2009; Chang & Andreoni 2016).

Therefore, the following section will not cover debates about whether or not industrial policy should be applied, but rather review some of the remaining disagreements among the observers of industrial policy on *how* to conduct industrial policy.

2.1 Horizontal vs. vertical industrial policy

Industrial policy as concept is contested and there does not exist any agreed upon definition of the term. The broader definitions of industrial policy state, that all government policies directed at affecting industries are industrial policy. However, most scholars view industrial policy in less broad terms to include more selective or targeting policies directed at specific industries. The contestation around how to conduct industrial policy is broadly related to a debate about vertical vs. horizontal policies (Andreoni & Chang 2016:4f). Whereas vertical industrial policy instruments are devised to support and target specific industries, horizontal instruments do not favour some industries at the expense of others and are thus presumed to be neutral across industries and sectors. However, the choice between applying vertical or horizontal industrial policy instruments is by some argued to be misguided as even the most general policy instruments, such as those directed at education and infrastructure development, favour some industries or sectors over others and thus also have discriminatory effects (Andreoni 2016; Andreoni & Chang 2016; Stiglitz et al. 2013).

The discussion of targeting specific industries has also come to be a central element in defining industrial policy. A large group in the field of industrial policy define industrial policy as targeted policies. Such policies favour particular industries over others to enhance the efficiency and promote growth for the targeted industries as well as for the whole economy (Andreoni & Chang 2016; Pack & Saggi 2006; Lo & Wu 2014; Salazar-Xirinachs et al. 2014; Lin & Monga 2012). This definition is more narrow than to say that all policies that have an effect on industries are to be seen as industrial policies.

In stating that targeting is unavoidable and thus a central characteristic of industrial policy, it has been argued there are different degrees of targeting. The more precisely targeted an industrial policy strategy is, the more likely is it to succeed because less precise policies are more difficult to monitor and thus have more unintended consequences (Andreoni & Chang 2016; Chang 2010). One of the earliest arguments for industrial policy relates to the protection of infant industries and is linked to the debate on whether industrial policy should target specific industries. The next section elaborates on this.

2.2 The early phase of industrial policy: Infant industry protection

The argument of infant industry protection is related to the understanding that to develop productive capabilities, industries require first of all protection. In order for domestic emerging infant industries to become mature and stable they need some kind of temporary protection from well-established foreign industries. An infant industry is thus regarded as an industry in its early stages of development which is not yet able to compete with foreign competitors. The argument for protecting infant industries is based on the idea, that some industries have not unleashed their full potential (Chang & Andreoni 2016).

An even stronger argument in favour of protection is found along the argumentation in favour of protection of industries where a country has a comparative advantage. The argument is, that if a government supports the development of an industry wherein it has a comparative

advantage it might have the most efficient outcome. Some go even further and argue, that having a natural comparative advantage is a prerequisite for a protection policy to be successful. This argument is linked to the assumption that comparative advantages are given rather than made (Pack & Saggi 2006).

Thereby industrial policy, in the form of infant industry protection, became increasingly engaged with targeting the “right” sectors and “picking winners”. This revealed a critique of industrial policy as the focus on picking winners gave rise to the fear of “picking losers”, as the state does not have the ability to identify the industries wherein a country has a comparative advantage. Therefore, protectionist policies risk removing the natural advantage of the market and impede innovation. Baldwin (1969) was one of the first to articulate this critique. Baldwin states, that protection does not necessarily lead to maturation of the infant, if protection fails to provide the right incentives to invest in acquiring more advanced technologies. Thus, Baldwin questions the effectiveness of trade protection as one cannot be sure that protection in the form of e.g. a temporary tariff necessarily will increase production efficiency. Similar arguments are also reflected by more recent scholars such as Brandt & Thun (2016). They argue, that protection of industries, through for example high tariffs and entry-control, will impede competitiveness. Industries thrive with increased competition, as it will boost innovation. Therefore, protectionist policies risk *“knock[ing] the rung out of the development ladder.”* (Brandt & Thun 2016:91).

To sum up, the core argument of infant industry protection has been criticised for having certain shortcomings as it assumes there is a level of full information where the government is able to identify the “winner-industries” and further where the market-forces ensure an efficient allocation of productive resources into these industries. Therefore, more nuanced versions have developed along the argument of infant industry protection which seek to incorporate issues of information and coordination constraints. In broad, there is a recognition that the government simply lacks information about which industries a country has a (potential/latent) comparative advantage in and scholars have thus sought to provide strategies to overcome this issue. The next section will elaborate on this.

2.3 The revival of industrial policy

Since the mid-00s, industrial policy has increasingly been recognised by scholars deriving from the Neoclassical school of thought which has traditionally dismissed industrial policy. Prominent scholars such as Justin Lin (2012) and Dani Rodrik (2004, 2009) have advanced arguments in favour of industrial policy inspired by Neoclassical assumptions. These scholars suggest different approaches to conduct industrial policy, wherein both the market and the state are attached an important role. Another group of scholars, exemplified here by Ha-Joon Chang & Antonio Andreoni (2016), suggest that the state has the biggest role to play.

Rodrik provides an advancement of the infant industry argument and addresses some of the informational constraints that exist in order to identify industries to be subjected to industrial policy. Rodrik argues, that governments should ensure that industrial policy instruments favour those activities that otherwise suffer from market imperfections (Rodrik 2009). In other words, industrial policy activities should be concerned with alleviating market imperfections. The role of industrial policy is to “reinforce” or “counteract” the allocative effects that free market forces would otherwise produce. Rodrik (2004) seeks to develop a framework for conducting industrial policy that maximises its potential to contribute to economic growth and at the same time minimises the costs. In this regard, he stresses the importance of a “strategic collaboration” between the private sector and the government for industrial policy to be successful (Rodrik 2009). Industrial policy activities should develop from a strong collaboration between the government and the private sector rather than from a list of policy instruments. In relation to this, Rodrik argues, that a country’s choice of industrial policy instruments emerges from the *process* and writes: “*Industrial policy should not be thought of as a generic range of incentive programs. It is instead a process designed to elicit areas where policy actions are most likely to make a difference.*” (Rodrik 2004). Thereby, industrial policy is seen as a process of economic “self-discovery” where the outcome is merely impossible to specify (Rodrik 2004, 2009).

Justin Lin's approach to industrial policy is termed New Structural Economics (NSE) and builds on both Neoclassical as well as Structuralist assumptions. The approach suggests, that successful industrial policy should target industries where a country has a "latent" comparative advantage and support the industries' growth. Latent comparative advantage refers to a certain industry in the economy in which a country has a comparative advantage that is not yet realised due to, for example, lack of infrastructure or difficulties in doing business. The state's role is, therefore, to facilitate hard and soft infrastructure to private enterprises in order to exploit one's comparative advantage. The state's role is thus limited to being a facilitator, while the market should allocate the resources (Lin 2012; Lin & Monga 2012).

Together Rodrik and Lin advocate in favour of a more experimental industrial policy. This is reflected in Rodrik's approach to "self-discovery" and in Lin's approach to identifying "latent" comparative advantages. Both approaches thus serve to guard against the risk of picking losers by providing means to overcome issues of information and coordination constraints. Thereby, a central purpose of industrial policy is to diversify the economic activities and remove obstacles for realising a country's comparative advantage.

Further there are scholars, here exemplified by Chang (2010) and Chang & Andreoni (2016), who argue that the state is central to economic development and therefore should have an even bigger role in industrial policy than argued by Lin and Rodrik. An important distinction between Lin and Chang's approach, is whether a country should defy or conform to comparative advantage. In Chang's view, it is important to defy one's comparative advantage in order to obtain productive and technology capabilities. These capabilities are not created automatically, it requires learning strategies and deliberate policies to continuously generate them. For this, a country must enter an industry to accumulate new capabilities through actual production experience (Lin & Chang 2009).

Where Chang and Andreoni (2016) further differ from Rodrik and Lin is in their view of the world as "highly uncertain". Whereas businesses can reduce some of the uncertainty by themselves, there are areas where the state is more suitable to reduce the uncertainty such as in the development of technological capabilities. Industrial policy can thus serve to reduce

uncertainty by developing a common vision for development and set the direction for creation of new markets. The state should thus act a more regulating role in order to reduce uncertainty and develop comparative advantages.

Chang, Lin and Rodrik's approaches represent the main debates surrounding industrial policy today. What remains important from these debates, is what role the state should have in relation to the market as this has a decisive role for what policy instruments are preferred. Consequently, it remains an active discussion within the field of industrial policy if the state should play the role as facilitator or active regulator.

2.4 Sub-conclusion

The review has illustrated how industrial policy as a field has become more complex and the debates more varied. The debates demonstrate how industrial policy has moved from a narrow understanding of industrial policy as protectionist instruments towards a more complex and broader understanding of industrial policy to include more multifaceted policy instruments and objectives. Moreover, the financial crisis in 2008 demonstrated the need for governments to steer the economy, which caused a revival of industrial policy (Andreoni 2016).

Industrial policy today has become more varied and the variation is also driven by countries' political and economic differences. Therefore, understanding the rationale and policy objectives for each country is important in order to understand the complexity that surrounds industrial policy today.

If the question of industrial policy remains *how* to conduct proper and good industrial policy and there exists a consensus around the fact that industrial policy has changed from its former variants, we need to better understand and evaluate industrial policies. Therefore, it becomes necessary to investigate the approaches countries have today through empirical studies of actual industrial policies. On basis of this, an analysis of MIC2025 and MII is an important contribution to understand the features of industrial policy today.

3. Conceptual framework

Authors: Cecilie & Katrine

The following section is a presentation of the conceptual framework applied in this thesis to analyse MIC2025 and MII. The section provides a description of how the concept of industrial policy is operationalised in order to make it applicable in the analysis. As industrial policy today is a matter of *how* to conduct it, it becomes important to classify it. The framework provides the analytical tool to characterise MIC2025 and MII and thus forms the basis for a comparison of the strategies by emphasising the relationship between objectives, policy instruments and the role of the state. Furthermore, it equally helps to place the strategies in the context of the recent revival of industrial policy.

3.1 Definition of industrial policy

As emphasised in the review of industrial policy, there is no consensus on how to define industrial policy and the different definitions of industrial policy are related to how the state intervenes (Peres & Primi 2009:13). Therefore, there has traditionally existed both broad and narrow definitions of industrial policy. The narrow definitions emphasise that industrial policy consists of selective policies with the purpose of promoting specific sectors or industries. Broader definitions emphasise, that industrial policies are all government policies directed at affecting the economic structure of the economy (Stiglitz et al. 2013:2). A definition that has been widely used in the field of industrial policy is Pack & Saggi's (2006). They define industrial policy as:

“Any type of selective intervention or government policy that attempts to alter the structure of production toward sectors that are expected to offer better prospects for economic growth than would occur in the absence of such intervention, i.e. in the market equilibrium” (Pack & Saggi 2006).

However, as industrial policy has come back on the agenda since the financial crisis in 2008 and more countries apply it, there has also been a shift in policy instruments and scope of industrial policy interventions. Today, industrial policies arguably focus less on the

protection of specific industries and have broader objectives such as sustainable growth. UNCTAD describes industrial policy today as: “*more agile, interactive, inclusive, flexible, [and] integrative with other policy areas*” (UNCTAD 2018:126). Such a description is arguably broader than traditional understandings of industrial policy and provides industrial policy with a bigger role in development.

Despite a shift in industrial policy to include a wider range of policy instruments, as a result of the new environment in which industrial policy is operating today, selective promotion of industries and targeted intervention remain central elements. However, Pack and Saggi’s definition with an emphasis on “selective intervention” does not sufficiently cover the complexity that surrounds industrial policy today. In addition, Pack and Saggi’s description of the overall objective of industrial policy interventions to include “economic growth” does not adequately address some of the more recent objectives industrial policy includes today. Therefore, this thesis applies Ken Warwick’s (2013) definition from the OECD report “Beyond Industrial Policy: Emerging issues and New Trends” that builds on Pack and Saggi’s definition but includes more instruments and objectives. Warwick defines industrial policy as:

“Any type of intervention or government policy that attempts to improve the business environment or to alter the structure of economic activity toward sectors, technologies or tasks that are expected to offer better prospects for economic growth or societal welfare than would occur in the absence of such intervention” (Warwick 2013:16).

The definition has several advantages for the aim of this thesis. First, the definition implies that industrial policy today can entail objectives that include a more facilitating role for the state by emphasising policies that aim at improving the business environment. Second, Warwick’s definition underlines that industrial policy can allocate resources toward not only sectors but also technologies and tasks, which captures newer industrial policy trends. Third and last, the definition underlines how industrial policy today has broader objectives than economic growth. In Warwick’s definition, this is expressed by offering better prospects for “societal welfare”. Therefore, Warwick’s definition is applied because we find that it better captures the complexity that surrounds industrial policy today and thus provides the foundation for analysing MIC2025 and MII.

3.2 Comparative advantage conforming or defying?

As the review demonstrated, there exists a debate in the literature about whether an industrial policy should conform to or defy a country's comparative advantage. This debate is linked to assumptions about when an industrial policy is more or less likely to be successful. The debate today has, however, overall moved away from the static understanding of comparative advantages towards a more dynamic understanding of comparative advantage, which entails that a country can *develop* a comparative advantage. Therefore, it has become a matter of the extent to which a country should defy its comparative advantage (Warwick 2013:18).

In addition, as industrial policy has moved away from a focus on mere growth towards ensuring sustainable and long-term economic growth, the argument in favour of a comparative advantage defying strategy has become stronger. This is exemplified in the case of labour abundant countries such as India and China, who have a comparative advantage in labour-intensive industries. However, these industries are not sufficient to ensure sustainable long-term growth which is why industrial policy needs to include an element of defying in order to move into advanced technological and skill-related activities (UNCTAD 2016). The focus on ensuring more sustainable and long-term growth thus entails that countries address a wide range of sectors and industries. Therefore, industrial policies are conforming to a country's comparative advantages in some areas and defying in others.

The distinction between defying or conforming a comparative advantage serves to understand the policy orientation of an industrial policy. If the industrial policy develops into new industries and on that account develop a comparative advantage, the policy is comparative advantage defying. Contrary, if the industrial policy is oriented towards consolidating and building on existing strengths it is comparative advantage conforming (Lin & Chang 2009). The analysis provides an assessment of whether the objectives of MIC2025 and MII conform to or defy the countries' comparative advantage(s), which will provide an understanding of the nature of China and India's industrial policies.

3.3 Policy instruments in industrial policy

Industrial policy instruments are the policies available for governments to obtain the objectives of the industrial policy strategy (UNCTAD 2016). Objectives in this thesis refer to the overall goals the government seeks to obtain through industrial policy, which can be characterised as the government's national development priorities. There exist a number of instruments that states can employ in the promotion of an industrial policy. Earlier, industrial policy was mainly characterised by protectionist policy instruments (Naudé 2010). Today, a number of wide-ranging instruments are employed in industrial policy (Warwick 2013). This reflects not only the changing nature of industrial policy but also how industrial policy has become more complex as its objectives have become more extensive.

The literature on industrial policy has classified industrial policy instruments in various ways depending on the areas in which they intervene. This thesis applies two overall categories to classify the instruments applied to obtain the objectives: horizontal and vertical. In defining horizontal and vertical policies, horizontal industrial policies are often argued to be more neutral as they do not target specific industries. On the other hand, vertical industrial policies contain a level of targeting. These policies are often referred to as "hard" industrial policies. While the distinction between the horizontal and vertical policies has analytical value, it is important to note that horizontal policies also have unintended elements of targeting and are thus not as neutral as sometimes perceived (Andreoni 2016; Andreoni & Chang 2016), which is the understanding this thesis conforms to. Therefore, this thesis will employ the categories of horizontal and vertical policies. Warwick's definition of industrial policy applied in this thesis suggests a distinction between industrial policies that aim to improve the business environment and policies that aim to alter the structure of economic activity toward sectors, technologies or tasks. This distinction reflects the analytical distinction between horizontal and vertical policies. Whereas policies that aim to improve the business environment can be characterised as horizontal, policies that aim to alter the structure of economic activity towards sectors are more selective and can thus be characterised as vertical. Horizontal policies are arguably less discriminatory towards industries or sectors and therefore more market-based. Contrary, vertical policies that are more selective tend to lend a bigger role to

the state and are thus less market-based (Naudé 2010). As recognised in Warwick's definition, industrial policy may aim to promote not only specific sectors but also promote specific technologies or even tasks. This reflects that industrial policy can operate at different "levels" and thus suggests different degrees of targeting. Policies that target sectors (agriculture, industrial or service) reflect a minor degree of targeting compared to industrial policies that target and promote specific tasks. Therefore, we recognise that targeting takes many forms - from the more implicit kind, reflected by horizontal policies, to varieties of direct targeting, which is reflected by vertical policies. Therefore, when the two categories, horizontal and vertical, are applied for analytical purposes, it is with this awareness in mind. As this thesis applies the categories horizontal and vertical to classify industrial policy instruments, instruments applied to improve the business environment are seen as horizontal whereas instruments applied to promote sectors, technologies or tasks are seen as vertical.

The different levels industrial policy operates on, expressed through the two categories of horizontal and vertical industrial policies, further suggest, that the state can have different roles in conducting industrial policy. Whereas horizontal industrial policies that aim to improve the business environment entail a more facilitating role for the state, vertical industrial policies, that entail a larger degree of targeting, implies a more regulating role for the state.

3.4 The role of the state

The role of the state can take different forms in conducting industrial policy. As the question in industrial policy today has become one that engages with *how* to conduct industrial policy, there is a recognition that the state has a role to play in economic development. The question remains what role. The state's role can unveil the rationales for industrial policy and further reflect the policy instruments used. Moreover, the role of the state is closely connected to the objectives of a given industrial policy and the national context and institutions of the country. For a distinction between the different roles the state can act, Peres & Primi (2009) and Horner's (2017) classifications will be used.

Overall, the state can act four different roles in industrial policy and thus in regulating the market; the regulating, facilitating, producing and buying role. The regulating role is reflected in the state's aim to *support* sectors, industries or tasks and in large seeks to limit and restrict certain economic activities through regulations. The facilitating role, on the other hand, aims to *promote* specific economic activities. The facilitating role reflects the state's aim to improve the workings of the market in which businesses operate. Lastly, the state can act as a producer and buyer. A producing role entails participating in industrial production through for example state-owned enterprises. The state as buyer is often promoted through public procurement programmes that ensure a market for industries and/or economic activities (Peres & Primi 2009; Horner 2017).

The above-described roles can be acted concurrently and one role does not exclude the others. However, the facilitating role of the state has become the most pronounced globally, especially among those that have been sceptical about industrial policy in the past. Today it is accepted that the state has a role to play, but in large, the role of the state is limited to one of a facilitator. This has also changed attitudes of the state as producer and buyer, which in this environment have become somewhat contested roles (UNCTAD 2016:95f).

As there exist various understandings of industrial policy as a concept, this section has served to clarify how the concept is operationalised in this thesis.

The above presented conceptual framework serves to classify MIC2025 and MII, their objectives, the instruments they use to obtain the objectives and what role the Chinese and Indian state have in conducting industrial policy. The classification will serve to compare MIC2025 and MII. The next section presents the research design which elaborates on how the conceptual framework is applied.

4. Research design

Authors: Cecilie & Katrine

This section outlines the research design and methodological considerations of this thesis, which is formed by a comparative case-study. We will detail why we have chosen a case-study to analyse MIC2025 and MII, and how we will conduct the analysis in conjunction with the conceptual framework. In addition, we will explain why China and India is chosen as cases, why we have chosen to zoom in on the auto industry, and the strengths and limitations of the chosen research design.

4.1 Comparative method and case selection

Based on the research question, this thesis provides an analysis of MIC2025 and MII and how the strategies reflect industrial policy today. The overall research strategy is comparative and case-oriented, as MIC2025 and MII each represent cases of industrial policy. We analyse the content of MIC2025 and MII qualitatively which will form the basis for the comparison. In this thesis, China and India represent diverse cases (Seawright & Gerring 2008). The cases are thus chosen because they represent diverse cases of development but the announcement of MIC2025 and MII demonstrate that they have adopted seemingly similar industrial policies that focus on the manufacturing sector. China's development path has been characterised as export-led industrialisation with a comparative advantage in labour-intensive industries. India's development path has been characterised by import-substitution industrialisation with a comparative advantage in the skill-intensive service sector. These developments have been formed by the countries' industrial policies which have emphasised different sectors of the economy (Dahlman 2009). However, with the MIC2025 and MII strategies, the two countries are seemingly moving in a similar direction as they both emphasise the manufacturing sector - China with an effort to become a manufacturing superpower, India with an effort to become a global manufacturing hub. The advantage of choosing two cases for this study is our understanding of industrial policy as complex and changed from previously. It is our understanding that in order to comprehend the complexity of industrial policy, we must

compare how it is conducted, in which context and with what policy instruments. As case-studies provide in-depth contextual knowledge it is useful for comprehending industrial policy as a concept (Landman & Carvalho 2016). As the two strategies are rather new, it makes them highly relevant and current cases for an analysis of the role of industrial policy today. Lastly, China and India have the world's biggest populations and are among the leading global economies and thus their industrial policy might have a global impact which makes them important to understand. For this, a qualitative comparative case-study is pertinent.

This thesis zooms in on the auto industry, which is one of the most commonly targeted industries globally (UNCTAD 2018:150). In MIC2025 and MII, the auto industry is highlighted as a key industry. Throughout history, the auto industry in both countries has been subject to special government attention within the countries' industrial policies. Thus, the auto industry is an industry that has developed alongside industrial policy. The relevance of the auto industry becomes even more apparent as the industry in both countries has been a major contributor to growth within the manufacturing sector and the overall economy and has in both countries become a major player in international markets (Amighini 2012). In regards to production numbers (total number of passenger cars and commercial vehicles), China was leading and India was the fifth biggest car-producer globally in 2017 (OICA 2017). Therefore, in both China and India, developing and strengthening the auto industry continues to be pivotal for the overall economic development, which is why the industry is chosen as a focus area in the analysis of MIC2025 and MII.

Furthermore, as highlighted in the conceptual framework, targeting remains a central element of industrial policy. The auto industry, and China and India's special focus on it, makes it a pertinent case to understand the forms and degrees in which targeting takes place. The auto industry thus serves to exemplify the targeting nature of industrial policy.

4.2 Analysis strategy

The analysis consists of three parts: first is MII analysed, second is MIC2025 analysed and lastly is a comparison between MIC2025 and MII. The first two parts of the analysis provide the basis for answering the question about what characterise the strategies based on the objectives, policy instruments and the role of the state. Furthermore, it will also provide the basis for answering how MIC2025 and MII emphasise the auto industry. The last part will compare the results of the analysis of MIC2025 and MII.

The method applied to analyse MIC2025 and MII is inspired by document analysis. Document analysis is useful for evaluating documents and is especially useful in case-studies in which rich descriptions are important to answer the research question. Document analysis involves coding the content of documents and thus document analysis is a systematic procedure for reviewing or evaluating documents. Document analysis is based on content analysis and entails organising information into categories related to the conceptual framework which is developed on the basis of the research question (Bowen 2009).

Based on the conceptual framework applied in this thesis, the content of China and India's industrial policy strategies, MIC2025 and MII, is analysed with a focus on the strategies' objectives, their policy instruments and the role of the state. In addition, the analysis provides an insight into the relation between the overall objective of a country's industrial policy and which policy instruments are applied to obtain this objective and how the policy instruments applied have implications for the role of the state (compared to the market). The established relation between objectives, policy instruments and the role of the state presupposes that the analysis starts with an identification of the strategies' objectives and to what extent the objectives align with an effort *to improve the business environment* or an effort *to alter the structure of economic activity toward sectors, technologies or tasks*. Identifying the objectives of the strategy provides a foundation for studying the policy instruments applied and serves to classify the instruments as either horizontal or vertical. In addition, a focus on the auto industry serves to study how the instruments applied in the strategies are translated

into practice and the degree of targeting which further serves to understand how the relationship between the state and the market plays out. Analysing the content of MIC2025 and MII makes the basis for a comparison of the two, which will be the last part of the analysis. The results of the analysis are compared to understand the similarities and differences between the strategies in regards to objectives, policy instruments and the role of the state.

The analysis is orchestrated around principles of the deductive method as the strategies' objectives, instruments and the role of the state are analysed in conjunction with the conceptual framework. The conceptual framework provides a tool to characterise and compare MIC2025 and MII. We have sought a balance between, on the one hand, having concepts that allows for a comparison and, on the other hand, having a conceptual framework that is broad enough to grasp the distinctive features of the strategies.

4.3 Data

The analysis builds on multiple sources of data. Most of the data material consists of qualitative data derived from policy documents, country reports from the WB and OECD, academic literature, government websites, and newspaper articles. Furthermore, the thesis has employed quantitative data from the WB, supported by statistics from the National Bureau of Statistics China and China Association of Automobile Manufacturers where the WB did not have available data on China. This thesis mainly builds its empirical data on secondary sources and it has thus been important to triangulate the data for better validation (Ackerly & True 2010:185).

MIC2025 and MII provide the overall framework that informs the remainder of the analysis. As the strategies mainly lay out the objectives and goals of the industrial policy and thus represent overall policy frameworks, they do not entail detailed information about the policy instruments applied to obtain the objectives. Whereas the framework of the strategies has been developed by the governments in China and India, respectively, various ministries, committees and councils have been key players in designing, overseeing and implementing

the policy instruments. Therefore, to comprehend MIC2025 and MII the analysis involves various policy documents.

One major barrier in the process of data gathering has been language as we are working with India and China that each employ Hindi and Mandarin, respectively, in much of the academic literature but also in policy documents. India's history of being a former British colony makes English a more common language in India (compared to China), which is why more English material is accessible and much of their policies are released in English. Assessing Chinese material has, however, been problematic. The Chinese government only releases a small number of policies in English and those that are released from the government's own sources are often summaries. Therefore, one of the central documents of this thesis, the MIC2025 policy paper, has been accessed through an English translation. This has some implications and therefore it has been important to gather additional secondary sources on the MIC2025 strategy to triangulate the data. Furthermore, there exist issues of censorship when using Chinese-based newspapers. The use of Chinese-based newspapers has therefore mainly been to gather information about policy releases and not as part of an assessment of results and implementation of the policies.

4.4 Scope of the thesis

The analysis reflects a top-down perspective on policy-making as we do not analyse how the strategies evolve in the interaction with local governments or other relevant actors. Local governments in both China and India have an important role in the implementation of policies enforced by the central government which inevitably has an influence on how industrial policy is conducted and implemented. The relationship between the central- and local governments is beyond the scope of this thesis. Furthermore, as we are interested in the role of the state and how it strategically can use industrial policy as part of a development plan, a top-down perspective is more pertinent to answer our research question.

We cannot generalise our results, as we focus on China and India specifically. However, and based on the assumption that industrial policy has become more complex, generalisability is not the goal of this thesis - rather it is to provide a comprehensive understanding of MIC2025 and MII and gain insight into the complexity that surrounds industrial policy. Furthermore, as China and India's national contexts are unique their approaches to industrial policy do not necessarily make for generalisability.

This thesis focuses on the auto industry and the analysis, therefore, focuses specifically on the impact of MIC2025 and MII in the auto industry. Both strategies are, however, oriented towards other industries than just the auto industry. In the case of China, the strategy revolves around 10 high-tech manufacturing industries. In the case of India, the strategy revolves around industries ranging from labour-intensive and capital intensive manufacturing industries to high-tech service industries. As the strategies might affect the chosen industries differently it is, however, more likely that MIC2025 will affect the industries in more similar ways because the industries share more similarities. Contrary, MII might affect the industries in more various ways as the industries are more varying and on different levels of development. Therefore, the effects of MIC2025 on the auto industry might be more generalisable to other industries in China's manufacturing sector than is the case in India.

5. China and India's economic reforms - Towards a market economy

The following section provides a brief description of China and India's economic development paths. Focus will be on the key policies that have impacted the countries' economic development. Special attention is paid to industrial policies and their impact on development in the manufacturing sector and hereunder the auto industry in China and India. Appendix 1 entails an overview of how China and India's sectors have developed in terms of size and contribution to GDP along with economic reforms.

5.1 India's reforms

Author: Katrine

After independence - Licence-Permit Raj

On August 15 1947, India became independent after being under British control for almost 200 years. The Indian National Congress party (INC) formed the government and Jawaharlal Nehru became the first democratically elected Prime Minister of India. The first major task of India's Nehru-led INC-government was to design India's first Five Year Plan and to thereby formulate an economic policy and set the direction for future development in India (Saikia & Shukla 2012). India's colonial legacy came to fundamentally shape the policies in India after its independence and a nationalist elite in India dominated the formulation of India's economic policies that had long-term effects and came to influence India's economic development until its liberalisation in 1991 (Kapur 2014). India's development strategy came to focus on state-led industrialisation, import-substitution and large control of the public and private sector (Pawar 2018). The idea was to create a strong industrial base and the driving principle for the strategy was self-reliance (autarchy) and the idea that any product that could be produced at home should not be imported. Thereby, high tariffs became a fundamental instrument to curb imports. In addition, the government introduced what became known as the system of "Licence-Permit Raj". Licence-Permit Raj implied a strong control with private companies, especially in the manufacturing sector and almost every manoeuvre required a

licence. Thereby, the government could control what private companies were allowed to produce, how much they could produce, what the price should be and which raw materials they were allowed to use. Further, the government decided how many workers private companies could hire and whom they could fire (Tiwari et al. 2011).

Deregulation in the 1980s

During the 1980s the political arena in India became more pluralistic. Especially the right-wing Bharatiya Janata Party (BJP) became a strong voice in the political arena and opened the debate for more liberal policies (Tachiki 2012). BJP came to influence the political agenda and in the early 1980s the top priority of the INC-government, led by Indira Gandhi, was to ease regulation and improve production. The approach to ease regulation was the early steps taken to dismantle the import-substitution regime and was characterised by being experiential and gradual. In addition, the easing of regulation was more clear in some industries than others (ibid).

In 1985, the Rajiv Gandhi government, who came into power in 1984 after his mother Indira Gandhi, continued the pattern of policy changes. Moreover, during the second half of the 1980s, the state got more actively involved in promoting the growth of some industries and reduced protection and thereby encouraged businesses to increase their competitiveness. Easing restrictions on capacity expansion, removing price controls and reducing corporate taxes were also examples of a changed attitude toward businesses (Kohli 2006).

New economic policy - Liberalisation

In 1991, India faced a major financial crisis which forced India to break with its protectionist regime, abolish Licence-Permit Raj and to actively seek FDI. In addition, the continued growing strength of the opposition parties continued to influence the political arena in India and the political consensus was that India should open up and liberalise its economy. The Indian government, under Rao, approached the IMF for a bailout loan and the IMF agreed to provide financial assistance in return of a liberalisation of the economy (Saikia & Shukla 2012:62ff).

The Indian government started to disengage itself from the economy and took steps to liberalise and open up the economy. India moved from a state-led closed economy towards

greater integration with the world economy (Tiwari et al. 2011). This included less control over private business activity and substantially lower entry barriers to the Indian market. The number of industries reserved for the public sector was reduced from 18 to eight in 1991. Today only two industries are reserved for the public sector (atomic energy and railway transport) (GoI 2016).

5.1.1 The evolution of India's auto industry

India's auto industry is argued to have evolved in line with the three phases of industrial policy presented above (Tiwari et al. 2011). From India's independence and until the 1980s, the auto industry was tightly regulated through a series of regulatory instruments, including Licence-Permit Raj, which were implemented in order to protect the auto industry from foreign competition and promote indigenisation (Tachiki 2012). The government introduced an import ban on completely build-up vehicles. Furthermore, the government constrained import for the auto industry as it required a licence to import technology and components.

In the 1980s, the Indian government eased the licensing controls and other restrictive instruments to promote competition, efficiency and modernisation within a list of core industries, including the auto industry (Tiwari et al. 2011; Kumar & Kaur 2015).

When Suzuki entered the Indian market in 1983 through a JV, it became the start of a new liberalised era in the auto industry (Traub-Merz 2017). During the 1990s, India witnessed the largest entrance of foreign auto manufacturers. Major players established their production bases in India, mainly through JVs, which increased competition in the auto industry (Kumar & Kaur 2015). The government obliged foreign companies to meet export targets and local-content obligations and pushed for further indigenisation of production. This served to improve the position of Indian manufacturers in the auto industry (Tachiki 2012).

In 2000, most of the protectionist clauses pertaining the Indian auto industry were abolished. This was mainly because of pressures from the WTO which India became a member of in 1995. In 2002, the new Auto Policy was introduced which allowed 100 per cent foreign control for both the automobile and the auto component industry. This policy also exempted manufacturers in the auto industry from licensing and approval in terms of imports and the local-content obligations were also removed. Thus, the auto industry evolved through India's

industrial policy phases from a highly restricted system in the early years of independence towards a more liberal system. Today, India's auto industry comprises of both domestic and foreign players. The auto industry contributes 7.1 per cent of total GDP, 26 per cent of Industrial GDP and about 49 per cent of the country's Manufacturing GDP.

5.2 China's reforms

Author: Cecilie

1978 marked the beginning of domestic reforms and the opening up of the Chinese economy to the outside world. Deng Xiaoping was China's then leader and his rule marked a change in national attitudes towards marketisation. Domestic and international exchange through markets were acknowledged as necessary and became basis for China's national development strategy. In the new political environment China embraced foreign trade, FDI, external technological cooperation and capital in various forms. The reforms came without a blueprint and Deng characterised the economic reforms as "Crossing the river by feeling the stones" (Garnaut 2018:33). Deng's leadership laid the foundation for the Chinese model that balances economic reforms and growth with a strong state and political control (ibid).

Deng's reforms also entailed the "open door policy" which has been vital for China's growth. China liberalised trade, imports and export were advanced and FDI was promoted through the establishment of special economic zones (SEZs) and infrastructure projects. Special tax-breaks and low-wage labour made the SEZs attractive for foreign investors and laid the foundation for China's export-led model (Ming et al. 2013:7).

During the years of planned-economy, SOEs formed the backbone of China's economy. This changed with China's economic reforms. SOEs have been reformed several times since 1978, and the reforms have sought to reduce SOEs' relative importance to expand the private sector. Public ownership, however, continues to be vital to China's economy alongside the development of mixed-ownership structures. SOEs' main functions today are to promote the overall development of the national economy, carry a dominant role in key areas and

industries, and ensure fair competition between SOEs and other enterprises (OECD 2015b:152f).

In 2001, China entered the WTO, which mandated China to further liberalise by lowering tariffs on imports and permitting foreign firms access to directly sell products in China's domestic market (Chow 2015:74). Overall, the WTO accession was epoch-making for China's transformation to a market economy fully integrated into the global trade system. China's economic growth accelerated with double-digit numbers hereafter (OECD 2015a). The gradual reforms and liberalisation have made China one of the biggest production bases in the global manufacturing system (Ming et al. 2013:8).

5.2.1 The evolution of China's auto industry

The Chinese auto industry is emblematic to the transformation the Chinese economy has undergone. In 1978, the Chinese auto industry was small and backward (Li et al. 2016). Since the reform period started, China's auto industry has boomed into one of the biggest producers of passenger cars globally. The auto industry is a major contributor to China's GDP and is an industry that has been strategically protected and subject to substantial industrial policies.

The central government in China has had two overarching goals for the auto industry: 1) support few large auto-groups in order to achieve optimum economic scales and efficiency, and 2) promote joint ventures (JV) between large SOEs and foreign partners to exchange technology and advance R&D capacity. The end goal has been to establish "national champions" that are competitive globally (Zhang 2014:27).

Industrial policies directed at the auto industry have developed over time. Overall, the development of the auto industry can be divided into four stages. Each stage is characterised by different industrial policies which have affected the development of the industry. From 1978-1985 the auto industry was characterised by its backwardness and underdevelopment. Domestic production was low and design and innovation capabilities weak. The government therefore devised a strategy to accommodate the challenges through introducing JVs in 1983.

The JV model was a “market for technology”-policy, with an aim to access technology from foreign manufacturers in exchange for market access (Chu 2011a:1243; Zhang 2014:27).

In 1986, the auto industry was announced a pillar industry of the Chinese economy (Chu 2011a:1240f). The JV model made production capabilities grow as more entered the market (Li et al. 2016). More entrants also provoked policies to protect the industry through entry control, local content requirements and high tariffs. The protection made it possible for the JVs to price the cars higher than international levels, but foreign partners did not have incentive to transfer new technology. In 1997, China began to prepare for the WTO entry and thus eased entry control to attract more foreign investors but still demanded technology transfer (Chu 2011a:1243). The core technologies of car production were still managed by foreign investors, but the output from the industry grew rapidly (Li et al. 2016:23). At the same time, domestic consumption increased. Since then, the Chinese auto industry has mainly sold cars to the domestic market (Li et al. 2016:24).

As China’s automobile industry experienced rapid upgrading with more indigenous brands after the WTO entry, the industry’s contribution to China’s national economy began to rise. In 2004, the government announced the “Automotive industry development policy” that reiterated the objective of creating internationally competitive auto industry groups while concurrently continuing the emphasis on JVs (Zhang 2014:27). In 2009, the Chinese state issued a new policy which purpose was to consolidate the industry by reducing the number of major domestic automakers from 14 to 10 and create few, but giant automakers (ibid). While indigenous firms have risen and been catching up in the period, JVs still dominate the industry. Therefore, issues with lack of indigenous innovation and technology capabilities are still a concern in the industry. Since 2010, the development of New Energy Vehicles (NEVs) has been introduced as a new strategy for the industry and has been promoted through several policy instruments (Yeung 2018).

6. China and India's industrial policies - A review

Authors: Cecilie & Katrine

Industrial policy in China and India has been investigated by many scholars as the countries represent cases of heavy use of industrial policy. Their development has been argued to stand in contrast to the Washington consensus as the state has been a strong actor in both India and China's economic development. Their development strategies and performance, however, differ much from each other. While there exists a large scholarly group that mainly focuses on China and India's economic growth as a result of liberalisation reforms and opening-up, another scholarly group has zoomed in on the concurrent use of industrial policy, which they argue, has been just as pivotal for China and India's success today (Dahlman 2009; Chu 2011a; Barnes 2017).

China and India have used industrial policy which has formed their development strategies in the countries. Therefore, the two countries' industrial policy strategies have also differed from each other. Whereas China has followed a more traditional development of labour-intensive export strategy, India has followed a more knowledge-intensive service export strategy, which is in large part due to their industrial policies. Dahlman (2009) argues, that because of their industrial policies, the two countries were able to develop the necessary technological capabilities they needed to become competitive before they liberalised, however some industries have performed better than others. The fact that China and India have large domestic markets, which have ensured some level of domestic competition while protecting the industries from foreign competitors, is often used as argument for the successfulness of protectionist policies, such as infant industry protection and FDI restrictions (Dahlman 2009). Therefore, the special national context of India and China signify that their industrial policies and success cannot necessarily be replicated by other countries, especially in an international environment where the opportunity to apply traditional industrial policy instruments has been limited by e.g. WTO rules (Chang 2003).

Whereas it is clear that China and India's development has been shaped by a heavy use of industrial policy that has overall been considered successful, more in-depth case-oriented studies have also pointed to areas where China and India's industrial policies have been less successful. Therefore, the following section provides an insight into how China and India's industrial policies are considered successful in some areas and unsuccessful in others with special attention to scholars that examine the auto industry. From the review it becomes clear, that studies that narrow their focus to specific industries within the manufacturing sector, compared to studies that address the manufacturing sector or even the two countries' economies as a whole, have more ambiguous findings concerning industrial policy and its impact. This has consequences for the scholars' assessment of the overall successfulness of the industrial policies. The classification of scholars in the following review will be based on how the scholars assess China and India's industrial policy experiences and whether they have been successful or not.

6.1 Industrial policy in India

Author: Katrine

In the following section literature examining industrial policy and its effect on India's economy, and hereunder the development of the auto industry, is reviewed. Within the literature concerning India's economic development and its industrial policy it has been argued, that India's manufacturing sector has underperformed due to the sector's small contribution to GDP compared to earlier developers and other Asian countries. Several explanations have been discussed in the literature for the underperformance and relatively small size of the manufacturing sector. The strictly regulated business environment known as Licence-Permit Raj has been highlighted as a core explanation for India's underperformance. However, there still is disagreement on the exact costs of this industrial policy framework of control and its impact on the performance of the manufacturing sector in India. The role and effectiveness of India's industrial policies thus continue to be a topic of discussion.

Overall, India's manufacturing sector is regarded underdeveloped because it lags behind the service industry in terms of its contribution to GDP (Felipe et al. 2013a; Pawar 2018).

From the literature, Licence-Permit Raj is overall assessed as an industrial policy regime that has both had some positive and negative impacts on India's economic performance within the manufacturing sector. Scholars highlighting the negative impacts state, that India's underperforming manufacturing sector is a result of Licence-Permit Raj which has caused inefficiency, a misallocation of resources, and discouraged domestic and foreign competition (Felipe et al. 2013a, Bhat 2014). However, it has also been stressed that the manufacturing sector was built up under Licence-Permit Raj and that the growth India experienced in the 1980s, after a gradual marketisation, was strongest in industries where the earlier investments have been made. This highlights some of the positive outcomes of Licence-Permit Raj (Rodrik & Subramanian 2005).

Felipe et al. (2013a) find, that India's manufacturing activity has been biased towards large-scale (capital-intensive) or skilled labour-intensive industries. In addition, India's protectionist policies under Licence-permit Raj have shown unable to provide impetus for low-skilled labour-intensive manufacturing industries. This was clear from the fact that capabilities were built up within capital-intensive rather than labour-intensive industries and that India is exporting fewer labor-intensive products and a higher number of skilled labor-intensive products. Similarly Bhat (2014) finds, that labour-intensive industries' share in total manufacturing (GVA) has been declining. Whereas capital-intensive industries' share in total manufacturing (GVA) has increased (with respect to the auto industry among others).

In relation to this, Kale (2012) states that the auto industry in many ways is a product of state-controlled development with various regulations and interventions. Kale finds, that protectionist policies, at the one hand, have helped the development of basic capabilities within the manufacturing sector but, at the other hand, overly protection and strong regulation of firm activities have reduced growth within certain manufacturing industries. This goes together with the argument of Singh & Cheema (2015), who find that the policy instruments applied to regulate the auto industry in the form of protection, capacity licensing, restrictions on foreign collaboration, price controls and so on, have helped to build up the auto industry to a great extent.

It has been argued, that industries that performed well after India's liberalisation in 1991 were already well established because they had received special attention in India's industrial policy strategies in the foregoing period. In comparison, import rose within industries that were less established and less competitive (Chaudhuri 2013). Chaudhuri (2013) argues, that a lack of industrial policy meant that India has failed to adequately develop certain industries in the manufacturing sector and that India, therefore, became increasingly dependent on imports. Underdevelopment of certain industries within the manufacturing sector is reflected in the overall manufacturing trade deficit that has worsened since the early 2000s. This argument goes together with the findings of Pawar (2018) who states, that performance in the manufacturing sector since 2001-02 has suffered from stagnation in India's overall competitiveness. Indian manufacturers are argued to be stuck at the basic or intermediate level of technological capabilities (Pawar 2018, Bhat 2014). However, certain industries, such as the auto industry, have experienced an increased level of productivity due to a favourable innovation system and technological improvements (Pawar 2018) whereby India's auto industry has been able to withstand competitive pressures. On basis of this, it is generally acknowledged in the literature, that the liberalisation of India's economy has had a significant positive impact on the auto industry. However, this impact might not have been possible if India had not nurtured the industry through industrial policies in the first place (Tiwari et al. 2011).

The above presented findings show, that India's industrial policies have been highly influential in shaping the development of the auto industry, and there is a general agreement in the literature, that India's success within the auto industry is a product of the protectionist policies that were a part of Licence-permit Raj. However, India's overall performance within the manufacturing sector has been disappointing which is reflected in a trade deficit within the manufacturing sector and the manufacturing sector's relatively small contribution to India's GDP.

India's manufacturing activity has moved towards being capital-intensive which is likely to have long-term employment implications - especially to a labour surplus country like India (Bhat 2014). Whereas the empirical findings among the scholars reviewed provide reason to believe, that some of the success-experiences in the auto industry can be attributed India's

industrial policies, it is difficult to reach a clear conclusion on whether the underperformance within other industries in India's manufacturing sector is caused by industrial policies or the absence of the exact same thing. This is reflected in the fact, that it is difficult to say how industries would have developed if industrial policy had been done differently or even completely leaved out.

6.2 Industrial policy in China

Author: Cecilie

The Chinese auto industry has been subject to heavy industrial policies and is thus often a case on the consequences of interventionist policies. The scholars reviewed here can overall be grouped into those arguing that China's industrial policies have generally benefitted the development of the auto industry and it would not have happened through means of liberalisation alone. Another group of scholars tend to be critical towards China's JV policy and the support of SOEs, which have impeded competition. Both groups, however, acknowledge that the state has a role to play and recognise the need for some regulation. Themes that are most present in the literature concerning China's industrial policies are the state's role in developing industries, the relationship between the local and central government and the issue of innovation and technological capabilities.

The benefits of a strong state

Investigating China's industrial policy inevitably entails a focus on the state that has played an immense role in the development of the auto industry in China. The most studied policies are those of entry control, SOEs and JVs. The policies' aim has been to protect SOEs and obtain the needed technology to develop an industry with strong domestic brands that are competitive internationally (Chu 2011a). One discussion within the field has further been if the auto industry has developed around market-forces as China's reforms created a more liberal environment or if the development has happened because of industrial policies. Central to these debates are the relationship between the central and local governments. Eun & Lee (2002) for example argue, that the Chinese auto industry has developed around market

incentives rather than government policies. Such development took place when economic decentralisation was introduced in China and it transformed local governments from obedient agencies to actors pursuing their own economic interests. The fact that local governments implement industrial policies have resulted in an auto industry that has developed around market-incentives despite several protectionist policy instruments.

Eun & Lee's argument has, however, been challenged in the literature. A group of scholars argue that close state-industry collaboration, pragmatic thinking and planning from the central government have benefitted the auto industry and China's industrial development in general (Barnes 2017). Felipe et al. (2013b) for example argue, that China, already prior to their liberalisation reforms, had managed to induce structural transformation by developing new capabilities through industrial policy. This made it possible for Chinese entrepreneurs to respond constructively to the market incentives created by a more liberal environment. Chu (2011a) has similar findings and argues, that the Chinese government has practiced pro-active industrial policies effectively. He states, that China's catch-up consensus, which entails building national champions and industries, has made room for a bargaining process between local governments, the central government and other relevant actors, so that the formulation of policies are constantly revised and bettered to create national competitive brands. The local governments have room for experimentation and the central government re-formulates policies as new knowledge is gained. Therefore, industrial policy is a multilayered process constantly evolving. The auto industry, Chu argues, has been especially compatible with such a policy process. Chu concludes, that the development of China's auto industry has heavily relied upon the state's interventionist policies and not upon sheer market liberalisation or FDI inflows.

Therefore, within the literature concerning China, some debates revolve around how industrial policy has influenced the development of China's auto industry and *if* industrial policy has been cause to these changes. However, scholars such as Chu (2011a), Felipe et al. (2013b) and Barnes (2017) share the assumption, that the auto industry has not only been heavily influenced by the state but has also benefitted from it. They question the common argument, that liberalisation reforms have carried China's economic growth by stating that

without a strong state to regulate, formulate and implement industrial policies, China would not have developed a strong industrial base. They thus form the common argument, that market-forces and liberalisation reforms alone cannot explain China's success story, there is a continued need for a strong state. Scholars from this group, therefore, tend to emphasise the need for combining horizontal and vertical policy instruments to both accommodate market-failures and promote specific new activities for future industrial development.

How much state-regulation is good regulation?

Since the first industrial policy directed at the auto industry in the 1980s, the government has relaxed parts of its industrial policy. However, the government continues to exercise control over the auto industry and SOEs and JVs continue to be important policy instruments. The government's rationale for SOEs is a continued emphasis on exercising control over industrial development and a widespread nationalistic sense of building "national champions" to catch up with the West (Chu 2011a). The outcome of strong state regulation of the industry and how it has affected the industry's innovation level, competitiveness and thus future possibilities of growth is, therefore, a recurrent theme in the literature. One argument found in the literature, is that China's preferential treatment of SOEs has had a negative impact on competition and the development of the private sector. Anderson (2015) argues, that while SOEs have been reformed over the years and allowed for more diversified competition, it has mainly been to strengthen SOEs competitiveness. SOEs as policy instrument has, therefore, impacted the development of entrepreneurship and innovation in the auto industry and will continue to do so. This has been exacerbated by the JV model, in which SOEs have had little incentive to build their own technological capabilities. The technological acquisition, that the JV model initially was intended to introduce has, therefore, not been present and JVs continue to rely on foreign technology (Yang et al. 2017, Howell 2018). In Howell's (2018) words: "*their 30 years quest to build an industry dominated by Chinese car brands has backfired. The problem: joint ventures with foreign car makers that have proven just a tad too comfortable*" (Howell 2018:1452). The literature thus present the unintended impact of policies that have been implemented to protect domestic manufacturers. On that note, this group of scholars tend to emphasise the importance of removing obstacles for competition

and free markets. The state should only seek horizontal policies and have a facilitating role rather than a regulatory role (Brandt & Thun 2016).

Literature on industrial policy in the Chinese auto industry is a reflection of the overall debate there exists in literature pertaining to industrial policy and how the state should intervene in development. On the one hand, China's industrial policy has protected the industry and nurtured domestic brands. The policies have benefitted the industry's growth. On the other hand, the policies have been promoted at the expense of entrepreneurship, competition and innovation where China still lacks behind foreign manufacturers in terms of technology acquisition. The Chinese government has acknowledged the benefits of a more market-driven industry (Anderson 2015), but it does not translate into a less visible state. It seems, that the government tries to balance between entrepreneurship and maintaining control, by introducing more competition into the industry (Chu 2011b). The approach to the auto industry is therefore a reflection of how China approaches economic development more generally.

6.3 Sub-conclusion

Authors: Cecilie & Katrine

The reviewed literature of China and India's industrial policies serve to understand how analyses of industrial policies and its impact in the two countries have been interpreted by scholars in the field and which challenges have been highlighted as important. The scholars in the review analyse the consequences of China and India's protectionist industrial policies. The studies reflect the more narrow understanding of industrial policy that dominated the field prior to the financial crisis, which was more concerned with debates about protectionist policies versus having an open economy and the issue of targeting specific industries.

The literature illustrate how scholars reach different conclusions in their assessments of China and India's industrial policies and its impact on China and India's economic development/performance. The literature reflects the debates there exist within the field of industrial policy, of what role the state should have compared to the market and the

advantages and disadvantages of regulating industries through active policy instruments. The consequences of China and India's industrial policies become especially clear in studies that are more case-oriented and focus on specific sectors and industries. Scholars that contend that China's industrial policy in the auto industry has had negative consequences point to issues of lack of indigenous innovation and technological capabilities. In India, scholars who are critical about the conducted industrial policy argue, that it has promoted capital-intensive industries and caused an underperforming manufacturing sector which has not generated the needed employment. The challenges highlighted by the scholars reviewed are attributed to how China and India have conducted industrial policy in the past. The announcement of MIC2025 and MII shows that industrial policy continues to have a central role in China and India's development. Therefore, an analysis of MIC2025 and MII is an important contribution to understand how state-led development through industrial policy continuously form the development in the two countries.

7. Industrial policy for Industrial upgrading: An analysis of Make in India and Made in China 2025

In the following section MII and MIC2025 are analysed in conjunction with the conceptual framework applied in this thesis. The analysis therefore focuses on the strategies' objectives, policy instruments and the role of the state, with a special emphasis on the auto industry.

First, MII is analysed, second MIC2025 is analysed.

7.1 Make in India: Becoming a manufacturing hub

Author: Katrine

On September 25 2014, India's Prime Minister Narendra Modi, launched the national industrial policy strategy "Make in India" (MII). The main objective of MII is to turn India into a "manufacturing hub" urging foreign and domestic investors to invest and manufacture in India. MII aims to raise the contribution of the manufacturing sector from 15 per cent to 25 per cent of GDP and to create 100 million jobs by 2022 (Dev 2014; MII 2014). The strategy is designed to diversify and transform India's economy by developing the manufacturing sector. Thus, the strategy reflects a recognition of the importance of developing the manufacturing sector and that relying on the service sector alone is not sustainable to maintain long-term economic growth. In addition, MII reflects the government's commitment to face challenges such as unemployment and a growing workforce consisting of many youths looking for job opportunities.

The goal of raising the share of manufacturing to 25 per cent of India's GDP and create 100 million jobs were already enunciated by United Progressive Alliance (UPA) in 2011 when it published the National Manufacturing Policy (NMP 2011). At the time Modi was elected as India's Prime Minister in May 2014, the National Manufacturing Policy had failed to bring any significant results and manufacturing as a share of GDP was declining (Mallet & Crabtree 2014). It can thus be argued, that the Modi-led BJP government took over fundamental elements from the National Manufacturing Policy and made them their own

through the launch of MII. MII and the National Manufacturing Policy share striking similarities in terms of objectives and instruments, however, MII highlights a necessity to attract more FDI in order to obtain the objective of transforming India into a global manufacturing hub (Ruparelia 2015).

MII is designed to promote investments, foster innovation, protect intellectual property rights, enhance skill development, generate employment and build best-in-class manufacturing infrastructure (MII 2014). In recognising investment promotion as a “multidimensional” and “complex” process, activities such as easing the processes of doing business, FDI reforms, infrastructure creation and skill development have been brought into focus to make India the most preferred investment destination (GoI 2018). The Department for Promotion of Industry and Internal Trade (DPIIT) has been entrusted with the tasks of formulating an FDI policy and monitoring reforms in regards to ease of doing business and investment promotion (DPIIT 2018). In relation to this, DPIIT has worked to set up a website (www.makeinindia.com) to provide information about the MII strategy. The website describes MII as “*the single largest manufacturing initiative undertaken by a nation in recent history*” and the great ambitions for the strategy and vision for India are also reflected in the following description found on the website: “*The world’s largest democracy is well on its way to becoming the world’s most powerful economy.*” (MII 2014).

MII focuses its attention on 25 specific industries that have been selected across sectors and are seen as the core drivers of the MII strategy. The industries are at different stages of development and range from labour and capital-intensive industries to high-tech industries and modern services (Nam et al. 2017). DPIIT has formulated specific medium- and short term goals for each of the 25 sector-specific industries with active participation from various Central government departments, local state governments and industry leaders. The website [makeinindia.com](http://www.makeinindia.com) provides facts and information on each of the 25 industries. Moreover, it provides information on all aspects of regulatory issues in India and thus serves to help investors obtain regulatory clearances.

The 25 sector specific industries are listed below:

India's 25 sector specific industries		
Automobile	Food Processing	Railways
Auto-components	IT and BPM	Renewable energy
Aviation	Leather	Roads and highways
Biotechnology	Media and entertainment	Space
Chemicals	Mining	Textiles and Garments
Construction	Oil and gas	Thermal power
Defence Manufacturing	Pharmaceuticals	Tourism and hospitality
Electrical Machinery	Ports and shipping	Wellness
Electronic Systems	Railways	

Source: <http://www.makeinindia.com/> (MII 2014)

Among the 25 sector-specific industries is the automobile and auto-component industry. These industries are considered industries where India enjoys a competitive advantage (NMP 2011) and are expected to generate a large part of the jobs. India has emerged as an important player and MII has the potential to improve India's global position in the auto industry. The auto industry in India accounts for 7 per cent of GDP and 45 per cent of manufacturing GDP. Thus, the auto industry is an important industry to India's economy but is also considered an industry with huge growth potential (CII & EY 2016).

By addressing the elements of the MII strategy one-by-one, this analysis serves to describe the new environment in which India seeks to develop its manufacturing sector by making it easier to make in India. There is an emphasis on the government's effort to lessen regulation in regards to doing business and improve infrastructure which is seen as essential to attract investments and develop the manufacturing sector. Whereas MII serves as the overall reference point to promote investments, various industry-specific schemes and policies have been provided for amplification of a coordinated and focused investment outreach. These schemes and policies are equally important for MII to be successful. Therefore, the analysis will also address some of the industry-specific policies that have been adopted to develop the auto industry.

The government's effort to ease processes in regards to doing business and its effort to improve infrastructure to attract investment reflects a shift in the government's mindset. This shift in mindset has formed the design of MII and is a central feature of the MII strategy. The government has been very explicit about this shift in mindset as it is seen as important in order for MII to be successful because India for a long time has been considered as a country that was difficult to do business with. In addition, this shift in mindset is important to understand the new relationship between the state and the market in India. Therefore, the following section will delve into some of the factors that have formed this shift in mindset.

7.1.1 Minimum government, maximum governance

Following the general election in 2014, the Modi-led BJP achieved an outright majority in the Parliament and formed a single-party government (Palshikar & Suri 2017). Since then, the BJP has been increasingly advocating for India's need to create a more business-friendly environment. BJP's effort to change the Indian economy has been driven by a neoliberal agenda exemplified by the MII strategy. The reforms entailed in MII are argued to reduce the power of the state and hand over more power to businesses (Kaul 2017). To understand the nature of Modi's reforms and how the relationship between the state and the market is characterised, it is necessary to understand what a "business-friendly" environment entails. First of all, business-friendly translates into the willingness of the government to *facilitate* an environment businesses find attractive. The facilitating role is expressed by the government's effort to ease the process of doing business and provide infrastructure which are considered as central instruments in order to attract investments.

2014 marked a turning point in the sense that there was a reaction to the form of liberalisation and the "malgovernance" that had characterised the previous period of governance. The Modi-led BJP argued for a need to enhance the quality of the functioning of the market adhering to a pro-business line (Palshikar & Suri 2017). Before Modi became India's Prime Minister, he served as chief minister of the Indian Gujarat state, which had enjoyed high growth and had become a destination for investments. In contrast, the Indian economy, in general, had experienced a slowdown in growth. Gujarat became a model for industrial

growth as Gujarat served as an example of how a business-friendly environment and the granting of more freedom to businesses was the formula for economic development. Therefore, the Gujarat model came to influence the MII strategy as arguments for a more investment-friendly environment were legitimised by the experiences from Gujarat (Kaul 2017). In addition, Modi became a central figure as his popularity increased as a result of his achievements in the Gujarat state (Palshikar & Suri 2017).

During Modi's election campaign, which was one of the most expensive ever seen in the country and supported by some of the largest businesses in India (Kaul 2017), he emphasised that his approach to reform India was guided by the mantra of "Minimum government, maximum governance" committing the BJP to restore the role of the government (MII 2014; Ruparelia 2015). This has been termed a "paradigm shift" in the government's approach to governance (Singh & Jaiswal 2018). The mantra suggests a restructuring of power between the state and the market and reflects the government's effort to reduce its influence on the one hand and make it more efficient on the other. This is expressed by the government's effort to ease the process of doing business which entails a variety of steps to simplify procedures and make them more efficient (Ruparelia 2015). Combined with the idea of a new rising India, nationalism and neoliberalism simultaneously played out as key components in Modi's campaigning promising "development for all" (Kaul 2017). Within this, Modi pictured himself as the pro-business "development-man" who will replicate the Gujarat-model throughout the country.

7.1.2 Policy instruments

The above section has briefly described the shift in the government's mindset that has been observed after BJP won the election in 2014. This new mindset is clearly reflected in the MII strategy and in the policy instruments applied to obtain the objectives of MII. Policy instruments such as easing the process of doing business and infrastructure improvements, which are instruments applied to improve the business environment and support the 25 sector specific industries, will be elaborated in the following section. From the section, it will become clear, that these instruments appear very general and are considered as horizontal. In addition, the section clarifies the facilitating role of the Indian state.

7.1.2.1 Ease of doing business

One of the objectives of MII is to improve India's business environment and hereunder India's ranking on the WB's EoDB-index. Out of 189 countries, India ranked number 142 in 2014 on the WB's EoDB-index. WB's EoDB-index is a ranking system that captures differences in regulations across countries. It ranks countries in proportion to 10 indicators of business regulation which are aggregated into a final score (WB 2014). India's low ranking indicated, that the global business-community did not find India to be an attractive place for doing business. A high ranking means, that the regulatory environment to a higher extent contributes to the starting and operating of businesses. Together with India's labour laws (which is not within the scope of this thesis) over-regulation of business entry were highlighted as barriers to increase investments, employment and growth by the WB in 2013 (WB 2013). In order to improve India's ranking on the EoDB-index India has worked to make it easier to run a business. New policy instruments of delicensing and deregulation to reduce complexity and increase transparency have been implemented to create a more business-friendly environment (MII 2014). This includes easing the process of obtaining construction permits, starting a business, registering property, obtain electricity connection and paying taxes. In addition, an online eBiz portal has been established where central services have been integrated and businesses can fill out applications 24/7 and obtain approvals and licences online (MII 2014). This form of digitalisation and implementation of online application formulations serve to reduce cost and time taken procedures to obtain permissions.

Indicator		Rank
1.	Starting a business	137
2.	Dealing with construction permits	52
3.	Getting electricity	24
4.	Registering Property	166
5.	Getting credit	22
6.	Protecting minority investors	7

7.	Paying taxes	121
8.	Trading across borders	80
9.	Enforcing contracts	163
10.	Resolving insolvency	108
	<i>EoDB-rank</i>	<i>77</i>

Source: Doing Business Report, (WB 2019)

The recent report from WB on doing business, published in 2019, shows that out of 190 countries India now ranks 77 (WB 2019). The year before, India ranked number 100 (WB 2018a). On basis of this, we can conclude that India has experienced an immense improvement in regards to its ranking on the EoDB-Index and has jumped 65 positions since 2014 and 23 positions between 2017 and 2018. This improvement has been attributed to MII and the reforms that have been conducted under Modi's leadership. Besides digitalisation and implementation of online application-forms mentioned above, other reforms such as extending the validity of industrial licences, as well as enacting the Goods and Services Tax (GST) and the insolvency and Bankruptcy Code, have been highlighted as some of the most influencing reforms in regards to the recently registered improvement in India's ranking on the EoDB-index (Thakker 2018). An important aspect about the GST-system is that it removes the multiplicity of tax structures and serves to bring clarity and homogeneity in the tax system which is supposed to generate higher revenues by increasing coverage and compliance (Geetha 2016). In addition, India's GST-system means that the Indian states can no longer offer extraordinary tax conditions and tax breaks in order to attract investments - instead they will have to attract investments by e.g. improving infrastructure. This is a way to move competition between states away from being a race to the bottom where states compete by lowering standards towards a race to the top. The Ministry of Commerce and Industry (MoCI) stated in a press release in 2018, that India's improved performance in the EoDB-index since 2014 have taken place due to the government's commitment to "*carry out comprehensive and complex reforms, supported by the bureaucracy which has changed its mindset from a regulator to a facilitator*" (MoCI 2018).

A favourable business environment is a prerequisite for the growth of a country (Singh & Jaiswal 2018). Whereas India has been one of the fastest improving countries in the world in regards to the EoDB-index, some challenges remain. A deeper look at the 10 indicators that make up the EoDB-index shows, that there are several key areas where India still lacks considerable progress. Even though India made small improvements in regards to “Starting a Business”, India still ranks 137th. Likewise, India ranks 163rd in “Enforcing Contracts”, and in regards to “Registering Property” India ranks 166th. These rankings have been highlighted as “subpar” (Thakker 2018) and reveal that some reforms remain incomplete. It means that processes in regards to starting a business, registering property and enforcing contracts remain “cumbersome”. One of the main reasons for this is that the judicial system in India is very slow (Singh & Jaiswal 2018). In addition, land acquisition has been highlighted as a major issue in regards to starting a business (Geetha 2016). These are challenges India will have to address to further improve its ranking on the EoDB-index.

7.1.2.2 Infrastructure creation

Access to modern infrastructure is seen as a requirement for the development of India’s manufacturing sector as it serves to improve productivity and thereby competitiveness. Therefore, MII entails an effort to improve the infrastructure through increased investments in highways, ports, railways and airports to create five industrial corridors. These industrial corridors are placed across India and serve to provide an impetus for manufacturing production. The corridors link some of the biggest cities in India and the establishment of industrial corridors is seen as essential to raise the share of manufacturing in India’s GDP by supporting businesses’ accessibility to the domestic and international markets (Nam et al. 2017). The corridors are listed below:

- Amritsar-Kolkata Industrial Corridor (AKIC)
- Vizag-Chennai Industrial Corridor (VCIC)
- Chennai-Bengaluru Industrial Corridor (CBIC)
- Bengaluru-Mumbai Economic Corridor (BMEC)
- Delhi-Mumbai Industrial Corridor (DMIC)

Especially the Delhi-Mumbai Industrial Corridor (DMIC) is highlighted as a global destination for manufacturing and investments utilising the 1,504 km-long high-capacity Dedicated Freight Corridor as the backbone. This railway corridor for freight trains is supposed to transform the way goods are moved around in India. It is supposed to increase efficiency and reduce the cost and time of moving goods. The vision for the DMIC is to expand India's manufacturing base and develop a "global manufacturing and trading hub". The DMIC runs through the following six states: Haryana, Rajasthan, Gujarat, Madhya Pradesh, Uttar Pradesh and Maharashtra (DMICDC 2019). Along the industrial corridors, India is organising manufacturing clusters. Clusters refer to a geographic concentration of interconnected businesses, which help businesses to become more productive and efficient through economies of scale. A cluster-based approach serves first of all to overcome an issue of insufficient infrastructure but also to enhance the competitiveness of the manufacturing sector. This approach has functioned as a central policy element through India's history (Mukherjee et al. 2016) and continues to do so which is clear from the MII strategy.

India's step to improve infrastructure through the establishment of corridors and industrial clusters is important for the future development of the auto industry. Growth in the auto industry will depend on developing India's infrastructure and increasing the level of export in the auto industry will require efficient infrastructure facilities. In relation to this, India has set up five large auto clusters (MII 2014):

- Chakan in Maharashtra
- Oragadam in Tamil Nadu
- National capital region cluster (NCR) that runs across Uttar Pradesh, Haryana and Delhi
- Sanand in Gujarat
- Pithampur in Madhya Pradesh

All the above clusters, except from Oragadam in Tamil Nadu, are located in states where the DMIC runs through and thus these auto clusters benefit from the improved infrastructure facilities. The clusters are supposed to make India become more attractive for investments and thereby scale up the production and export in the auto industry.

Besides industrial clusters, India has also developed a number of SEZs where the primary focus is on exports. In India, the establishment of SEZs is justified by the zones' potential to

generate growth and employment and industrial development in the surrounding area. In this regard, SEZs are also a key instrument in the MII strategy (Alkon 2018; Mukherjee et al. 2016). MII entails the government's recent initiatives applied to promote manufacturing production within India's industrial clusters and SEZs. These initiatives include improvement of infrastructure and ease of doing business as presented above. The IT-industry in the service sector has been a key contributor to the success of India's SEZs and the government of India strives to replicate the success in the manufacturing sector (Mukherjee et al. 2016).

The establishment of clusters and SEZs exemplifies an approach to economic development that shares certain similarities with that of China and to some extent is inspired by the success of China in developing its manufacturing through SEZs and clusters (Mukherjee et al. 2016). However, it is questionable to what extent India will experience the same success as India faces several challenges if it focuses its attention on export-led growth alone. These challenges consist of a global slowdown in growth which means that relying on early developed countries for exports has become more uncertain. In addition, the fact that China continues to dominate the global market in manufacturing goods together with serious competition from countries such as Vietnam and Indonesia, who challenge Indian manufacturers, makes a focus on export-led development less promising (Shukla et al. 2017). Therefore, while increasing export remains important, India will also rely on domestic demand to maintain economic growth. This is where MII is different from earlier export-oriented development strategies, as MII also includes a focus on industries that are outside the manufacturing sector. In addition, horizontal instruments do not only benefit labour-intensive manufacturing industries, which were the core drivers in China's export-led development strategy, but allow various industries to flourish. However, as one of the main priorities of MII is economic inclusion the manufacturing sector comes to play an important role. Currently, India does not produce enough jobs to absorb the workforce and low productivity in some industries further means that India is under-utilising its abundant labour force. The most effective way to absorb the labour force and increase domestic consumption is through formal sector jobs which pay regular and generally higher wages (Green 2014). As mentioned earlier, both the service sector and formal manufacturing have been highlighted as the true growth drivers in India. Even though the service sector has experienced the fastest

growth, formal manufacturing provides more jobs and therefore holds the biggest potential for future job creation (Green 2014).

The manufacturing sector in India has become divided into a formal (capital-intensive) and an informal (labour-intensive) sector. Whereas the informal sector generates most of the employment, productivity in the formal sector is much higher. However, the performance of the formal manufacturing sector has often been overshadowed by a general underperformance within the manufacturing sector primarily caused by low productivity within the informal sector. Therefore, the formal manufacturing sector has not received the attention it requires.

The informal manufacturing sector has largely developed due to restrictions on formal manufacturing. In addition, the formal manufacturing sector has been focused on capital-intensive manufacturing and has therefore relied less on labour. This is mainly due to inflexible labour regulation. India's restrictive labour laws are argued to have caused a tendency where businesses stay away from labour-intensive industries and instead opt for capital or skilled-labour intensive manufacturing. In the initial phase of MII, initiatives to stimulate manufacturing production have focused on easing the processes of doing business and improving infrastructure. However, India's labour laws remain a significant barrier to formal labour-intensive manufacturing (Green 2014). The need to reform India's labour laws has also recently been recognised by the government and the government has started to carry out reforms (Shukla et al. 2017). Whereas it is recognised that labour reforms will have an impact on the future production composition of India's manufacturing sector and the balance between labour-intensive and capital-intensive industries, labour reforms remain outside the scope of this thesis. However, MII equally entails other instruments besides improving the business environment and infrastructure, that are likely to affect the production composition of India's manufacturing sector and have an equally important role in order to obtain the goal of inclusive growth. Among those are efforts to attract FDI, improve protection of intellectual property rights, provide skills and increase R&D spending. The following section elaborates on these policy instruments.

7.1.2.3 FDI reforms

A central aspect of the MII strategy is to increase the level of FDI. It has been argued that it requires a major shift in the amount FDI flowing into manufacturing to acquire both the

capital and the know-how to kick-start India's manufacturing sector and to make the domestic production process more efficient. In order to attract FDI, India's domestic market becomes crucial because shifting operations to India provides a privileged position to access India's domestic market (Nam et al. 2017; Green 2014).

India's FDI policy and procedures have been simplified and liberalised progressively. By introducing investment-friendly policies and removing barriers on FDI across various sectors the Indian government seeks to attract investments from businesses around the world. By improving India's infrastructure and India's ranking on the EoDB-index, significant barriers to attract FDI have been removed. As presented above, India has made a major improvement in regards to its ranking in the EoDB-index since 2014. This improvement indicates that India's investment climate has improved. MII represents an attitudinal shift in how the Indian government relates to investors from being "a permit-issuing authority" to being "a true business partner" (Dev 2014). This reflects a shift in how the government works and interacts with businesses (DPIIT 2017). The government has divided India's industries into two groups which decide how FDI is permitted: one group with industries that receive FDI through an *automatic route* and where no Central government permission is required and another group with industries that receive FDI through a *government route* and where it requires Central government approval to invest. FDI in the manufacturing sector is permitted under the automatic route. In addition, more activities have been added to the automatic route as a part of the MII strategy. Moreover, to simplify the approval process of FDI, a portal to facilitate FDI has been established. The portal is being administered by DPIIT and it serves to simplify the work related to the processing of applications for FDI that go through the government route and require approval. India's step to improve its investment climate marks a liberalisation of India's FDI system and is therefore in line with the general effort of MII (Anand et al. 2015). Attracting FDI is important to improve domestic productive capabilities towards a more advanced level of production and allows manufacturers to move into production of more sophisticated products. In addition, it serves to improve productivity and enhance competitiveness (Nam et al. 2017).

In terms of FDI reforms in the auto industry, limitations have been removed and the conditions for FDI have been simplified already in 2002 when a new Auto Policy ended the

obligation for foreign investors to establish JVs. The new Auto Policy permitted 100 per cent foreign control for both the automobile and the auto-component industry. Thereby, the auto industry came under the automatic route where no Central government approval is required in order to invest (Traub-Merz 2017).

There has been a sharp turnaround in FDI in 2014 and after the announcement of the MII strategy, India has become one of the most attractive destinations for FDI (Tripathi & Rao 2016). After a steep fall in 2013, FDI in manufacturing grew at its fastest in seven years from 2013 to 2014. In 2014, India witnessed an inflow of FDI capital of \$25 billion whereas 46 per cent went to the manufacturing. This upsurge coincided with the launch of the MII strategy and its relaxed constraints on FDI in key industries (CII & EY 2016). This increase in FDI is also apparent in the auto industry (Tripathi & Rao 2016). The recent 'achievement report' published on the website makeinindia.com shows, that FDI in the auto industry has grown 1.7 times since 2014 (from \$3.98 billions in 2011-14 to \$6.86 billions in 2014-17). The auto-component industry alone witnessed 14 per cent growth in turnover and 3 per cent growth in exports between 2015-17 (MHIPE 2018).

7.1.2.4 Protection of intellectual property rights

In regards to attracting FDI and innovation, protection of intellectual property rights (IPR) becomes important. Therefore, an effort to protect IPR is also a part of the MII strategy as it is seen as essential in order to promote indigenous innovation and access foreign technologies. Thus, the MII strategy recognises the importance of modernising and strengthening institutions to protect IPR. In May 2016, a comprehensive National IPR policy was approved to stimulate innovation and creativity across sectors. This policy emphasises a balance between serving the interest of the rights' owner and interest of the society.

7.1.2.5 Skill development

Currently, manufacturing production in India faces two problems - those who are available for employment lack the necessary skills, and those who have the skills are less willing to work in manufacturing (Chandra 2015). Therefore, the workforce in India needs to be provided with the requisite training and skills that qualify them to work in the manufacturing

sector. Likewise, skilled Indian workers need to be attracted to work in manufacturing by focusing on innovation. In recognition of the necessity to provide the workforce with the required skills and knowledge in order to enable them to contribute substantially to economic growth, the government has established the Ministry of Skill Development and Entrepreneurship (MSDE) which is responsible for skilling India's workforce. The MSDE was created in 2014 to drive the "skill India" initiative which has been developed along with the MII strategy. Skill India and MII are thus complementary to each other and the skilling efforts are aligned with the requirements of the 25 sector specific industries that have been selected as the core drivers of the MII strategy. A joint committee will be responsible for anticipating skill requirements so that the same can be provided in India's training institutions to ensure that the Indian workforce can meet the requirements (MSDE 2015).

Promotion of R&D, innovation activities and skilling of labour reflect a recognition of the importance of supporting high-productivity industries. In addition, these instruments clarify how MII not only addresses traditional labour-intensive industries but also focus its attention on high-tech manufacturing.

The above-presented policy instruments are the government's response to accommodate major challenges that have restricted growth in India's manufacturing sector. The policy instruments all serve to improve the productivity and competitiveness of India's manufacturing sector. Followed from the above-presented policy instruments entailed in the MII strategy it becomes clear, that MII applies some very general instruments also characterised as horizontal instruments which reflects the facilitating role of the Indian state. At the same time it underlines that India's strategy is different from the development strategy China has followed as India focuses on industries that range from labour and capital-intensive industries to high-tech industries and modern services. Therefore, MII adopts a diversified set of instruments simultaneously addressing the various types of industries positioned at different levels of development.

Even though MII applies instruments that are rather general and horizontal, numerous specific policies have simultaneously been applied to support the various types of industries at different development stages that have been selected as the core drivers of the MII strategy. These industry-specific policies reflect a more selective and targeted approach. The following

section elaborates on MII and its implication for the auto industry which has become a high-tech industry in India. Furthermore, some of the additional policies that have been developed for the auto industry are presented.

7.1.3 The automobile and the auto-component industry

The auto industry have been selected as one of the key drivers of the MII strategy. In relation to this, a special policy has been outlaid for the industry titled the Automobile Mission Plan 2016-2026 (AMP 2026) (SIAM 2016). This reflects the Indian government's commitment to make India a top manufacturing country in the auto industry. AMP 2026 aims to propel the Indian auto industry to be the engine of the MII strategy as it is amongst the foremost drivers of India's manufacturing sector. In this regard, the auto industry is also termed "the mother" of the manufacturing sector as it has several backward and forward linkages to industries across the manufacturing sector and the service sector (SIAM 2016). The AMP 2026 is an extension of the Automobile Mission Plan 2006-2016 (AMP 2016) and is based on the experiences and achievements obtained through this plan. It is the Indian government's view that AMP 2016 proved that government support helped India's auto industry to grow in multiple ways (SIAM 2016).

AMP 2026 is the Indian government's vision for the auto industry. Whereas MII seeks to define the overall trajectory for the Indian economy, AMP 2026 concentrates only on the auto industry and seeks to define the trajectory of evolution of this industry. Thus, the AMP 2026 seeks to communicate the government's objectives and policy goals for India's auto industry in terms of size and contribution to the overall Indian economy (SIAM 2016). In this regard, AMP 2026 also seeks to overcome an issue of clarity and to avoid conflicting policies. There have been cases where Indian states have interpreted and implemented policies from the Central government differently - this was also an issue experienced from AMP 2016. Therefore, AMP 2026 seeks to spell out the government's view on key policies for the auto industry so that all regulations impacting the industry are formulated comprehensively in scope and scale and are implemented "harmoniously" across states (SIAM 2016). Thereby, it can also be argued that the mantra of "minimum government, maximum governance" permeates policy-making at industry level.

AMP 2026 entails a vision called “Vision 3/12/65”. This vision translates into three stated objectives. By 2026, the Indian auto industry is expected to be among the top three in the world in regards to engineering, manufacturing and export of automobiles and auto-components. Likewise, the industry is expected to grow in value to over 12 per cent of India’s GDP and generate an additional 65 million jobs direct and indirect. Thus, the AMP 2026 aims to make the Indian auto industry one of the largest job-creating engines in the Indian economy (SIAM 2016). In terms of exports, AMP 2026 recognises that India has the potential to scale up exports to the extent of 35-40 per cent of its overall output and thereby become a major auto export hub (SIAM 2016). It is estimated that exports are likely to increase 5 times for automobiles (OEMs) and 7.5 times for auto-components. In this regard, efforts to improve competitiveness are essential and technological investment and infrastructure investment become important elements.

AMP 2026 states, that over the past ten years and since AMP 2016 was launched, India has emerged as one of the most preferred locations in the world for manufacturing of high-quality automobiles and auto-components. Moreover, AMP 2026 states, that over the next ten years the auto industry will experience a significant transformation. The AMP 2026 is important as it reflects the government’s intention to make the auto industry one of the core drivers of the MII strategy. As the auto industry is a key industry within the manufacturing sector and holds a huge job-creation potential it is an important industry for India to obtain its overall objectives presented in the MII strategy.

Besides AMP 2026 the government of India has developed other additional plans to support the development of the auto industry which provides an even greater push for transformation within the industry. These include the National Electric Mobility Mission Plan 2020 (NEMMP) and Faster Adoption and Manufacturing of (hybrid &) Electric Vehicles (FAME) (SIAM 2017). With these initiatives, the government seeks to facilitate long-term growth of the industry and aims to make transport in India cleaner and safer by bringing emission standards in line with global standards.

In short, NEMMP was launched in 2013 and envisages strategies to achieve the objective of efficient, environmentally friendly, affordable electric vehicles by 2020. In relation to this, the government is facilitating and supporting the charging infrastructure and development of indigenous battery technology. The implementation of NEMMP is expected to bring down the emissions from automobiles and reduce greenhouse gas like CO₂ emissions by 1.3 per cent by 2020 (SIAM 2017).

FAME is a scheme launched in April 2015 to support NEMMP. It aims to provide a major push for early adoption and market creation of both hybrid- and electric technology automobiles in the country. FAME intends to encourage the development of indigenous technology and R&D capabilities so that hybrid and electric components across all auto segments (cars, motorbikes, buses etc.) can be manufactured in India. Among the incentives to enable faster adoption, a lower GST of 12 per cent has been applied to battery electric automobiles. In addition, early market creation is shaped through demand incentives that will push for domestic production and the development of in-house technology. While the FAME scheme has pushed for electric vehicles sales, efforts to improve charging infrastructure and reducing battery costs are entailed in the NEMMP. Thereby, India seeks to address some of the negative externalities arising from the auto industry and the use of automobiles (SIAM 2017). NEMMP and FAME are both schemes that serve to support objectives entailed in the AMP 2026 where it is highlighted that India should acquire capabilities for research, design, engineering and testing to improve competitiveness globally (SIAM 2016). Through the AMP 2026, the government initiated an End of Life Policy aimed at encouraging people to scrap old vehicles and replace them with modern, safer, more fuel-efficient and less-polluting ones (SIAM 2016). Thereby, this initiative does also incentivise faster adoption of electric automobiles and thus support the FAME scheme.

AMP 2026 aims to increase the quantum of indigenously carried out research, design and engineering in the auto industry (SIAM 2016). In 2011, the National Automotive Testing and R&D Infrastructure Project (NATRiP) was launched. It aims to set up seven global test centres across India to develop world-class testing and homologation and to help the auto industry in India to adopt and implement world-class standards for safety, emissions and performance (SIAM 2017). A central element of NATRiP and the establishment of R&D

centres is that they make auto products manufactured in India globally competitive and thereby scale up exports. The establishment of R&D centres thereby also serves another element in AMP 2026 which is to incentivise domestic capacity creation.

The auto industry is globally witnessing a shift towards cleaner and greener transportation. This puts pressure on the Indian auto industry to meet this shift in demand for cleaner and greener transportation. Indian manufacturers in the auto industry will be forced to build capabilities to ensure that they live up to global standards and can remain competitive. AMP 2026 and additional schemes presented above serves to prepare the Indian auto industry for future pressures and are also important to position the Indian auto industry as a preferred manufacturing destination. As the AMP 2026 aims to increase India's exports within the auto industry Indian manufacturers will have to increase R&D spending for developing the necessary technological capabilities. Likewise, FDI becomes important to develop technology. Besides technological advancement, skill development becomes important as the auto industry will require a new set of specialised skills.

The auto industry in India provides direct and indirect employment to around 30 million people. In 2017, the industry provided direct employment to 12.8 million people of which 6 million people were engaged in the auto-component industry and 2 million were engaged in the automobile industry (OEM). The rest are engaged in service centers and dealership (EY et al. 2017:81). In some areas, the auto industry in India represents a high-skilled capital-intensive industry (Nam et al. 2017). Therefore, most of the jobs in the Indian auto industry require specialist skills. However, the industry also provides employment opportunities to a large number of semi- and low-skilled workers. The government's steps towards simplification and consolidation of India's labour laws are important for the auto industry. Another issue is skill development. At present, India is deficient in skills and capabilities in manufacturing of both automobiles and auto-components (SIAM 2016). The new initiatives in the auto industry such as FAME and NEMMP include a technological advancement in the auto industry and will require a new set of skills from the workforce. Therefore, players in the auto industry will have to adopt reskilling initiatives to provide workers with the required skills. In addition, the government has undertaken various

initiatives to provide the workforce with the necessary skills - hereunder the Skill-India initiative.

To sum up India's auto industry is crucial to obtain the objectives of MII because the auto industry is a major employment generator, GDP contributor and FDI earner. Since the launch of MII there has been a rise in production, in domestic sales and in exports. In addition, the auto industry has been going through a technological change and will continue to increase its technological advancement which is important for the industry to sustain its growth rate and further increase its global market share.

7.1.4 Sub-conclusion

The launch of MII has brought manufacturing to the centre-stage of the Indian economy as it aims to transform India into a manufacturing hub. It entails a comprehensive and unprecedented set of initiatives designed to catalyse the development of India's manufacturing sector. MII entails numerous policy instruments to improve the manufacturing sector addressed to industries ranging from labour- and capital-intensive to high-tech industries and modern services. These policy instruments include efforts to create a favourable business environment, to improve infrastructure, to increase the level of FDI, to stimulate innovation activities, and to enhance the availability of skilled and qualified labour. Moreover, MII demonstrates the government's changed mindset. The government's role in conducting industrial policy has changed from being a regulator to a facilitator. The facilitating role is reflected in the horizontal nature of the policy instruments applied in MII. Whereas the instruments applied appear general and less industry-specific, some industry-specific policies have been developed concurrently which reflect a more vertical nature - this is exemplified by the AMP 2026 which has been developed to support the auto industry.

The auto industry continues to remain an important industry for the manufacturing sector and the Indian economy in general. In this regard, industrial policy has played an immense role in developing the industry and will continue to do so which is clear from the above analysis.

The MII strategy can potentially lead to Make *for* India if the strategy succeeds in generating more formal jobs which can increase the disposable income among the Indians and thus increase the purchasing power and demand. Right now the focus on Make *in* India raises a concern if the focus on production and lowering production costs favours investors rather than labour.

7.2 Made in China 2025: Becoming a manufacturing superpower

Author: Cecilie

The “Made In China 2025” strategy (MIC2025) is a national industrial policy released in May 2015 but has been the policy agenda endorsed in 2013 by the third plenum of the 18th Central Committee of the Communist Party. MIC2025 was commissioned by Premier of the State Council Li Keqiang and is thus a strategy deriving from the top leadership in China. The top-down strategy is formulated by engineers and leading science agencies (Butollo & Lüthje 2017:48), and displays the Chinese government’s established policy priorities and strategic vision for upgrading the manufacturing sector. The government plays a pivotal role in the enforcement of MIC2025 and the involved ministries in the oversight of industrial policy in the auto industry are: the Ministry of Industry and Information technology (MIIT) which sets the standards for NEVs while is also in charge of testing and controlling. The Ministry of Science and Technology (MOST) coordinates R&D activities, and the Ministry of Finance (MOF) overlooks investments (Liu & Kokko 2013). Together with the ministries, a national leading group has been established, which is led by the State Council and will be in charge of making overall plans and policy instruments, strengthening strategic planning and supporting local governments in implementing the policies (MIC2025 2015:40).

The strategy is more ambitious than hitherto industrial policies promoted in China. The overall goal of the strategy, is to transform China into a *manufacturing superpower*. Despite the MIC2025 strategy’s name, it has a longer sight than 2025 and is divided into three stages with separate strategic goals. The first stage is the current running up to 2025. The overall goal for the first ten years is to make China a major manufacturing power by mastering core technologies in key areas, strengthen competitiveness in areas where China leads globally and greatly improve product quality. By 2025, China aims to have improved the overall quality of manufacturing, increase labour productivity and integrate IT into industries at advanced level. Furthermore, China aims at having more multinational enterprises and industrial clusters that are competitive internationally, move up the global value chain and improve their position in the global division of labour (MIC2025 2015:10f). The next stage is

by 2035 to reach the intermediate level among the world’s manufacturing powers. In 2049, China’s goal is to become the leader among manufacturing powers (ibid:11).

The strategy targets ten strategic industries where China is to a become global technological leader, see list below.

China’s ten strategic industries
Next generation IT
Aerospace and aviation equipment
Agricultural machinery and equipment
High-end numerical control machinery and robotics
Biopharmaceuticals and high-performance medical devices
Maritime engineering equipment and high-tech maritime vessel manufacturing
Energy saving vehicles and NEVs
New materials
Electrical Equipment
Advanced rail equipment

Source: Made in China 2025 (2015)

The MIC2025 policy paper offers an insight into the government’s overall visions and objectives for the manufacturing sector, moreover, it gives an insight into how the government understands and analyses the current challenges the Chinese society is facing. Issues such as rising costs in labour and production inputs, weak capabilities for independent innovation, dependency on external key technologies and advanced equipment, low product quality and slowing export growth are emphasised as obstacles for continued development of the manufacturing sector and are thus pivotal to address (MIC2025 2015:7).

Moreover, increased resource constraints and environmental problems are a concern in MIC2025. Much of China's pollution stems from car-traffic and the manufacturing sector (China Power 2016). Therefore, MIC2025 focuses on green manufacturing and promotes low-carbon production to reduce air pollution and external dependency on fossil fuels. The development of NEVs plays into this goal, as they could reduce air pollution severely. In obtaining such goals, R&D efforts and innovation are important.

MIC2025 further bears marks of more ambitious policy plans for China's role in the world. President Xi Jinping has made it explicit, that China strives for national rejuvenation and becoming a world power. The MIC2025 clearly reflects these objectives as well by stating: *“Building internationally competitive manufacturing is the only way China can enhance its strength, protect state security and become a world power.”* (MIC2025 2015:5). Therefore, the policy paper entails both an economic and industrial focus but also political objectives as growth is fundamental for the Party's continued legitimacy. The government wants to transform “Made in China” to “Created in China” and there is a strong focus on developing Chinese brands through “market-oriented and government-led development”. MIC2025 emphasises, that the market should be given “the decisive role in allocating resources” and, furthermore, enterprises should have a more dominant position in stimulating innovation. Innovation and research are main objectives in MIC2025 and it seems that the government will boost this through a freer market and increased competition. This part of the strategy expresses the goal of creating “national champions” that are competitive internationally. Creating own brands, strengthening intellectual property right and employing domestic equipment in production are vital policy instruments in achieving MIC2025's objectives. By 2025, the goal is that 70 per cent of spare parts and key materials have domestic sources (MIC2025 2015).

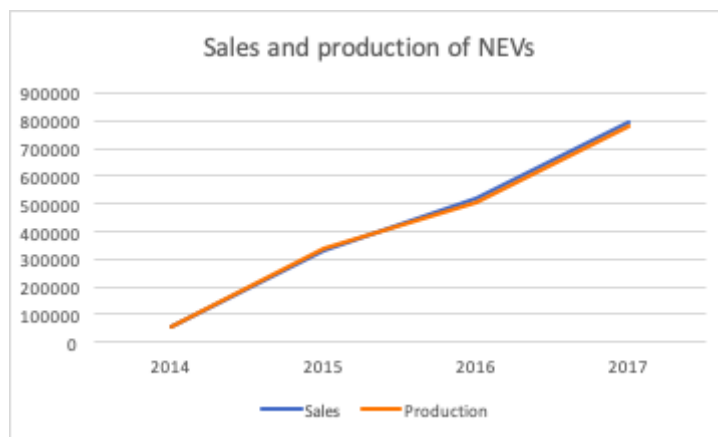
The funding of the strategy is massive and is mainly provided through public funds. The China Development Bank, the Advanced Manufacturing Fund (which is, among others, financed by the Central government and the State-owned fund Development and Investment Corporation), other government supported funds, and local governments are main financiers

of the strategy (Malkin 2018:4). The Advanced Manufacturing Fund alone constitutes approximately \$3,8 billion (Wübbecke et al. 2016:7).

7.2.1 The auto industry and the promotion of New Energy Vehicles

The NEV industry is one of the strategic chosen industries in MIC2025 and the focal point of this analysis. The government's focus on NEVs is part of the strategy of turning the auto industry into a global technological leader (Kennedy 2018). In striving for not only greener, more sustainable production but also greener finished products, the government focuses on promoting production and sales of NEVs. NEVs comprise of battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and fuel-cell electric vehicles (FCEVs).

China has encouraged the development of NEVs since 2010. The MIC2025, however, emphasises an important shift in policy orientation from the government, as the NEVs industry is now deemed to be at the forefront of development and a technological frontrunner globally. Since the release of MIC2025, the NEVs industry has grown rapidly with the promotion of new policy instruments.



Source: CAAM, Measure: units

In 2017, the industry reached production numbers of 794 thousand units and sales reached 777 thousand units. According to China Association of Automobile Manufacturers (CAAM), this was an increase of 53,8 per cent and 53,3 per cent year on year, respectively (CAAM

2018). 2017 was also the year, China became the top NEVs stock country globally (Yeung 2018:3). Undoubtedly, such numbers showcase the impact of the government’s policies. The relatively small market for the industry prior to MIC2025 indicates that the NEV industry’s vast growth is strongly induced by the government’s policies (Yeung 2018).

The objectives of MIC2025 for the NEVs industry are quite ambitious, as with the rest of the strategy. The MIC2025 policy paper identifies the following concrete tasks for the NEVs industry: continue to support electric automobiles and fuel cell vehicles, master core automobile technologies for low carbon, informatisation and intelligence, promote energy-savings and new energy automobiles with independent brands to match advanced international levels, build a complete industrial system and an innovation system ranging from essential spare parts to complete automobiles, improve engineering and industrialisation capabilities of core technology like batteries, driving motors, efficient combustion engines, advanced derailleurs, lightweight materials and intelligent controls (MIC2025 2015). The government aims to upgrade and improve technological capabilities in the whole production line.

Indigenous innovation is also a core goal in the NEVs industry. By 2020, China aims to have independent research and application of the research in production, and by 2025, to have increased China’s market share in high-end equipment. Furthermore, the auto industry should significantly decrease its dependency on external core technology (MIC2025 2015:30).

Made in China 2025 strategic goals for the NEVs industry

Product	Concrete goals	2020	2025
	<i>Increase sale volumes</i>	By 1 million units	By 3 million units
	<i>Reach global top 10’s</i>	Build star models with sales ranking in global top 10	Have two carmakers’ volumes rank in the global top 10
	<i>Key systems (e.g. power batteries and</i>	Reach world leading level	

Pure electric and plug-in hybrid cars	<i>electric motors) to reach world leading levels and increase market shares</i>	80 per cent of market share Achieve bulk export	
	<i>Informatisation</i>	Realise informatisation between car & car and car & facility	Test intelligent connected cars in regions
Energy saving cars	<i>Lower fuel consumptions of passenger cars (including NEVs)</i>	5 liters/100 km	4 liters/100 km
Fuel cell cars	<i>Increase production volume</i>	By 1000 units	

Source: Chinese Ministry of Industry and Information Technology (MIIT), 2015.

There has been released follow-up documents specific on the auto industry in relation to the implementation of MIC2025. The Key Technology Roadmap issued along the MIC2025, for example, quantifies ambitious goals for the market share of domestic manufacturers. By 2020, domestic manufacturers of NEVs should have reached a market share of 70 per cent and component parts, such as batteries, should have reached market share of 80 per cent (USCBC 2015). The government's quantitative goals for market-shares is a clear reflection of the active role of the state in developing the NEVs industry, as market-shares are set by the state, not the market. The quantitative targets arguably contradict the MIC2025 strategy's set aims of market-led development.

7.2.2 Policy instruments

The above sections has presented the ambitious objectives of MIC2025. The next sections will delve into the policy instruments the government has initiated as part of the MIC2025 strategy. The policy instruments are mostly of vertical character and contain efforts to promote the supply of NEVs, batteries and other components for the production of NEVs and efforts to stimulate demand and encourage consumption. In other words, the government has introduced several policy instruments to develop a market for NEVs that was not there prior.

As the NEVs industry is highly technological and more costly than traditional car technologies it demands large amounts of capital investments which only few enterprises can inject. Furthermore, stimulating demand is necessary, as NEVs are still of lower quality than traditional fuel cars, e.g. in driving range, while being more expensive than traditional cars (Zhang & Liu 2016:437). The government has used extensive policy instruments such as tax exemptions, subsidies for manufacturers and buyers, R&D funding and subsidies, the dual-credit system (which requires manufacturers to introduce a certain amount of NEVs into their fleet to stay in the Chinese market), government procurement, and comprehensive infrastructure projects for charging stations (Kennedy 2018:VI). As the remaining analysis will show, the government has acted the role of regulator, facilitator, buyer and producer in the development of the NEVs industry. However, the government is especially acting the role as regulator and enforces targeted policies to reach the objectives of MIC2025.

7.2.2.1 Government subsidies

Fiscal subsidies have been central to the promotion of the NEVs industry both at the central and local level of government. Large amounts of manufacturer and consumer subsidies have been awarded and it is estimated that the Central government, with additional subsidies provided by local governments, accounts for about \$15.000 for each NEV (Clover 2017). The Central government's demand policies include, among others, tax exemptions, restrictions on the issuing of licence plates for traditional cars, infrastructure policies, and notably, subsidies. Moreover, charging station infrastructure is important for the NEV market to develop and several policy instruments have been applied to support the development. Those policies alone are manifold and include facilitating construction planning, interface standardisation, and charging pricing policies while also supporting R&D activities that enhance the development of charging technologies and unified standards for the charging devices (Zhang et al. 2017:701; Kennedy 2018:14).

Subsidies are provided directly to the manufacturer and are awarded on basis of performance of the vehicle. Longer range vehicles receive higher subsidies and further, subsidies are given to the manufacturer on account of sale numbers, which is monitored through the number of

green licence plates issued. In 2015, subsidies for approximately \$8,7 billions were given by the government to the NEV industry (Fusheng 2018). The subsidy scheme has already been successful in reaching the quantitative targets set by the government for 2020 (70 per cent of market share) *and* 2025 (80 per cent of market share), as 90 per cent of NEVs sales are by domestic NEV manufacturers. By comparison, Chinese brands only account for 50 per cent of market share in traditional vehicle sales (Yeung 2018:8). The quantitative targets are a recurrent theme in MIC2025. Success is measured by sales, market share, global positions, production numbers etc. However, the fact that China's domestic manufacturers have increased their market share does not attest to the level of innovation and technological advancement of the industry. It remains a paradox in the strategy that the goal of qualitative upgrading is measured quantitatively.

The enormous amount of subsidies provided by the government has undoubtedly played an immense role in generating demand and supply for NEVs. While the NEV industry is benefitting largely from industrial policy through the rapid growth it is experiencing, in large due to the subsidies, it has not been without consequences. Government subsidies have typically been criticised for negative effects such as rent-seeking and protectionism. With the launch of MIC2025, the government, for example, issued a "white list" of batteries which were allowed in NEVs production and, therefore, qualified for subsidies. The list favoured domestic manufacturers and pulled Korean battery manufacturers, such as LG Chem and Samsung SDI, off the list of manufacturers approved for subsidies. The ban ended in 2017 (Kennedy 2018:10). However, in the meantime Chinese manufacturers, such as CATL and BYD, reported increased growth and ranked first and third, respectively, in the global shipment of batteries (Herh 2018). The subsidies have mainly benefitted (and been directed at) Chinese manufacturers, which is evidenced by the large market share domestic manufacturers have, albeit foreign manufacturers are generally more technologically advanced than the Chinese manufacturers in driving range on a single charge (Heller 2017). The generous subsidy scheme has, therefore, been an active policy instrument that has benefitted the objectives of the MIC2025 strategy by advancing domestic brands through protectionist policies. Moreover, subsidies are given directly to the manufacturers and in 2016 the government discovered fraud by a number of domestic manufacturers (Cui 2017). It

is estimated, that up to \$150 millions were paid in subsidies without any results to show (Reuters 2016). The issue with fraud in the industry has led to policy changes in the subsidy scheme. From 2017, the amount of subsidies have been decreased and the technological requirements for receiving subsidies have been increased. Such policy reorientation could be a reaction to the fact, that the quantitative targets have not yet generated the needed technological advancement in the industry. By 2021, the subsidies are to be phased out completely and the NEV market should run self-sufficiently, which indicates, that Chinese manufacturers are now in a position where they are competitive.

A “post-subsidy” NEV industry has, however, caused some concern among observers. As the scheme has been quite generous, there is a risk that manufacturers lose incentive to produce NEVs with the pullback of subsidies as demand will decrease and prices will rise. Removing subsidies provide the market with a more decisive role in allocating resources and could boost innovation. To ensure a peaceful transition to a “post-subsidy” era, the government has introduced a regulatory dual-credit policy for NEVs which by the end of 2020 will replace the subsidy scheme (Yeung 2018:7). With the policy, 10 per cent of the conventional passenger vehicle market have to consist of NEVs by 2019 and 12 per cent in 2020 (Wang et al. 2018:15). Consequently, if a manufacturer wishes to stay in the Chinese market after 2021, their sales of NEVs have to reach 12 per cent of their conventional vehicle sales. In other words, the government is utilising China’s advantage of an immense domestic market, which few foreign manufacturers can afford to leave, to introduce regulations that increase the demand and supply side of the NEV market to benefit the government’s objectives.

To sum up, the government has played an immense role in creating a market for NEVs through subsidies. The role of the state has been to stimulate supply and demand for NEVs through favourable subsidy schemes to reduce the financial cost of producing NEVs. Without government subsidies, the NEV industry would not have grown as rapidly as it has. The removal of subsidies is followed up by regulatory instruments and the NEV market will have to rely more on market-incentives as subsidies are removed. The post-subsidy era will show the robustness of the industry. However, the massive subsidies and the planned removal of

the same demonstrate MIC2025's basic principle of government-led and market-oriented development.

7.2.2.2 Government procurement

The government has stimulated demand through public procurements. In February 2016, the government required that 50 per cent of public vehicles purchases should be NEVs. If the public organisations fail to meet the demands, they will be subtracted subsidies for fuel and operation expenses (Heller 2017; European Chamber 2017:41). It is estimated, that Chinese governments have purchased up to 42 per cent of all NEV sales (Kennedy & Qui 2018). As China is not part of the WTO agreement on Government Procurement¹, the public procurement market for foreign manufacturers is generally closed and even favours domestic manufacturers in some industries, which is also apparent in the NEV industry (European Chamber 2017:16). While the Chinese NEV market is on the rise, sale numbers generally peak at the end of the year which is concurrent with when government procurement targets are set (Kennedy 2018:29).

7.2.2.3 Research and Development

Central to MIC2025 is R&D and promoting R&D activities through subsidies. In 2006, China released the “*National Medium- and Long-Term Science and Technology Development Plan 2006–2020*”, which centered innovation as the key driver of growth and engine to shift the export-led manufacturing growth model to a knowledge-based growth model (Fu 2015:16). MIC2025 is a continuation of that strategy, but with more wide-reaching goals.

R&D government subsidies generally have the positive effect of enhancing enterprises' R&D activities as it lowers the cost of engaging with R&D. Moreover, government subsidies can play an important role in attracting private fundings for R&D projects as government subsidies can have a positive signal effect by certifying the R&D projects an enterprise is

¹ The Agreement On Government Procurement under the WTO aim is to mutually open government procurement markets among its parties (WTO 2019)

undertaking (Wu 2017:340). There are 12 mentions of R&D in the MIC2025 paper and it is a objective in most of the strategic tasks of MIC2025. The goal is to increase R&D spending and attract R&D resources from multinational companies. Some further policy instruments encourage OEM's to build R&D centers that can transfer knowledge to domestic brands, make overall plans to promote R&D and industrialisation in the chosen industries, encourage enterprises to focus on R&D and promote cooperative R&D-projects between different actors in the industries. The promotion of R&D through different instruments is thus a central strategic goal of MIC2025 to induce innovation (MIC2025 2015).

The instruments by which the government is encouraging R&D activities are, however, one of the most contested parts of the MIC2025 strategy internationally. The US, for example, has stated that China is violating WTO-rules and stealing foreign technology and IP through the JV model and forced R&D localisation² (OTMP 2018). Another aspect of the strategy that has caused international distress, is MIC2025's immense focus on ODI. The MIC2025 paper states the following:

“Transform the utilization of foreign capital to emphasize joint ventures, collaborative development, outbound M&A, and recruiting top talent to work in China. Explore channels like industrial funds and state-owned capital gains, and implement outbound investment and merger reform to support “going out” by competitive industries, such as high-speed rail, electric power equipment, automotive and engineering equipment.” (MIC2025 2015:40).

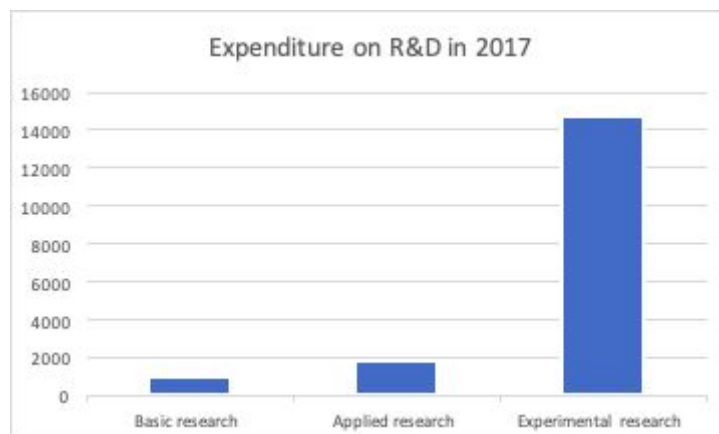
As the quote from the strategy stresses, ODI is strongly encouraged by the government. Furthermore, recruiting “top talent” internationally is emphasised. Chinese ODI has increased heavily since the release of MIC2025 (Wübbecke et al. 2016:51). In 2015, Chinese ODI overtook FDI and most ODI goes to Europe and the US to access technology, industrial experience and global distribution networks (WB 2017:82). ODI brings new capital and, therefore, has an immediate positive effect on industries in Europe and the US. It is mainly private enterprises in China that invest overseas, which emphasise that the private sector is central in the structural change towards a more innovation-driven growth model. However,

² Forced R&D localisation have been reported by some foreign companies, where they have been granted access to the Chinese market only if they set up R&D facilities in China (OTMP 2018:10).

the funding and ownership structures behind private enterprises often have connections back to the central government which have caused concern internationally (Wübbecke et al. 2016:53).

In 2017, China's gross domestic spending on R&D was 2,13 per cent and it has steadily risen over the years (National Bureau of Statistics 2018). China's 12th five-year plan (2015-2020) set the target of R&D spending at 2,5 per cent of GDP and in 2015 China accounted for 20 per cent of global R&D expenditures (China Power 2018). R&D expenditures have grown rapidly as a result of MIC2025. BYD, one of the biggest battery manufacturers, for example, has employed over 220.000 people in R&D activities and Chinese auto companies report to be investing about 2 per cent of their sales revenue in R&D. In 2015, 3000 invention patents were granted in the NEV industry alone (Kennedy 2018:19f).

Most of China's R&D activities are in experimental research and it is mostly private enterprises that engage in R&D. As enterprises mainly engage in experimental research, it could explain the lack of basic and applied research (Fu 2015:22). However, the R&D numbers indicate that China's efforts into R&D activities are at very advanced levels.



Expenditure on R&D measured by 100 million yuan

Source: National Bureau of Statistics China, 2018

As basic research is the main component of new innovation and advancing into new areas, the lack of expenditure into basic research can hinder the goal of innovating indigenous

brands and products. Basic research was, therefore, also a theme in President Xi’s speech at the 19th National Congress of the Communist Party, where he stated: “*We should aim for the frontiers of science and technology, strengthen basic research, and make major breakthroughs in pioneering basic research and groundbreaking and original innovations.*” (Xinhua 2017a). Xi’s statement reflects the government’s vision, however, the output of R&D activity does not reflect this. One reason for the disparity between the government’s vision and R&D output could lie in the very nature of MIC2025 as a top-down strategy that has clear quantitative targets for enterprises’ R&D expenditures. The risk is, that the MIC2025 strategy’s objectives are not aligned with industry-needs and capacities.

Major Manufacturing indicators

Category	Indicator	2013	2015	2020	2025
Innovation Capability	Internal R&D cost as a percentage of operating revenue of manufacturing firms (%)	0.88	0.95	1.26	1.68

Source: MIC2025 (2015).

The table above illustrates the MIC2025 strategy’s objectives for R&D expenditures. For enterprises, it is important to reach the objectives in order to comply with national policy and receive subsidies. The MIC2025 strategy’s objectives, however, could not only be pushing enterprises into premature turns towards smart manufacturing, but also be pushing technology that is not viable in the longer run. R&D subsidies in the NEV industry, for example, are mostly supporting lithium-ion batteries and less funding is provided to hydrogen fuel cells. A further reflection of the policy priorities of the government is, that BEVs receive higher subsidies than PHEVs. The government is, therefore, applying policy instruments that target specific technologies. If other technologies prove to be more efficient, it could force the industry into an unfavourable development path (Kennedy 2018:38). This is, however, too early to speculate in. What is important to note here is that the government promotes innovation top-down rather than bottom-up, which is markedly different from many other (Western) countries (Wübbecke et al. 2016).

To sum up, China's R&D expenditures are high and continues to increase. The government's policy instruments have undoubtedly had a vital influence on this development. MIC2025 showcase the increased role R&D has on China's path towards innovation-led growth. China's approach to R&D differs greatly from other countries, Western countries in particular. It is a top-down approach to innovation rather than bottom-up and this has sparked a critique of the state's role in fostering technological advancement. There is a concern that the approach can push the NEV industry towards technology that is not viable. However, China's R&D expenditure numbers indicate that China is at a very advanced level and the government has played an active role in fostering innovation through promoting ODI and granting R&D subsidies.

7.2.2.4 FDI through joint ventures

In 2015, China became the second biggest FDI destination in the world (WB 2018b:80), and the country has over the years promoted policies for attracting more FDI. The latest was announced in 2017, when the government released the document "Notice of the State Council on Several Measures to Promote the Growth of Foreign Investment" (Xinhua 2017b). The policy opened up for easing restrictions on FDI in the auto industry. Furthermore, while the model of JVs has initially been transferred into the NEV industry, there has been introduced several policies to ease JV restrictions as well. The policy-paper follows up on the objectives of MIC2025 which emphasise manufacturing openness. The strategy states:

"We will: Deepen foreign investment reform by developing guidelines for national treatment of foreign investment, improve mechanisms to manage the "negative industry list", and implement approval management models that contribute to a stable, transparent and predictable business environment." (MIC2025 2015:39).

The objectives were replicated by President Xi in his speech for the 2018 opening of the Boao Forum for Asia. Here, he stated:

"On manufacturing, we have basically opened up this sector with a small number of exceptions on automobiles, ships and aircraft. Now these industries are also in a position to open up. Going forward, we will ease as

soon as possible foreign equity restrictions in these industries, automobiles in particular.” (US-China Perception Monitor 2018).

The announcement from President Xi and the related policy-releases is somewhat of a turn from former industrial policy directed at the auto industry. Since the automobile industry was promoted as a “Pillar industry” in the 1980s, the industry has been one of the most restricted in China and FDI has been pursued through the policy of JVs between foreign partners and SOEs, also known as the “market for technology”-policy. The underlying logic for the policy has been to encourage R&D expenditures in SOEs. The JVs have, however, mainly produced foreign branded vehicles where the foreign partner provides the technology, vehicle designs and expert knowledge on manufacturing processes. Domestic partners provide mostly land, workers and capital. Profit is divided equally between the partners but the foreign partner has been confined to a maximum of 49 per cent of the ownership. Furthermore, foreign partners have been restricted to operating a maximum of two JVs (Howell 2018:1450; Kennedy 2018:6). The JV policy has been argued to impede indigenous innovation because domestic manufacturers have lacked the incentive to develop technological capabilities. These issues are also reflected in MIC2025, where it is stated, that the “[the] *Chinese manufacturing sector is large but not strong, with obvious gaps in innovation capacity*” (MIC2025 2015:5). Thus, on the one hand, the JV model has impeded the development of indigenous brands and innovation, but on the other hand, the JV model has been a successful protectionist policy instrument that has created a growing auto industry where Chinese brands have gained competitive market shares and tapped in on profits. But it remains necessary to acquire foreign technology to realise the ambitious goals of MIC2025 because domestic manufacturers still depend on foreign technology and continue to lack behind international counterparts (Wübbecke et al. 2016:37). This could be part of the explanation for the continued emphasis on the JV model and promotion of ODI, as mentioned in the previous section. MIC2025, however, continues to prioritise JVs as a mean to gain technology (MIC2025 2015:40). In the NEV industry, the government released a new regulation in 2017 called “Administrative Regulations on Market Access of New-Energy Automobile Manufacturers and Products”, which decided that manufacturers of NEVs would have to master the development and manufacturing of a complete NEV if they wanted access to the

Chinese market. Prior to that policy, JVs were accepted if they mastered just one of the technologies (Kennedy 2018:10). Importing the technologies instead of producing them in China will, therefore, be prohibited (European Chamber 2017:40). The policy is a pertinent example of how the government protects domestic manufacturers and it aligns with the MIC2025 strategy's goal of indigenous innovation. The regulation provoked concerns that foreign partners have to hand over their technology to Chinese partners, but the government has denied that technology transfer is a prerequisite to produce in China (Clover 2017). The result is, however, that manufacturers located in China will have to locate the entire production of NEVs in China.

Despite the continued emphasis on JVs, the MIC2025 strategy also emphasises the need for easing on JV restrictions. China's 'negative industry list', which is a list of industries where FDI is either prohibited or restricted, has been revised in order to deepen market access and improve innovation. In 2018, the government announced FDI-relaxation in the auto industry and as a result of that, foreign ownership restrictions on NEV's have already been removed. In 2020 foreign ownership restrictions on commercial vehicles will be removed in, and lastly, in 2022, foreign ownership restrictions on passenger cars will be removed. From 2022, foreign manufacturers can also set up more than two JVs (Schaub et al. 2018). There is a five year transition period from the announcement in 2018, after this, all restrictions will be removed. The removal of restrictions is a shift in China's industrial policy for the auto industry and represents a deepening of the "opening up"-policy, but only because the auto industry is now in a position to open up, as emphasised by President Xi in the above quote. The new environment can create a rise in competition as domestic manufacturers can no longer count on a foreign partner for acquiring the needed technology and will, therefore, have to invest in developing capabilities themselves. The policies, therefore, reflect that of infant industry protection. The government is granting subsidies that favouritise domestic manufacturers.

7.2.2.5 A more decisive role for the market? The continued role of SOEs

2018 was a major reform year for China and there has been a number of efforts to improve the business environment. The WB has ranked the country the 46th place in their EoDB-report, which is the highest ranked position China has ever had (WB 2018b). An improved business environment is arguably a reflection of the MIC2025 strategy's strategic goal that emphasise the market as the key driver for industrial development to enhance innovation. Therefore, the relaxation of FDI restrictions and the JV model can prove to be successful facilitating policy instruments that will enhance competition and strengthen the private sector (MIC2025 2015:9). Nonetheless, SOEs continue to play an important role in China's industrial policy and is part of the strategic task of generating "national champions". 47 of the 106 SOEs in China ranked the Fortune Global 500³ list in 2014 (Leutert 2016:86), emphasising their strategic importance for China's economy. The continued strong role of SOEs in Chinese manufacturing is a clear example of China's targeted policies. Chinese SOEs enjoy preferential treatment, as they have close government connections. The CEO's are government-appointed and SOEs more often receive subsidies and loans than private enterprises (Wu 2017:341). SOEs in China have, however, had major issues with corruption and lack of competitiveness due to the protection they enjoy, which has caused unfair treatment towards private enterprises. Reforming the structure of SOEs has, consequently, been on the government's agenda for years. As part of MIC2025, there is an emphasis on reforms of SOEs through mixed ownership. The strategy states that institutional reform will entail:

"Deepen[ening] state owned enterprise reform by perfecting corporation governance structures and developing the mixed ownership economy by further dividing industry monopolies and canceling unreasonable restrictions on the private economy." (MIC2025 2015:35f).

The mixed-ownership reform introduces private investment into SOEs and invites private investors as strategic partners, which is a further step from previous SOE reforms. Studies have concluded, that foreign enterprises gain more revenue from their internal R&D expenditures than SOEs do (Chen et al. 2017). Moreover, government R&D subsidies have a

³ A list over the World's biggest enterprises.

larger signal effect on private enterprises than on SOEs, meaning that government R&D subsidies directed at private enterprises are more likely to promote external R&D investments (Wu 2017). There are thus several benefits for the government in promoting R&D activities through private enterprises to advance innovation. It does not appear, however, that China is preparing to phase out SOEs in the near future. Xiao Yaqing, chairman of the State-owned Assets Supervision and Administration Commission that oversees Chinese SOEs stated in 2018:

“The fact that the state-owned sector remains the core of our economy was a result of four decades of economic reform and competition, there is no doubt that SOEs must remain core of the economy and they need to become bigger and stronger, as long as their growth is subject to market-based competition” (Ng 2018).

The continued importance of China’s SOEs as a route to generate “national champions” was evidenced in late 2018, as the SOE *FAW Group* (a vehicle manufacturer) was granted a line of credit worth more than \$145 billions due to economic hardship. The loan generated new scepticism about the government’s promises of a fair market-environment and giving private enterprises a greater role in the economy (Yu 2018).

The removal of barriers on JVs will, therefore, not necessarily lead to a complete restructuring of the auto industry nor give foreign and private enterprises a more decisive role. Foreign manufacturers can, in theory, get out of the JVs and become fully foreign owned, but as domestic manufacturers are equal partners, they will have a great influence on the development of the JVs. As now, the contracts are still long-term which probably will lead to continued partnerships, most of which are with SOEs. Accordingly, foreign manufacturers will still need to negotiate with Chinese authorities. Moreover, entry barriers to the NEV market continue to exist and the threshold for investing in NEV projects has been raised. Now, the construction scale for an investment project must contain a minimum of 100.000 NEVs or 5000 electric commercial cars (Schaub et al. 2018), which makes entry for new manufacturers extremely difficult. Lastly, the regulatory dual-credit system for the NEV industry will arguably create a situation where foreign manufacturers have no other option than to continue to engage in JVs with Chinese partners. Few, if any, are in a position to live

up to the requirements without going into partnerships with domestic manufacturers that have the production capabilities. As Yeung argues: *“no single global lead firm has the capability and capacity to reach the targeted NEV output set by the Chinese state within the allotted timeframe, and this creates a golden opportunity for the rise of potential lead firms in China”* (Yeung 2018:16).

The government’s policy instruments, therefore, seem to have the intended effect. Foreign manufacturers are changing business strategies in order to comply with China’s industrial policy. The dual-credit system has sparked manufacturers from Germany, the US, and South Korea to start production of NEVs in China. Toyota has even changed their business strategy from developing hydrogen vehicles to producing NEVs by 2020, as Toyota’s lead hydrogen model, the Prius, does not qualify for subsidies in China (Heller 2017). Manufacturers are, therefore, reacting strongly to MIC2025. China’s domestic market is a major advantage which the government is utilising to introduce the regulations. Therefore, foreign manufacturers are showing more willingness to play by China’s rules to gain access to their market, despite fears of technology transfer and a market-environment that favours China’s national champions.

To sum up, MIC2025 is emphasising a stronger role for the market. JV restrictions are removed and foreign manufacturers will, in theory, get greater autonomy in the industry. But regulatory policy instruments, such as the dual-credit system and the continued strong role for SOEs in industrial policy planning in China stress the continued strong role of the state compared to the market. China has a major advantage of a large domestic market, which they utilise to introduce policy instruments that support the strategy of developing national champions. The change in business strategies from foreign manufacturers reflect the influence of MIC2025. The JV model - and the easing of restrictions on it - indicate an ongoing policy in China of giving the market a decisive role, but only where Chinese brands have a competitive edge.

MIC2025, therefore, also has global repercussions. It actively strives to replace foreign technology with domestic technology and could cut foreign manufacturers completely out of

the market if MIC2025 is successful in reaching its objectives. Contested policy instruments that mandate technology transfer and support domestic manufacturers are causing concern. US automakers, as example, depend greatly on sales to China's domestic market. The US has therefore voiced their dissatisfaction with Chinese practices in the auto industry, and it adds to the current trade tensions between China and US (Heller 2017). The European Chamber of Commerce has labelled MIC2025 a "large-scale import substitution plan" that intends to nationalise key industries and diminish foreign businesses' influence and position (European Chamber 2017:12). The MIC2025 strategy and the role of the government, therefore, also reflects a model that is currently challenging global economic governance norms.

7.2.3 Sub-conclusion

The analysis of China's industrial policy, MIC2025, with an emphasis on the NEV industry has demonstrated the ambitious objectives of MIC2025 and how it emphasises the auto industry. Moreover, it has shown how the government has especially enacted the role as regulator through the employment of targeted policies.

MIC2025 is China's most ambitious industrial policy to date. The strategy is an attempt to deal with China's current challenges of slowing export and growth, pollution, fossil fuel dependency and growing wages concurrent with advancing political ambitions of becoming a world power. A mean to this end is targeting ten industries where China aims at a frontier technological position globally. The analysis shows, that the government's targeted policies released as part of the MIC2025 strategy have played an immense role in generating supply and demand for NEVs in China. China is utilising its advantage of a vast domestic market to introduce these instruments. While the market has been giving a more decisive role in some areas, by for example easing on FDI restrictions and promoting private enterprise innovation, the state is still the main source in allocating resources through the quantitative targets it sets. The international response China has received in relation to the promotion of MIC2025 reveals the repercussions of MIC2025 internationally. MIC2025 is an attempt to develop a competitive advantage in smart manufacturing through industrial policy. While the current results are inconclusive in regards to the different targets of MIC2025, what remains to

conclude is, that the government is actively altering the structure of economic activity to gain an advantageous position in manufacturing.

8. Made in China 2025 and Make in India compared

Authors: Cecilie & Katrine

The following section compares MIC2025 and MII based on their objectives, policy instruments, and the role of the state in China and India. The comparison serves to highlight the similarities and differences of the strategies and how the strategies relate to general trends of industrial policy today. The comparison shows, that China and India to some extent react to the same challenges that surround the environment in which industrial policy is conducted under today but in different ways. These challenges concern issues related to the manufacturing sector and sustainability.

The launch of MIC2025 and MII has certainly highlighted the recent upsurge of industrial policy. The analysis of MIC2025 and MII shows, that the state in both China and India is actively shaping the development of the manufacturing sector and the economy more generally through different policy instruments.

	Made in China 2025		Make in India	
Objective	World Manufacturing Superpower		World's Manufacturing Hub	
Focus areas	Innovation and technology-driven development	Green development	Improve the manufacturing sector's contribution to GDP	Create jobs

One of the key elements of industrial policy is its objectives. In other words, what is it that the government seeks to obtain through the use of industrial policy. In this sense, industrial policy is often a part of a wider development plan for the country (Peres & Primi 2009). In the case of China and India, they share a common focus on developing the manufacturing sector, however, they have different objectives for the development of the sector.

The above table serves to clarify and compare the objectives in MIC2025 and MII. Whereas the overall objective of MIC2025 is to become a world manufacturing superpower, MII has the overall objective of becoming the world's manufacturing hub. Thus, both strategies have a strong focus on the manufacturing sector. However, they are approaching the sector differently. Whereas MII seeks to shift the allocation of resources in favour of the manufacturing sector generally seen, MIC2025 seeks to shift the allocation of resources within the manufacturing sector towards high-tech quality. The focus on the manufacturing sector in China and India is, however, not unique to the two countries as more industrial policies are manufacturing-oriented within the recent revival of industrial policy. The explanation for a strong focus on the manufacturing sector is that the global manufacturing production chain has become increasingly fragmented and complex, which requires a more systematic and coordinated approach to manufacturing policy design (O'Sullivan et al. 2013). Developing a stable manufacturing base has long been associated with economic development and growth (Hallward-Driemeier & Nayyar 2017:9). This view is also demonstrated in MIC2025 and MII, where the governments in both China and India have highlighted the importance of the manufacturing sector for economic development. In MIC2025 it is emphasised by the following quote:

“Since the beginning of industrial civilization in the middle of the 18th century, it has been proven repeatedly by the rise and fall of world powers that without strong manufacturing, there is no national prosperity. Building internationally competitive manufacturing is the only way China can enhance its strength, protect state security and become a world power.” (MIC2025 2015).

Moreover, the importance of the manufacturing sector has also been emphasised in connection to the release of MII:

“(…) the contribution of the manufacturing sector in India is much below its potential. This situation is a cause of concern especially when seen in the context of transformation registered in this sector by other Asian countries in similar stages of development.” (NMP 2011).

Thus, MIC2025 and MII showcase the continued importance of the manufacturing sector. In addition, both strategies reflect how a systematic and coordinated approach to developing the sector is necessary to obtain wider objectives.

8.1 New objectives in Industrial Policy: Sustainability and inclusive growth

The analysis of China and India's industrial policies portrays, how industrial policy today has become more complex and includes more objectives than hitherto. Industrial policy objectives today do not only concern the issue of mere growth but to a larger extent centre around issues of how to ensure "*sustainable and inclusive development*" (UNCTAD 2018). This development has largely been formed by growing concerns over environmental issues and climate change. Furthermore, the financial crisis highlighted that there are limits to growth and resulted in an increased focus on issues such as inequality, demand, and its impact on consumption (ibid). MIC2025 and MII illustrate how industrial policy today has shifted from a focus on mere growth towards a focus on "generating societal welfare", as per Warwick's (2013) definition. Both MIC2025 and MII include efforts to ensure sustainable and inclusive development. Those are similar challenges in China and India that are likely to slow their growth (Dahlman 2012). Whereas China has a focus on ensuring sustainable, green development through the development of technological capabilities and green products, India has focused more on ensuring inclusive development by improving the business environment to create jobs and provide the workforce with the required skills. The objectives of sustainability are closely connected to some of the major challenges China and India are facing as a result of the development path each country has followed. Whereas China has followed a more traditional labour-intensive export strategy, India has followed a more knowledge-intensive service export strategy (Dahlman 2009:2). Both China and India's development strategies have delivered growth and have had a major impact on reducing poverty in the two countries, especially in China. One of the consequences, however, has been rising inequality which both China and India deal with. In addition, China specifically is challenged by its dependence on imports and export and insufficient technological capabilities which pose a challenge for further growth. India is specifically challenged by the impact of its education strategy with strong caste biases, that has emphasised high education for the few and has resulted in a generally low education level and to some extent an

underperforming manufacturing sector (Dahlman 2012). These challenges highlight some of the consequences of China and India's development strategies so far and efforts to overcome these challenges have formed MIC2025 and MII.

Therefore, the objectives in MIC2025 and MII provide a telling insight into how the governments in China and India, respectively, understand and aim to combat the major societal challenges they face and also how they prioritise these challenges. The objectives are important to understand industrial policy and illustrate how industrial policy today is closer connected to other policy areas that include social and environmental concerns (Warwick 2013).

Whereas MIC2025 and MII both exemplify an increased focus on the manufacturing sector, the strategies represent different approaches to supporting manufacturing competitiveness. Their approaches differ both to the degree in which they target and in the instruments they employ and how they employ them. Whereas China has selected 10 high-tech industries which are core drivers of MIC2025, India has selected 25 sector-specific industries which are core drivers of MII. All of China's selected industries are in high-tech manufacturing. India's selected industries are ranging from labour and capital-intensive industries to high-tech manufacturing industries. India's strategy is thus broader in reach than China's in terms of its approach to the manufacturing sector as it targets more industries. Therefore, both MIC2025 and MII reflect selective features, however, in different degrees. China's goal of technological upgrading targets more narrowly and the chosen industries represent high-tech industries that are major contributors to growth in other advanced economies (Wübbecke et al. 2016).

The conceptual framework applied in this thesis employs two categories of industrial policy. One is horizontal policies that aim to improve the business environment. The other is vertical policies that aim to alter the structure of economic activity toward sectors, technologies, or tasks. This categorisation is helpful in examining China and India's industrial policies, the policy orientation of the two and how they target through policy instruments.

India's focus on the manufacturing sector as a whole is reflected in the government's aim to improve the business environment through the application of horizontal policies. In contrast,

China has a more selective focus on the manufacturing sector reflected in the government's application of vertical policies. Therefore, the policy instruments in the MIC2025 are more selective and aim at structuring economic activity towards specific technologies and sectors. In other words, MIC2025 can be categorised as vertical and MII can be categorised as horizontal. This is not to say, that the MII is not selective, however, the policy instruments used are of more horizontal character than China's and thus reflect a minor degree of targeting compared to China.

This thesis has focused on the auto industry which, in both strategies, is selected as a core driver and subject to targeting. The auto industry represents an industry where both China and India have strengthened their comparative advantage and have become major players in the global market. Furthermore, the auto industry is a pertinent example of a manufacturing industry that is highly geographically fragmented (Amighini 2012). China and India's auto industries have, unlike their development strategies, followed a similar pattern of development in terms of timing and features of policy reforms. Although it is often stated that the process of liberalisation began a decade earlier in China than in India, India's reforms in the auto industry started around the same time as China began to liberalise its economy (Amighini 2012). This means that the auto industry is an industry where the two countries share some similarities both in development and in industrial policy instruments employed. In addition, it reflects how India's auto industry is more advanced compared to other industries in India's manufacturing sector.

Targeting has become a common feature of industrial policy and the auto industry is one of the most targeted industries globally (UNCTAD 2018). This is because the auto industry is commonly an industry that accounts for a significant part of GDP, employment generation, and opportunities for technological upgrading (Traub-Merz 2017). It is not only the auto industry's economic growth potential that makes the industry important for China and India's industrial policy strategies but also the industry's potential to support the broader objectives of MIC2025 and MII. Therefore, both strategies entail a specific focus on the auto industry. In China, this is reflected in how the NEV industry supports green development objectives and technological upgrading and innovation. Likewise, India's ambition to become the

world's manufacturing hub is reflected in the auto industry as this industry is a key contributor to India's manufacturing GDP. In addition, India's ambition to create formal skilled jobs is also reflected in the auto industry as this is an industry that holds a huge employment potential. Besides being a central industry in both MIC2025 and MII, both countries have developed specific policies to target the auto industry. These policies in both countries reflect specific instruments to obtain an ambition of technological advancement in the auto industry. This is exemplified by the AMP 2026, NEMMP and FAME in India and the several policies directed at the NEV industry in China. The two countries have both developed strong auto manufacturing capacities and MIC2025 and MII reflect efforts to further advance their domestic production capacities and invest in the development of new technologies.

8.2 Policy instruments

China and India share the strength of a major domestic market, which their economic development has reinforced by increasing consumption. This strength can be utilised in the policy instruments used to obtain the objectives of the strategies as foreign manufacturers find their markets highly attractive. Especially China is taking advantage of this compared to India. This section will not go into detail about every instrument employed in MIC2025 and MII but will compare where the strategies' instruments bear similarities and differences and put it in perspective to recent developments in industrial policy.

	Made in China 2025	Make in India
Policy instruments	<ul style="list-style-type: none"> - Incentives for FDI - SOEs - Directed finance/subsidies - R&D finance and subsidies - Direct state procurement programmes - Long-term development finance - Promotion of PP partnerships - Infrastructure 	<ul style="list-style-type: none"> - Ease of doing business - Infrastructure improvements - SEZs - Clusters - Incentives for FDI - IPR regime - Skills and training

The above table sums up the most essential policy instruments of MIC2025 and MII which this thesis has focused on. The list is therefore not a comprehensive overview of all industrial policy instruments employed by the Chinese and Indian government. One of the most striking observations from the table on policy instruments applied in China and India is the fact that China to a larger degree than India employs vertical policy instruments. Moreover, many of the policy instruments China uses are protectionist which is arguably policies that are more based in traditional understandings and applications of industrial policy. China continues to employ SOEs as a policy instruments to develop national champions and promote indigenous innovation. The continued strong support of SOEs conflicts with recent descriptions of industrial policy where it has been argued that industrial policy today is characterised by a shift away from the use of protectionist instruments to support the development of industries (UNCTAD 2018). SOEs have also been an important instrument in India's economic development, but India has introduced several policies, such as SEZs, to contain the growth of SOEs in order to strengthen the private sector (OECD 2015b). However, SOEs as a policy instrument is not used in the auto industry in India. India's strategy, with a focus on improving the business environment, does to a larger extent conform with recent descriptions of industrial policy, where it has been argued that industrial policy is characterised by being facilitative in order to promote the development of industries (UNCTAD 2018). China's continued use of SOEs and other protectionist policy instruments are heavily criticised for distorting market-forces. China plays by different rules and certainly stands out compared to India (and other countries) in the policy instruments they use. This is one explanation for the great international attention MIC2025 has attracted.

A common feature of MIC2025 and MII is their focus on investments and in particular on FDI. Attracting FDI has become a vital instrument to obtain a structural transformation of the production structure and growth trajectory. The impetus for promoting FDI is that it encourages new activities, such as industrial diversification and upgrading and build up of productive capacity (UNCTAD 2018). Investments and FDI are particularly important for the auto industry, as capital is important to obtain the strategies' objectives. Because China and India's industrial policies have different objectives their impetus and approach to promote investments differ from each other. Whereas India reflects a horizontal approach, China

reflects a selective approach. In India, a horizontal approach to promote investments is reflected in the government's effort to enhance overall competitiveness in the manufacturing sector through the build-up of productive capacity, including infrastructure. This means that the Indian government has focused on enabling and facilitating investments. In contrast, China's selective approach to promote investments is reflected in the government's effort to enhance competitiveness in specific high-tech industries through the promotion of technological upgrading and innovation in advanced manufacturing. This means that the Chinese government has focused on mandatory performance requirements and screening mechanisms to regulate investments. Especially mandatory performance requirements are a less commonly used instrument in industrial policy today (UNCTAD 2018:151). In this regard, China is utilising its strength of having a large domestic market which investors find attractive. An attractive market with a large consumer group gives China the advantage that foreign investors are more willing to conform to China's regulations in order to stay in the market, despite concerns of technology transfer and unfair market-competition (Heller 2017). FDI does, however, have its limitations because foreign investors are not willing to give up their core and latest technology. China's JV policy is a pertinent example of how Chinese domestic manufacturers have not been able to develop competitive technological capabilities due to lack of technological transfer from foreign partners. Therefore, the localisation of R&D activities and the development of own capabilities for national R&D have become more important for the development of domestic industries. In the auto industry, China and India still lack behind in technological advancement compared to leading OEMs. Efforts to acquire new technology is therefore important for the industries' growth. This can be done primarily by two routes: outward FDI and government support. Both approaches are employed by China and India concurrent with efforts to attract FDI (Traub-Merz 2017:34).

The analysis of MIC2025 and MII clarifies how investments and investment policy have become important instruments to steer the development of the economy. This tendency is clearly reflected in how both China and India aim at improving the business environment to attract investments. It further reflects how industrial policy today is more dependent on private investments in obtaining the objectives. In addition, different approaches to promote investments show how China and India are steering the development of their manufacturing

sectors in different ways and also how the same policy instrument is applied to obtain different aims linked to the manufacturing sector. This tendency, where investment policy takes a central role, is argued to have become a common feature of industrial policy during the recent revival. Here it is described how investment policy has become an instrument that “permeates” industrial policy strategies, which can partly be explained by an increased competition among countries for attracting FDI (UNCTAD 2018).

Overall the instruments applied in MIC2025 and MII reveal that industrial policy today includes a broader range of instruments that are applied in different ways according to the objectives the governments seek to obtain by applying them. The use of more comprehensive instruments implies that industrial policy is more than just protectionism today, however, protectionist instruments are still applied. Industrial policy instruments are used to deal with more wide-ranging issues and depend in large on the national context in which they operate. Therefore, it is difficult to state anything general about industrial policy by a mere look at the instruments applied.

8.3 The role of the state in China and India’s industrial policies

China and India’s strategies certainly highlight that the government in the two countries is actively shaping the trajectory of the political economy. They form two cases of development that challenge the conventional Washington Consensus in which state intervention and thus industrial policy was heavily criticised. The analysis shows, that the role of the government in conducting industrial policy differs from each other. Overall, the government in India has a facilitating role, whereas in China the government has a regulating role. It is, however, important to note that the one role does not exclude the other. The different roles of the governments suggest different ways to steer the development towards the objectives. This is reflected in the instruments MIC2025 and MII each apply and more importantly, it is reflected in *how* the instruments are applied. Thereby, the role of the state constitutes an important element in assessing industrial policy as the role of the state determines the form of the instruments applied to obtain the objectives.

Besides being determined by the objectives of an industrial policy, the role of the government is also determined by the political system of the country. China has a long tradition of a strong, authoritarian government that controls and steers the economy. The advantage of such a system has been China's ability to implement new policies quickly. Arguably, this is a major reason for China's successful performance, as they have been able to quickly adapt to structural changes (Dahlman 2012:53ff). Moreover, long-term strategic plans - such as MIC2025 - fit well into this institutional environment.

Contrary, India has a long tradition of being ruled by shifting coalition governments which have interrupted economic development and long-term planning in different ways. The coalition governments have had difficulties in carrying out reforms and if reforms were passed, they have been hard to implement (ibid). As a result of the election in 2014, the BJP won an outright majority and formed a single-party government. This paved the way for the Modi-led BJP government to launch its major national reform programme MII. In 2019, India heads for a national general election and the outcome of this election could influence how MII develops. India's institutional environment thus makes long-term planning and implementation of reforms more difficult than in China. Therefore, the national institutional environment has an impact on how industrial policy strategies are devised and carried out.

In different institutional environments, such as the Chinese and Indian, the rationale for state intervention also differs but share a consensus around finding a balance between the public and the private (Peres & Primi 2009:20). MIC2025 and MII demonstrate how the state is actively striving for such balance, but it entails different roles for the state. Since Xi's presidency began, there has been a move towards more centralisation and regulations of the political economy and MIC2025 is a clear reflection of this development. The legitimacy of the Communist Party lies in its success in generating economic growth, which is why the imbalances of the "old" development model, are being countered by more centralised efforts in order to ensure social stability (McNally 2013). Moreover, MIC2025's objectives revolve around issues of green development and technological advancement which are areas that to a larger extent are subject to market failure as the market in itself is not likely to produce the intended goals of the MIC2025 and requires a more regulating state.

Modi's government period has also been formed by a more centralised approach but has more so than China reflected neoliberal ideas. India has gone from a strong state that has played a

major role in the economy and was against big business, towards, since the 1990s, liberalising more parts of the economy but the state continues to have a strong presence in industry and services (Dahlman 2012:54). Therefore, the Indian government's steering of the economy has moved towards a more pragmatic approach where there is a strong presence of private actors in industrial development, which the auto industry is an example of (Amighini 2012). MII's objectives, contrary to MIC2025's, call for a more facilitating role as the focus is mainly on improving the business environment. Furthermore, while China is seeking to shift its model away from being export-led, India is seeking to enhance its position in exporting goods, which arguably place the role of the government in a more a facilitating role (Horner 2017).

China and India's industrial policies and the role of the government highlight, first, that states are taking an active role in steering the economy, but in different ways, and second, that the role is largely determined by the institutional setting it operates in as well as the strategy's objectives.

8.4 Sub-conclusion

The comparison between MIC2025 and MII shows that the strategies share similarities in some areas but are different in others. Moreover, the comparison has related MIC2025 and MII to recent trends in literature pertaining to industrial policy. In regards to the strategies' objectives, they share a common focus on the manufacturing sector but differs in the sense in which each strategy is approaching the manufacturing sector. In addition, both strategies include broader objectives than mere growth as they both seek to incorporate issues of sustainable and inclusive development. That the objectives are oriented towards the manufacturing sector and sustainability further show that MIC2025 and MII reflect common trends of industrial policy today. In regards to the instruments applied in the strategies, MIC2025 reflects an effort to alter the structure of economic activity toward specific industries and technologies which demands vertical policies. In contrast, MII reflects an effort to improve the business environment which demands more horizontal policies. These efforts are reflected in how each strategy applies policy instruments. Based solely on the

instruments applied in the strategies, it is difficult to say anything general about industrial policy besides the fact that both strategies employ various instruments which reflect the increasing complexity of industrial policy. Policy instruments should, therefore, be evaluated in combination with the overall objectives of a given industrial policy framework. Lastly, the role of the state in China and India has been examined in combination with MIC2025 and MIIs objectives and instruments and compared. Overall, the Chinese government reflects a more regulating role, whereas the Indian government reflects a more facilitating role. The role of the state is determined by the national context the industrial policy works under, hereunder the political system. India's more facilitative approach to a larger extent reflect industrial policy trends today, whereas China stands out as being more protectionist and by employing more regulative policy instruments.

9. Conclusion

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China and India are examples of two major players in the global economy that have used industrial policy to steer their economic development. The launch of MIC2025 and MII represents the continued relevance of industrial policy in emerging economies and adds to the telling, that industrial policy has experienced a revival. The financial crisis clarified the need for countries to rethink their approaches to steer the economy and industrial policy has in this environment become a legitimate policy tool. Industrial policy today is, therefore, a question of how rather than if it should be conducted. More countries are engaging with industrial policy and use wide-ranging policy instruments to obtain broader objectives. These developments have made the field more complex. This thesis has examined MIC2025 and MII in the context of the recent revival of industrial policy. In addition, it has provided an insight into the increased complexity that surrounds the field of industrial policy through an analysis and a comparison of the objectives, the policy instruments and the role of the state in MIC2025 and MII.

MIC2025 and MII share a common focus on the manufacturing sector. China wants to become the next manufacturing superpower, India aims to become the world's manufacturing hub. However, the analysis has clarified that the countries have different approaches to the sector and that the strategies do not bear as many resemblances as they appeared to at first. India has an overall focus on the manufacturing sector and aims to shift the allocation of resources towards the manufacturing sector through an improvement of the business environment. In contrast, China has a specific focus on high-tech manufacturing and aims to shift the allocation of resources towards those manufacturing industries by altering the structure of the economy towards specific industries and technologies. The fact that both China and India have launched policies directed at the manufacturing sector underlines the continued importance of a strong manufacturing base for further economic development. While strategies to develop the manufacturing sector remain central, MIC2025 and MII also entail an emphasis on sustainability and inclusive growth. This reflects a common trend in

industrial policy today where the objectives go beyond a focus on mere growth. It is interesting, that industrial policy in itself includes broader objectives, but what is more interesting is that these broader objectives are also included in core manufacturing strategies and that emerging economies include such objectives in their strategies. This certainly adds to the understanding of industrial policy as more complex.

The policy instruments applied in MIC2025 and MII have been analysed and compared. From the analysis it has become clear, that both the Indian and Chinese government are employing various policy instruments to obtain the objectives of the strategies. Whereas the instruments applied in MII reflect a horizontal approach, the instruments applied in MIC2025 reflect a more vertical approach. However, in regards to the auto industry both countries have applied various additional selective policies to support the industry. The auto industry thus represents an industry where China and India's approaches share more similarities than MIC2025 and MII overall do. Whereas MIC2025 and MII represent industrial policy strategies that concern the overall economy, additional industry specific policies are conducted concurrently. In the case of China and India's industrial policy for the auto industry, the industry specific policies work in conjunction with the overall industrial policy objectives.

From the analysis it has become clear, that the instruments alone do not reveal any new general trends in industrial policy besides the fact that instruments have become more wide-ranging.

In the case of China and India, policy instruments range from the more selective and vertical to horizontal. The analysis of MIC2025 demonstrates how China's approach is more regulative and vertical, while the analysis of MII demonstrates how India's approach is more facilitative and employs horizontal policy instruments. India's approach reflects current industrial policy trends more than China's approach does. The international reactions to MIC2025 is a clear expression of this and reflect the lack of consensus there exists on how to conduct industrial policy.

Through an empirical assessment of MIC2025 and MII, the thesis shows how such analyses have become increasingly important to understand the complexity of industrial policy.

However, more qualitative case studies are needed to grasp the new tendencies of industrial policy. Industrial policy has developed to include broader objectives, and instruments deriving from various policy areas are applied in various combinations. The concept of industrial policy has, therefore, come to have several understandings and meanings. This makes it relevant to ask, if industrial policy as concept has become too broad and encompasses too many aspects to say anything about industrial policy and how it is different from other policies. In other words, what makes industrial policy, industrial policy?

China and India's rapid growth and their increasing importance on the global scene make it more pertinent to understand how emerging states steer their economy through industrial policy. MIC2025 and MII exemplify how China and India will continue to put new pressures on the global economy through state-centric approaches to development. China and India's economic rise forces the global community to acknowledge China and India's increased power. The question is, if states can agree on how to run the future global environment in a peaceful manner or whether it will lead to conflict. The current trade dispute between China and the US reflects that there is a break in current norms where emerging economies, such as China and India, will assert themselves more. Moreover, institutions such as the WTO seems obsolete in this changed environment. It could lead to new frictions, if countries cannot find agreements on proper ways to steer the economy through means of industrial policy. This further adds to the importance of conceptualising and comprehending industrial policy.

Bibliography

- Ackerly, B. & True, J. (2010): “Doing Feminist Research in Political & Social Science”. Palgrave Macmillan.
- Alkon, M. (2018): “Do Special Economic Zones Induce Developmental Spillover? Evidence from India’s states”. *World Development* 107.
- Anderson, G.E. (2015): “Designated Drivers: How China Plans to Dominate the Global Auto Industry”. John Wiley & Sons Singapore Pte. Ltd.
- Amighini, A.A. (2012): “China and India in the International Fragmentation of Automobile Production”. *China Economic Review*, Vol. 23.
- Anand, R., Kochhar, K., & Mishra, S. (2015): “Make in India: which Exports Can Drive the Next Wave of Growth?”. International Monetary Fund.
- Andreoni, A. (2016): Chapter 9: “Varieties of Industrial Policy - Models, Packages, and Transformation Cycles”. In: Noman, A & Stiglitz J. E. (eds.): *Efficiency, Finance, and Varieties of Industrial Policy: Guiding Resources, Learning, and Technology for Sustained Growth*. Columbia University Press.
- Andreoni, A & Chang, H.-J. (2016): “Industrial Policy and the Future of Manufacturing”. *Economia a Politica*, Springer.
- Baldwin (1969): “The Case Against Infant-Industry Tariff Protection”. *Journal of Political Economy*, The University of Chicago Press Journals, Vol. 77, No. 3.
- Barnes, T. (2017): “Industry Policy in Asia’s Demographic Giants: China, India and Indonesia compared”. *The Economic and Labour Relations Review*, Vol. 28, No. 2.
- Bhat, T. P. (2014): “India: Structural Changes in the Manufacturing Sector and Growth Prospect”. Institute for Studies in Industrial Development, New Delhi.
- Bosworth & Collins (2008): “Accounting for Growth: Comparing China and India”. *Journal of Economic Perspectives*. Vol. 22, No. 1.
- Bowen, G.A. (2009): “Document Analysis as a Qualitative Research Method”. *Qualitative Research Journal*, vol. 9, no. 2. RMIT Publishing.
- Brandt, L. & Thun, E. (2016): “Constructing a Ladder for Growth: Policy, Markets, and Industrial Upgrading in China”. *World Development*, Vol. 80.
- Butollo, F. & Lüthje, B. (2017): Chapter 3: “‘Made in China 2025’: Intelligent manufacturing and work”. In (eds.) Briken, K., Chillas, S., Krzywdzinski, M. & Marks, A.: *The New Digital Workplace: How New Technologies Revolutionise Work*. Palgrave.
- CAAM (2018): “[NEV enjoyed strong development](#)”. Published January 2018, Located January 2019.
- Chang, H.-J. (2003): “Kicking Away the Ladder: The ‘real’ History of Free Trade”. *Foreign Policy in Focus*.

- Chang, H.-J. (2010): "Industrial Policy: Can We Go Beyond an Unproductive Confrontation?". Discussion Paper, No. 2010/1, Turkish Economic Association.
- Chang, H.-J. & Andreoni, A. (2016): "Industrial Policy in a Changing World: Basic Principles, Neglected Issues and New Challenges". Cambridge Journal of Economics 40 Years Conference
- Chaudhuri, S. (2013): "Manufacturing Trade Deficit and Industrial Policy in India". Economic & Political Weekly, Vol. XLVIII, No. 8.
- Chandra, P. (2015): "Pivoting Indian Manufacturing Policy Differently". India Review, Routledge, Vol. 14, No. 1.
- Chen, Z., Lee, C S-H., Xu, W. (2017): "R&D Efficiency in High-Tech Firms in China". MPRA Paper No. 80734.
- China Power (2016). "[Is Air Quality in China a Social Problem?](#)" China Power, Published February 2016, Updated October 2018, Located January 2019.
- China Power (2018). "[Is China a Global Leader in Research and Development?](#)" China Power. Published January 2018, Located January 2019.
- Chinese Ministry of Industry and Information Technology (MIIT) (2015): "[Made in China 2025 strategy for auto industry](#)". The State Council The People's Republic of China.
- Chow, G.C. (2015): "China's Economic Transformation". John Wiley & Sons Ltd. Third edition.
- Chu, W.W. (2011a): "How the Chinese Government Promoted a Global Automobile Industry". Industrial and Corporate Change, Vol. 20, No. 5.
- Chu, W.W. (2011b): "Entrepreneurship and Bureaucratic Control: the Case of the Chinese Automotive Industry". China Economic Journal, Vol. 4, No. 1.
- CII & EY (2016): "Making India a World Class Automotive Manufacturing Hub". Confederation of Indian Industry & Ernst and Young.
- Clover, C. (2017): "[Subsidies help China sell the most electric cars](#)". Financial Times. Published October 2017, Located January 2019.
- Cui, H. (2017): "[Subsidy fraud leads to reforms for China's EV market](#)". The International Council on Green Transportation. Published May 2017, Located January 2019.
- Dahlman, C.J. (2009): "Growth and Development in China and India: The Role of Industrial and Innovation Policy in Rapid Catch-Up". In (eds.) Cimoli, M., Dosi, G. & Stiglitz, J.E. (2009): Industrial Policy and Development: The Political Economy of Capabilities Accumulation. University Press Scholarship Online.
- Dahlman, C. (2012): "The World under Pressure: How China and India are Influencing the Global Economy and Environment". Stanford University Press.
- Dev, S. N. (2014): "['Make in India': A Lion's Step to boost manufacturing](#)", Government of India, Press Information Bureau. Published September 2014, Located March 2019.

- DMICDC (2019): “[About DMICDC](#)”. Delhi Mumbai Industrial Corridor Development Corporation, Located January 2019.
- DPIIT (2017): “[Consolidated FDI Policy](#)”, Department for promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India.
- DPIIT (2018): “[Make in India - brief about the scheme](#)”. Department for promotion of Industry and Internal Trade. Ministry of Commerce and Industry, Government of India.
- Eun, J-H. & Lee, K. (2002): “Is an Industrial Policy Possible in China?: The Case of the Automobile Industry. *Journal of International and Area Studies*, Vol. 9, No. 2.
- European Chamber (2017) “China Manufacturing 2025 – Putting Industrial Policy ahead of Market Forces”. European Chamber of Commerce in China.
- EY, FICCI & NASSCOM (2017): “[Future of Jobs in India: A 2022 perspective](#)”, Ernst and Young, Federation of Indian Chambers of Commerce and Industry, National Association of Software and Services Companies.
- Felipe, J., Kumar, U. & Abdon, A. (2013a): “Exports, Capabilities and Industrial Policy in India”. *Journal of Comparative Economics*, Vol. 41, Asian Development Bank, Levy Economics Institute of Bard College.
- Felipe, J., Kumar, U., Usui, N. & Abdon, A. (2013b): “Why has China succeeded? And why it will continue to do so”. *Cambridge Journal of Economics*, Vol. 37.
- Fu, X. (2015): Chapter 2: “Innovation in China since the reforms: An overview.”. In Fu, X. (2015): *China’s path to innovation*. Cambridge University Press.
- Fusheng, L. (2018) “[Subsidies for new energy cars to be cut again](#)”. China Daily. Published January 2018, Located January 2019.
- Garnaut, R. (2018): “40 years of Chinese Economic Reform and Development and the Challenge of 50”. In: (eds.) Garnaut, R., Song, L. & Fang, C.: *China’s 40 years of Reform and Development 1978-2018*. Australian National University Press.
- Geetha, R. (2016): “‘Make in India’ and Ease of Doing Business”. *International Journal of Science and Research*, Vol. 5, No. 1.
- GoI (2016): “[Revision of Policy Towards Heavy Industries](#)”. Press Information Bureau, Government of India, Ministry of Heavy Industries & Public Enterprises.
- GoI (2018): “[Scheme for Investment Promotion](#)”. Department for promotion of Industry and Internal Trade, Government of India.
- Green, R. A. (2014): “Can ‘Make in India’ Make Jobs? The Challenges of Manufacturing Growth and High-quality Job Creation in India”. James A. Baker III Institute for Public Policy, Rice University.
- Hallward-Driemeier, M. & Nayyar, G. (2017): “The Global Manufacturing Landscape”. In: Hallward-Driemeier, M. & Nayyar, G.: *Trouble in the Making? The Future of Manufacturing-led Development*. World Bank Publications.

- Heller, M. (2017): “[Chinese Government Support for New Energy Vehicles as a Trade Battleground](#)”. The National Bureau for Asian Research. Published September 2017, Located March 2019.
- Herh, M. (2018): “[China Excludes EVs with Korean Batteries from Subsidy List Again](#)”. BusinessKorea. Published July 2018, Located January 2019.
- Horner, R. (2017): “Beyond facilitator? State Roles in Global Value Chains and Global Production Networks”. *Geography Compass*, No. 11.
- Howell, S.T. (2018): “Joint ventures and Technology Adoption: A Chinese Industrial Policy that Backfired”. *Research Policy*, Vol. 47.
- IMF (2018) “[Real GDP growth](#)”, International Monetary Fund, Located February 2018.
- Kale, D. (2012): “Sources of Innovation and Technology Capability Development in the Indian Automobile Industry”. *Institutions and Economies*, Vol. 4, No. 2.
- Kapur, D. (2014): “India’s Economic Development”. In (eds.) Currie-Alder, B., Kanbur, R., Malone, D.M. & Medhora, R.: “International Development: Ideas, Experience and Prospects”, Oxford University Press.
- Kaul, N. (2017): “Rise of the Political Right in India: Hindutva - Development Mix, Modi Myth, and Dualities”. *Journal of Labor and Society*, Vol. 20.
- Kennedy, S. (2018): “China’s Risky Drive into New-Energy Vehicles”. Center for Strategic and International Studies.
- Kennedy, S. & Qui, M. (2018): “[China’s Expensive Gamble on New Energy Vehicles](#)”. Center for Strategic and International Studies. Published November 2018, Located January 2019.
- Kohli, A. (2006): “Politics of Economic Growth in India, 1980-2005: Part I: The 1980s”. *Economic and Political Weekly*, Vol. 41, No. 13.
- Kumar, N. & Kaur, K. (2015): “Changing Structure of Indian Automobile Industry”. *International Journal of Current Research*, Vol.7, No. 7.
- Landman, T. & Carvalho, E. (2016): “Issues and Methods in Comparative Politics - An Introduction”. Routledge.
- Leutert, W. (2016) “Challenges Ahead in China’s Reform of State-Owned Enterprises”. *Asia Policy*, No. 21.
- Li, Y., Georghiou, L. & Rigby, J. (2015): Chapter 7: “Public Procurement for Innovation Elements in the Chinese New Energy Vehicles Program”. In: (eds.) Edquist, C., Zabala-Iturriagoitia, J.M., Vonortas, N.S. & Edler, J. (2015): *Public Procurement for Innovation*. Edward Elgar Publishing, Incorporated.
- Li, Y.S., Kong, X.X. & Zhang, M. (2016): “Industrial Upgrading in Global Production Networks: The Case of the Chinese Automotive Industry”. *Asia Pacific Business Review*, Vol. 22, No. 1.

- Lin, J. & Chang, H.-J. (2009). “Should Industrial Policy in Developing Countries Conform to Comparative Advantage or Defy it? A debate between Justin Lin and Ha-Joon Chang”. *Development Policy Review*, Vol. 27, No. 5.
- Lin, J. (2012): Chapter 1 “New Structural Economics: A Framework for Rethinking Development.” In: Lin, J. (2012): *New Structural Economics: A Framework for Rethinking Development and Policy*. World Bank Publications.
- Lin, J. & Monga, C. (2012): Chapter 3 “Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change.”. In: Lin, J. (2012): *New Structural Economics: A Framework for Rethinking Development and Policy*. World Bank Publications.
- Liu, Y. & Kokko, A. (2013): “Who Does What in China’s New Energy Vehicle Industry?”. *Energy Policy*, Vol. 57.
- Lo, D. & Wu, M. (2014): Chapter 11, “The State and Industrial Policy in Chinese Economic Development.” In: (eds.) Salazar-Xirinachs, J.M., Nübler, I. & Kozul-Wright, R.: *Industrial Policy, Productive Transformation and Jobs: Theory, History and Practice*. International Labour Office.
- Lucas, L & Feng, E. (2017): “[China’s Push to Become a Tech Superpower Triggers Alarms Abroad](#)”, *Financial Times*, Published March 2017, Located November 2018.
- Malkin, A. (2018): “Made in China 2025 as a Challenge in Global Trade Governance – Analysis and Recommendations”. Center for International Governance Innovation, CIGI Papers, No. 183.
- Mallet, V. & Crabtree, J. (2014): “[India: Industrial Evolution](#)”. *Financial Times*, Published May 2014, Located February 2019.
- McBride, J. & Chatzky, A. (2019): “[Is ‘Make in China 2025’ a Threat to Global Trade?](#)”. Council on Foreign Relations. Located January 2019.
- McNally, C.A. (2013): “Refurbishing State Capitalism: A Policy Analysis of Efforts to Rebalance China’s Political Economy”. *Journal of Current Chinese Affairs*, Vol. 4.
- MHIPE (2018): “[Annual Report 2017-18](#)”. Department of Heavy Industries and Public Enterprises, Government of India. Located January 2019.
- MIC2025 (2015): “Made in China 2025 – Charting the 10-Year Transformation of Chinese Industry”. Chinese State Council.
- MII (2014): “[Make in India](#)”, Department for Promotion of Industry and Internal Trade, Government of India.
- Ming, L., Chen, Z., Wang, Y., Zhang, Yan & Zhang, Yuan (2013): “China’s Economic Development: Institutions, Growth and Imbalances”. Edward Elgar Publishing Limited.
- MoCI (2018): “[India Improves Rank by 23 Positions in Ease of Doing Business](#)”, Ministry of Commerce & Industry, Government of India, Press information Bureau, Published October 2018, Located January 2019.
- MSDE (2015) “[National Policy for Skill Development and Entrepreneurship](#)”.

- Ministry of Skill Development and Entrepreneurship, Government of India.
- Mukherjee, A., Pal, P., Deb, S., Ray, S., Goyal, T. M. (2016): “Special Economic Zones in India: Status, Issues and Potential”, Springer.
- Nam, C. W., Nam, S., Steinhoff, P. (2017): “Modi’s ‘Make in India’ Industrial Reform Policy and East Asian Flying-Geese Paradigm”. Center for Economic Studies & Ifo Institute, Working Paper No. 6431.
- National Bureau of Statistics China (2018): “Expenditure on R&D in 2017”.
- Naudé, W. (2010): “Industrial Policy Old and New Issues”, UNU-WIDER Working Papers.
- Noman, A & Stiglitz, J. E. (2016): “Learning, Industrial, and Technology Policies: An Overview”, In: Noman, A & Stiglitz J. E. (eds.): Efficiency, Finance, and Varieties of Industrial Policy: Guiding Resources, Learning, and Technology for Sustained Growth. Columbia University Press
- Ng, E. (2018): “[China Must Shrink State-Owned Enterprises if It Wants Reforms to Succeed, Says Former WTO Chief.](#)” South China Morning Post, Published April 2018, located January 2019.
- NMP (2011): “[National Manufacturing Policy](#)”. Department for promotion of Industry and Internal Trade, Government of India.
- OECD (2015a): “China’s 10 years in the WTO: Sustaining Openness-Based Growth Into the Future”. In: (ed.) Luolin, W.: China’s WTO Accession Reassessed. Routledge.
- OECD (2015b): “State-Owned Enterprises in the Development Process”. OECD Publishing.
- OICA (2017): “[2017 Production Statistics](#)”. International Organisation of Motor Vehicle Manufacturers.
- O’Sullivan, E., Andreoni, A., López-Gómez, G. & Gregory, M. (2013): “What is New in The New Industrial Policy? A manufacturing Systems Perspective”. Oxford Review of Economic Policy, Vol. 29, No. 2.
- OTMP (2018): “How China’s Economic Aggression Threatens the Technologies and Intellectual Property of the United States and the World”. White House Office of Trade and Manufacturing Policy.
- Pack, H. & Saggi, K. (2006): “Is there a Case for Industrial Policy? A Critical Survey”. The World Bank Research Observer.
- Palshikar, S. & Suri, K.C. (2017): “Epilogue: Critical Shifts in 2014 Election” In: (eds.) Palshikar, S., Kumar, S. & Lodha, S.: Electoral Politics in India: The Resurgence of the Bharatiya Janata Party. Routledge, New York.
- Pawar, S. (2018): “Trajectory of Manufacturing Industry in India since Post Reform Period”. International Journal of Social Science Studies, Vol. 6, No. 8.
- Peres, W. & Primi, A. (2009): “Theory and Practice of Industrial Policy. Evidence from the Latin American Experience”. United Nations Publication.

- Reuters (2016): “[China Punishes 5 Auto Firms for Green Car Subsidy Violations](#)”. Fortune. Published September 2016, Located January 2019.
- Rodrik, D. (2004): “Industrial Policy For The Twenty-first Century”, Harvard University, John F. Kennedy School of Government.
- Rodrik, D. (2009): “Industrial Policy: Don’t ask why, ask how”. Middle East Development Journal, Routledge, Vol. 1, No. 1.
- Rodrik, D. & Subramanian, A. (2005): “From ‘Hindu Growth’ to Productivity Surge: The Mystery of the Indian Growth Transition”. IMF Staff Papers, Vol. 52, No. 2.
- Ruparelia, S. (2015): “Minimum Government, Maximum Governance: The Restructuring of Power in Modi’s India”, South Asia: Journal of South Asian Studies, Vol. 38, No. 4.
- Saikia, D. & Shukla V. (2012): Chapter 2 “India’s Road to Economic Reforms” In: (ed) Saikia, D.: Indian Economy after Liberalization: Performance and Challenges. SSDN Publishers & Distributors, New Delhi.
- Salazar-Xirinachs, J. M., Nübler, I. & Kozul-Wright, R. (2014): “Introduction: Industrial Policy, Productive Transformation and Jobs: Theory, History and Practice”, In: (eds.) Salazar-Xirinachs, J. M., Nübler, I. & Kozul-Wright, R.: Industrial Policy, Productive Transformation and Jobs: Theory, history and Practice. International Labour Office.
- Schaub, M., Zhao, A.K. & Mallesons, W. (2018) “[Impact of China Removal of Foreign Ownership Restrictions in Auto Sector](#)”. China Law Insight, Published July 2018, Located January 2019.
- Seawright, J. & Gerring, J. (2008): “Case selection techniques in Case Study Research - A Menu of Qualitative and Quantitative Options”. Political Research Quarterly, Vol. 61, No. 2, University of Utah.
- Shukla, K., Purohit, M., Gaur, S. (2017): “Studying ‘Make in India’ from the Lens of Labour Reforms”. Management and Labour Studies.
- SIAM (2016): “[Automotive Mission Plan: 2016-2026 \(A Curtain Raiser\)](#)”. Society of Indian Manufacturers.
- SIAM (2017): “[Key Policy and Regulatory Initiatives in Indian Automobile Industry since 2006: Impact, Challenges and Opportunity](#)”. In: Society of Indian Automobile Manufacturers (SIAM): SIAM Policy Brief. Published September 2017, Located December 2018.
- Singh, J. & Cheema, M. D. (2015): “Globalization and Industrial Development in Developing Countries: Evidence from India’s Automobile Industry”. Productivity Vol. 56, No. 2.
- Singh, A. & Jaiswal, K. K. (2018): “Ease of Doing Business in India: A Vision of Make in India”. Economic Affairs, Vol. 63, No 1.
- Stacey, K. (2018): “[India regains title of World’s fastest-growing major economy](#)”, Financial Times, Published February 2018, Located October 2018.

- Stiglitz, J.E., Lin, J.Y. & Monga, C. (2013): “The Rejuvenation of Industrial Policy”. Policy Research Working Paper No. 6628
- Stiglitz, J.E., Ocampo, J.A., Spiegel, S., Ffrench-Davis, R. & Nayyar, D. (2006): Chapter 1: “Introducing the Key Questions”. In: (eds.) Stiglitz, J.E., Ocampo, J.A., Spiegel, S., Ffrench-Davis, R. & Nayyar, D.: Stability with Growth: Macroeconomics, Liberalization and Development. Oxford University Press.
- Szalavetz, A. (2015): “Post-crisis Approaches to State Intervention: New Developmentalism or Industrial Policy as usual?”. Competition and Change, Vol. 19, No. 1.
- Tachiki, D. S. (2012): “The Political Economy of the Indian Automobile Industry - A Research Note”. Faculty of Business Administration, Tamagawa University.
- Tiwari, R., Herstatt, C. & Ranawat, M. (2011): “Benevolent Benefactor or Incentive Regulator? Tracing the Role of Government Policies in the Development of India’s Automobile Industry”. Policy Studies 58.
- Thakker, A. (2018): “[India Rises in Ease of Doing Business Rankings, But Reforms Still Pending](#)”, The Diplomat, Published November 2018, Located January 2019.
- Traub-Merz, T. (2017): “The Automotive Sector in Emerging Economies: Industrial Policies, Market Dynamics and Trade Unions - Trends and Perspectives in Brazil, China, India, Mexico and Russia”. Friedrich-Ebert-Stiftung.
- Tripathi, V. & Rao, K. B. (2016): “Progress Card of the Indian Automobile Industry”, Journal of Business Strategy, Vol. 13, No. 3.
- UNCTAD (2016): “Structural Transformation and Industrial Policy”. United Nations Conference on Trade and Development, New York and Geneva.
- UNCTAD (2018): “World Investment Report 2018 - Investment and New Industrial Policies”. United Nations Publications.
- USCBC (2015): “Unofficial USCBC Chart of Localization Targets by Sector Set in the MIIT Made in China 2025 Key Technology Roadmap”.
- US-China Perception Monitor (2018): “[Transcript: President Xi Addresses the 2018 Boao Forum for Asia in Hainan](#)”. Located January 2019
- Wang, Y., Zhao, F., Yuan, Y., Hao, H. & Liu, Z. (2018): “Analysis of Typical Automakers’ Strategies for Meeting the Dual-Credit Regulations Regarding CAFC and NEVs”. Automotive Innovation, Vol. 1.
- Warwick, K. (2013), “Beyond Industrial Policy: Emerging Issues and New Trends”, OECD Science, Technology and Industry Policy Papers, No. 2, OECD Publishing
- WEF (2018) “[The world's biggest economies in 2018](#)”, World Economic Forum, Published April 2018, Located February 2018.
- WB (2013): “[Doing Business 2014: Understanding Regulations for Small and Medium-Size Enterprises](#)”, Washington DC, World Bank.
- WB (2014): “[Doing Business 2015: Going Beyond Efficiency](#)”, Washington DC, World Bank.

- WB (2017): “China Systematic Country Diagnostic – Towards a More Inclusive and Sustainable Development”. World Bank Group.
- WB (2018a): “[Doing Business 2018: Reforming to Create Jobs](#)”, Washington DC, World Bank.
- WB (2018b): “[Doing Business Report: China Carries Out Record Business Reforms, Edges into Top 50 Economies](#)”. Published October 2018, Located January 2019.
- WB (2019): “[Doing Business 2019: Training for Reform](#)”, Washington DC, World Bank.
- Wikimedia Commons (2019a): “[Icon for geography stubs about India](#)”. Wikimedia Commons, Located March 2019.
- Wikimedia Commons (2019b): “[Flag-Map of PRC](#)”. Wikimedia Commons, Located March 2019.
- WTO (2019) “[Agreement of Government Procurement](#)”. World Trade Organization, Located January 2019.
- Wu, A. (2017): “The Signal Effect of Government R&D Subsidies in China: Does ownership matter?”. *Technological Forecasting & Social Change*, No. 117.
- Wübbecke, J., Meissner, M., Zenglein, M.J., Ives, J. & Conrad, B. (2016): “Made in China 2025 – the Making of a High-Tech Superpower and Consequences for Industrial Countries”. *Mercator Institute for China Studies*, no. 2.
- Xinhua (2017a): “[Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era](#)”. Xinhua, Located January 2019.
- Xinhua (2017b): “[China to Promote Foreign Investment Growth](#)”. Xinhua, Published August 2017, Located January 2019.
- Yang, D., Chin, T., Liu, R.H. & Yao, Z. (2017): “Policy Support for Own-Brand Innovation in China’s Auto industry: Panacea or Placebo?”. *Chinese Management Studies*, Vol. 11, No. 1.
- Yeung, G. (2018): ““Made in China 2025’: the Development of a New Energy Vehicle Industry in China”. *Area Development and Policy*.
- Yu, X. (2018): “[China’s State-Owned Car makers Gets a Huge Lifeline but what about Private Firms?](#)”. *South China Morning Post*, Published October 2018, Located January 2019.
- Yusuf, S. & Nabeshima, K. (2010): “Changing the Industrial Geography in Asia: The Impact of China and India”. The World Bank, Washington, D. C.
- Zhang, L. (2014): Chapter 2: “Industrial Restructuring and Labor Force Transformation in the Chinese Automobile Industry”. In: Zhang, L.: *Inside China’s Automobile Factories - The Politics of Labor and Worker Resistance*. Cambridge University Press.

- Zhang, L. & Liu, Y. (2016): “Analysis of New Energy Vehicles Industry Policy in China’s Cities from the Perspective of Policy Instruments”. *Energy Procedia*, Vol. 104.
- Zhang, X., Liang, Y., Yu, E., Rao, R. & Xie, J. (2017): “Review of Electric Vehicle Policies in China: Content Summary and Effect Analysis”. *Renewable and Sustainable Energy Reviews*, Vol. 70.