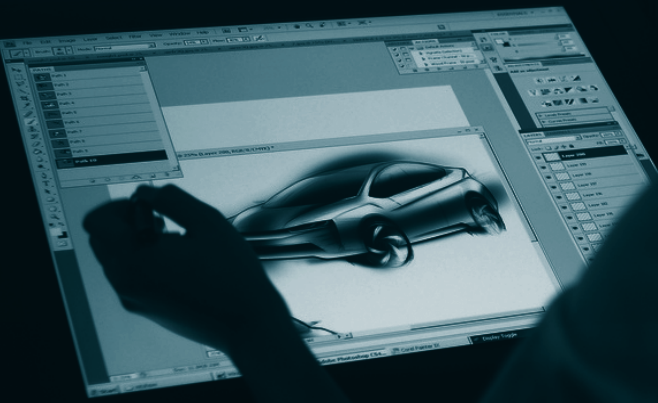




Rudolf Traub-Merz (ed.)

The Automotive Sector in Emerging Economies: Industrial Policies, Market Dynamics and Trade Unions

Trends & Perspectives in Brazil, China, India, Mexico and Russia

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Imprint

The Automotive Sector in Emerging Economies: Industrial Policies, Market Dynamics and Trade Unions. Trends & Perspectives in Brazil, China, India, Mexico and Russia

Edited by Rudolf Traub-Merz

Published by: Friedrich-Ebert-Stiftung, Hiroshimastraße 28, 10785 Berlin

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Friedrich Ebert Stiftung

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Design/Typesetting: pertext, Berlin

Cover pictures: Digital sketching of a concept car (dboyfotopages, Duplex, CC-BY-2.0)

Montage (BMW Werk Leipzig, Duplex, CC-BY-SA-2.0)

ISBN: 978-3-95861-597-7

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Foreword

The global automotive industry has been enjoying strong growth and profitability in recent decades. But rather than witnessing a period of stability, the sector has been marked by deep structural changes. Although the industry is dominated by large transnational companies from a few countries virtually all of them outsource substantial segments of their vehicle production within national economies and across borders to such an extent that supplier industries have expanded to a size not much smaller than the OEMs (original equipment manufacturers) themselves. Today, automotive manufacturing is based on a global chain of supplies of such magnitude that the traditional concept of international trade has been challenged and the question raised of whether national governments still have enough political leverage to regulate investment and production capacities, even if they wanted to.

During this period of development of global value chains several emerging economies have identified automotive manufacturing as a strategic pillar in their endeavour to catch up with the developed countries. They use economic policy instruments to localise manufacturing capacities and have to decide whether to follow the paths of import substitution or of export promotion. After clothing and textiles, household goods and electronics, automotive manufacturing may become the next area in which newly industrialising countries manage to capture large proportions of global producing capacities from the previously dominant North.

Trade unions look on at the spectacle of the automotive industry's globalisation with concern, but also hope. Car factories have always been venues for strong union organisation, but outsourcing poses a major challenge to membership and bargaining power. Relocation of production across borders, however, provides opportunities for union capacity-building in the countries receiving the investment. Unions have to build up transnational forms of solidarity to organise industrial relations along global value chains.

But just when emerging economies appear to be unstoppable in their endeavour to become the new centres of automotive manufacturing a new round of technological innovations is around the corner. The electrification of the power drive, the networked car and autonomous driving may have the power to shuffle the cards anew and to bring new actors, products and markets into the global automotive business.



In order to discuss the current challenges and the future potential in establishing domestic capacities the Friedrich-Ebert-Stiftung (FES), through its offices in Brazil and Russia, organised an international workshop on the »Development of the automotive sector in emerging economies and its impacts on industrial relations and trade union strategies«, held in Sao Paulo on 4 and 5 November 2015. The discussion was conceptualised within the framework of country reports that featured key car markets, namely China, India, Russia, Brazil and Mexico.

Participants were enthusiastic about the quality of the reports and the debates emanating from them, so the FES decided to upgrade the reports and publish them as an electronic book, which can be easily downloaded.

We are grateful to all who have contributed to this project and helped to shape this book with their presentations and inputs.

*Tina Hennecken & Rudolf Traub-Merz**

* Tina Hennecken is FES Country Representative for Mozambique and former FES Project Director, Brazil; Rudolf Traub-Merz is Consultant and former FES Country Representative for Russia.



Emerging Economies and the Global Automotive Industry

Policies between Import Substitution, Global Supply Chains and the Emergence of Concepts of New Mobility

Rudolf Traub-Merz

1 Introduction

The automobile industry is one of the biggest industrial sectors in the world. If one includes the economic activities up- and downstream of actual manufacturing the sector's global value added stands at around 5–10 per cent.¹ Worldwide there are around 500 million registered passenger cars. Their number continues to grow and by 2030 this will triple (Bartel et al. 2015: 6).

Automobile manufacturing has undergone numerous rapid upheavals during the over 100 years of its existence. The major ruptures have been marked by shifts in production and demand and technological inventions and innovations in production methods. Within a few years of the end of the Second World War the automobile had grown to become the most important mass consumption good, assumed the role of a status symbol in blue-collar households and supplanted bicycles, motorcycles and trams – a process sometimes aided and abetted by automobile manufacturers, such as General Motors² – and finally also rail transport as the main means of mass transportation.

1 If one also includes in upstream activities the whole energy industry for the supply of fossil combustion materials the automobile industry would probably be the biggest economic sector in the world. For the automobile producing countries it is one of the most important sectors in manufacturing industry. In Germany in 2012 761,000 or 13 per cent of all employees were working in assembly plants in the manufacturing sector. If one includes the 1 million or so employees in Germany's supply industry the automobile industry (not including energy) accounts for around 30 per cent of manufacturing industry (cf. Bohrmann et al. 2015: 6).

2 In 1950 GM was found guilty of conspiracy in the USA. GM had bought up electric trams in order to destroy them and to convert public transport to GM buses (cf. Snell n.d.).



In the meantime, emerging economies, after a few decades' delay, are copying the »auto-model« of the industrialised countries. Demographic profiles, industrial manufacturing and growth markets are shifting to »the South«. Automobile manufacturing is one of the driving factors in the effort to catch up with the »industrial North«.

The embrace of automobile transport and its leaps forward have occurred in different regions at different times. While the first countries and cities in the industrialised zones took measures as early as the 1970s to restrict individual motorisation and its strains, other countries had only just begun to convert their urban centres to prioritise the automobile.

The global risk of climate change has for some time fuelled debate and steered planning in the direction of a less environmentally harmful mobility model. Fewer people now believe that the fuel-driven automobile can be made the dominant means of transport for the whole of humanity, however. Cars have a chance of remaining a major pillar of modern mobility in the medium and long term only if their technology can become emissions-free and establish a new symbiosis with public transport and other forms of mobility.

Since the oil price collapsed and cost considerations and environmental protection are subject to diverging assessment criteria customers and firms appear to have become less willing to strike out on new mobility paths. Even though no one seriously believes that the global pace of car manufacturing and usage of the past two to three decades can be maintained for long without technological remoulding in the direction of energy efficiency and environmental protection, for many firms and transport planners muddling along in the same old fashion is the order of the day.

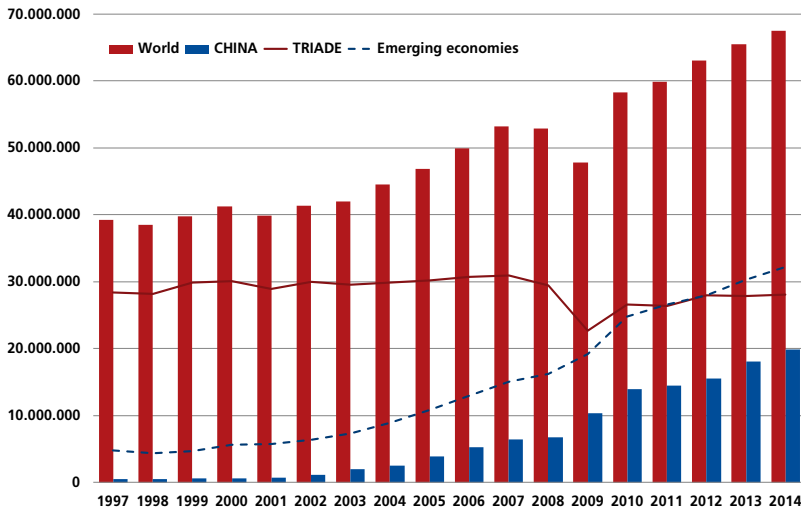
2 Trends in the Global Car Market

2.1 Production and Markets Move to Emerging Economies

Dramatic upheavals have been occurring on the global automobile market for a number of years now. Up to around 2000, passenger cars were largely built and sold in the traditional automobile countries, which are occasionally referred to as the Triad: USA/Canada, the EU15 and Japan/Korea. Since then the balance has shifted fundamentally on the world market on both sides of the economic equation. While demand in the Triad appears largely saturated the markets of other regions – especially the so-called emerging economies – are enjoying strong growth. However, not only is demand



Figure 1: Global passenger car production, 1997–2014



Notes: Countries are included only if during the period 2010–2014 they had production of 1 million or more passenger cars in at least one year. The Triad includes USA/Canada; France/Germany/Spain/UK; Japan/South Korea. Emerging countries include: Brazil, Mexico, India, Indonesia, Iran, China, Russia and the Czech Republic.

Source: OICA; author's calculations.

»migrating« to other regions of the world, but manufacturing is moving with it to the countries of the new purchasers. By the global financial crisis of 2008/2009 the emerging economies had already largely caught up with the traditional automobile countries in terms of manufacturing and demand; since then they alone determine the dynamics of manufacturing and sales. The growth in global production of passenger cars (2000–2014: 72 per cent) is accounted for exclusively by the expansion of manufacturing capacities outside the traditional industrialised countries (see Figure 1).

Terms such as »Triad« and »emerging economies« imply homogenous development processes that do not in fact apply to the two groups. In the case of the emerging economies China puts all others in the shade. Manufacturing and sales there have catapulted it into the position of world market leader from a negligible base in 2000, with unprecedented growth rates. China's world market share now stands at around 30 per cent (Figure 1).

However, other emerging economies have also come on apace. Ranking countries in accordance with their production figures, India had climbed to sixth place by 2014, with impressive growth rates, with Brazil and Mexico not far behind.

Just as the emerging economies have participated in these world market shifts to differing degrees so the traditional industrialised countries have been affected to different extents. Japan and Germany have been able to stabilise their high production levels. The winner in this group is South Korea, which has only enjoyed OECD status as an industrialised country for a few years, while the losers are the United States and France (Figure 2).

2.2 Automotive Producers of the North Go Global

The fact that a country gains or loses world market share in the manufacturing of automobiles is important for national employment in this economic sector, but it says nothing about the role of its companies. Indeed, we find that the automobile branch is characterised by significant migration. While production relocates to new regions it is not primarily local companies that take over manufacturing. Rather the manufacturers migrate from the traditional industrialised countries along with the markets and now carry on manufacturing there.

Nothing would be more mistaken than to characterise the past two decades as the years of the globalisation of automobile manufacturers. The US manufacturers General Motors and Ford positioned themselves internationally from the very outset, not only exporting to other countries, but also establishing manufacturing plants in Europe (Denmark, England, France, Spain and Germany) even before the Second World War. Ford also wrote the early history of automobile manufacturing in the Soviet Union when it set up the first assembly plant there in Nizhniy Novgorod in 1929 and thus fired the starting gun for Soviet manufacturing.³ The launches of the Japanese and Korean automobile industries are also closely linked to US concerns.

In Europe the influence of the two US automobile giants was curtailed in many countries after the Second World War. Many small national manufacturers fought for market share in the growing domestic markets and

3 »The new plant at Nizhniy Novgorod – which was renamed Gorky in 1932 – opened on New Year's Day 1931. It struggled from the start and in 1932 produced fewer than 24,000 Model As against a production target of 140,000. The Ford contract was terminated in 1935, but the Russian-built Ford, known as GAZ, continued in production over the next decade and helped lay the foundation for the development of the Russian auto industry« (Seriouswheels n.d.).



Figure 2: Passenger car production by country, 1997–2014



Source: OICA.



over decades mutual crowding out and mergers led to a concentration of a few manufacturers. These national monopolisation processes were largely concluded by 1980/1990 (see Table 1). Since then European manufacturers have launched their own globalisation strategies and have entered the world market by means of foreign manufacturing plants. For example, the German auto industry, especially VW, have, through acquisitions of other firms or investments in joint ventures, acquired industrial plants in other European industrialised countries, but also overseas, especially Brazil and China. In 1984 VW established its first joint venture with a Chinese manufacturer in Shanghai. Borgward, shortly before its demise, even delivered the platform for the first national car in Mexico. When the Berlin Wall fell central and eastern Europe experienced a scramble of European manufacturers to set up manufacturing facilities for export on favourable terms.

The Japanese automotive industry before the Second World War concentrated almost entirely on military and industrial trucks and buses and the rise of passenger car production happened only from the 1950s onward. Driven by Toyota and Nissan foreign technology was »embedded« and with import substitution began the spectacular rise of Japanese firms to become the leading global manufacturers and exporters from the 1980s. The economic boom in many industries changed exchange rates and wage costs and Japanese manufacturers, in order to maintain their competitiveness, shifted manufacturing capacities to elsewhere in Asia, and later even to Europe and the United States.

In South Korea automobile manufacturing commenced around a decade after its Asian neighbour, at the outset exclusively in cooperation with Japanese and US manufacturers. The first »purely Korean model« by Hyundai came off the production line in 1975. The narrowness of the domestic market necessitated an export obligation from early on. Appearing on the world market later than its rivals Korea has established itself as the most recent successful manufacturing country on world markets.

Despite these early phases of globalisation of automobile production, up to 1980/1990 the automobile manufacturers – apart from the US giants – remained anchored in their home countries and the »national« market was the first choice for production and sales. In the 1990s foreign production plants rapidly gained ground, but it was the economic rise of the emerging economies from 2000 that turned all major automobile manufacturers into companies that engage in production predominantly abroad.



Table 1: Number of national companies producing passenger cars in Europe, 1950–2010

	1950	1960	1970	1980	1990	2000	2010
France	20	5	3	2	2	2	2
Germany	11	10	5	5	5	3	3
UK	20	6	4	1	1	1	0
Italy	19	6	3	2	1	1	1
4 countries: All	70	27	15	10	9	7	6

Source: KPMG and Institut für Automobilwirtschaft (2010: 17–23).

The shift from domestic to foreign production by all leading producers is shown in Table 2. By 2000, only three major car makers (GM, Ford and VW) had transferred the bulk of their production facilities to international locations. Fourteen years later, a mere four companies were still mostly home-based (BMW, Daimler, Mazda and Mitsubishi), while all others had become international players first and foremost; seven of them kept less than 30 per cent of capacities at home. On average, the 15 largest car makers of the Triad countries reduced the significance of their home production during this period by nearly half (from 61 per cent to 34 per cent).

2.3 Exporters, Importers and Producers for Home Consumption

In 2014 some 20 countries produced passenger cars for export. If they are grouped according to export volume, Japan, South Korea and Germany are in a category of their own with more than 2.5 million annual net car sales abroad, followed by Mexico, Czech Republic, Slovakia and Spain, with export volumes of around 1 million cars each.

The volume of exports does not yet allow us to define these countries as exporters. If we set net exports in relation to domestic production, we can build three country groups (Figure 3):

- (i) Exports as dominant business: if net exports (calculated as total domestic production minus total domestic sales) are 60 per cent or higher, the automotive industry is engaged primarily in exports. This is the case for South Korea, Mexico, four central European countries and Uzbekistan.



Table 2: Home country car production as a percentage of the company's global production

Company	Country	2000	2009	2014
GM	US	37.77	8.84	12.51
Renault	France	57.09	20.95	12.81
Ford	US	31.90	10.37	15.02
Nissan	Japan	55.81	32.78	17.86
Honda	Japan	50.96	27.22	20.60
FIAT	Italy	62.25	33.47	20.81
VW	Germany	38.84	34.91	25.14
Suzuki	Japan	58.86	36.04	32.47
PSA	France	66.83	38.31	34.62
Toyota	Japan	74.82	50.33	39.97
Hyundai	South Korea	100.00	57.13	42.06
BMW	Germany	85.01	65.84	51.62
Mitsubishi	Japan	57.21	51.06	53.16
Daimler	Germany	45.62	72.02	56.36
Mazda	Japan	87.61	75.32	72.81
Average (unweighted)		60.71	40.97	33.85

Source: OICA; author's calculations.

- (ii) Exports and domestic sales are at par: here we group countries whose net export share lies between 30 and 60 per cent. Production for exports and for the home market is of similar importance. Japan and Germany fall into this group.
- (iii) Export is of minor importance: if net exports are below 30 per cent, domestic production is primarily targeting the home market. This group includes large producers such as India and China.

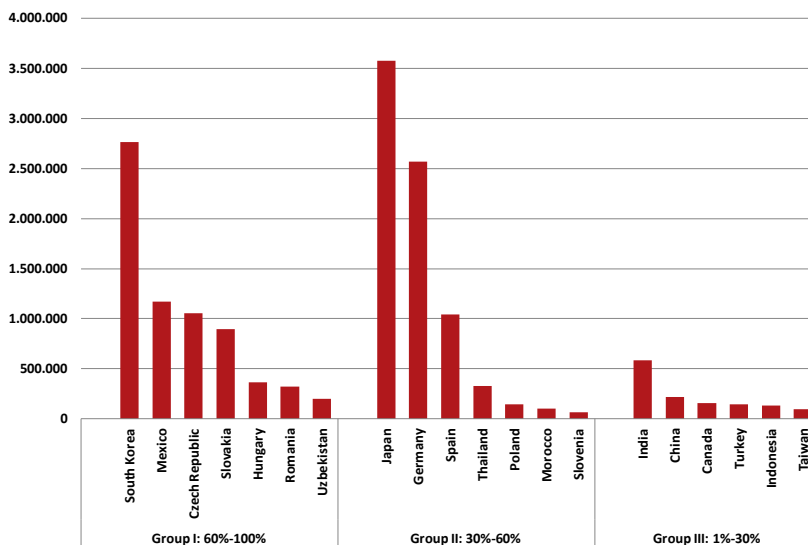
Important conclusions can be drawn from these figures for exporters (Group 1 and 2) of the »third generation« (excluding South Korea, Japan and Germany as exporters of the second generation – the United States



would be »first generation« but is no longer an exporter). None of the countries followed a strategy of »open competition« on the world market. All became members of economic trade zones or common markets and were able to capitalise on a distinctive advantage: customs barriers and import substitution policies could no longer be applied against them. Exports from Mexico primarily target the US market under NAFTA and Thailand has become a location for supplying ASEAN. The Czech Republic, Hungary, Slovakia, Romania and Poland became locations for exporting to the EU. When common trade zones remove customs walls, competition for investment is guided by comparative advantages in production costs. Without membership of a large economic zone in which duty-free internal-market trade exists, no »third generation« country has yet succeeded in entering export markets for cars on a significant level.

Looking again at sales and production statistics and defining net importers as those whose domestic sales are higher than domestic production we find industrial countries with formerly strong car production facilities to be the key markets for imports (Figure 4). The US import market is outstanding in its volume, followed – at some distance – by the United Kingdom, Italy and then Russia, the Netherlands and Aus-

Figure 3: Net exporters of passenger cars 2014 in volumes and percentage of total domestic production



Source: OICA; author's calculations.

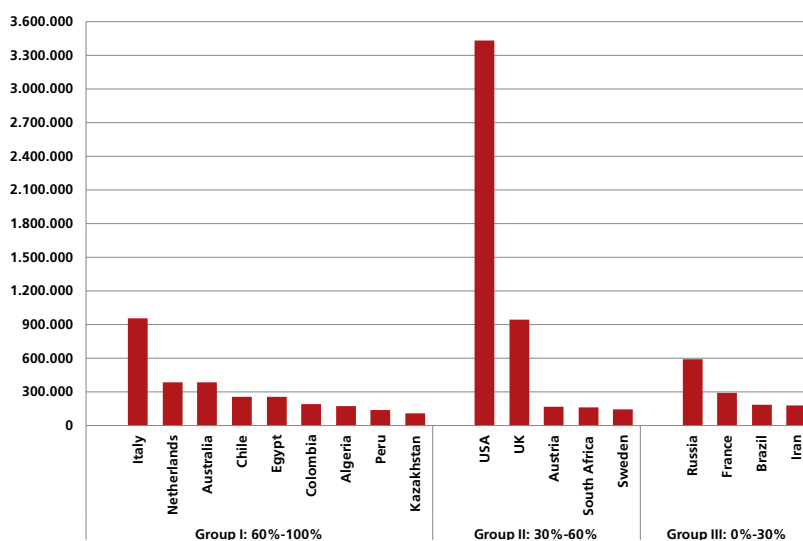


tralia. The United States liberalised its auto market and became a key destination for exports from other countries many years ago. The United Kingdom, Italy and the Netherlands have lost out in the reconfiguration of the EU car market. Russia is in a category of its own as the country applies import substitution policies, but is not able to capture its domestic market fully.

None of the large emerging markets can be found in the categories that depend almost entirely (60–100 per cent) or significantly (30–60 per cent) on imports. Chile, Egypt, Columbia, Algeria and South Africa may be markets still to be conquered, but their current net imports of between 150,000 and 260,000 cars are not of a magnitude that calls for the entry of large new FDI.

The markets in emerging countries have mostly been captured. There is indeed no significant emerging market in which local production facilities have not been established. We can therefore assume that the future market for passenger cars will be characterised by two trends: (i) continued application of national policies that assure that local car production increases with the growth in aggregate demand, and (ii) a zero-sum game in which competitors inside free trade zones try to capture markets from each other.

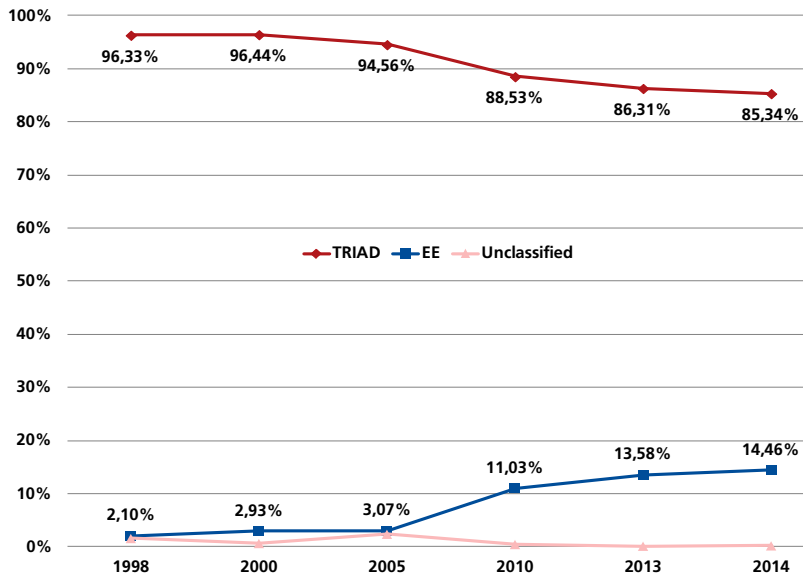
Figure 4: Net importers of passenger cars in 2014:
volumes and percentage of total domestic sales



Source: OICA; author's calculations.



Figure 5: Share in global production by origin of car makers (1998–2014)



Note: See Figure 1 for definition of Triade and EE.

Source: OICA; author's calculations.

2.4 MNCs from the North vs New Producers from the South

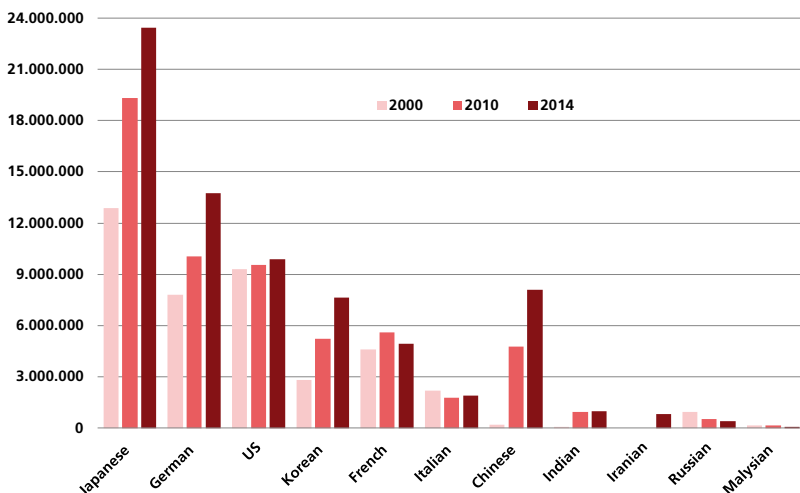
The redrawing of the borders of production and markets becomes more complex when looked at from the perspective of companies.

Figure 5 provides proof of the success, to date, of the investment strategies of Triad car makers. Whereas markets and production locations have shifted southwards, multinationals from the North have maintained their global production monopoly until around 2005. However, over the past decade a new group of competitors has emerged, made up of car makers from the South. Its share in global markets reached 14.5 per cent in 2014. If we extrapolate the market share of these new competitors into the future by a 1 percentage point growth per year, the northern monopoly starts to look uncertain.

Looking at car makers by country of origin (Figure 6), we find considerable fluctuations. Japanese companies took the lead from US firms in the 1990s and since then have held a stable global share of 30–35 per cent. German car makers have also passed the US firms and for many years have had a stable



Figure 6: Global production of passenger cars by origin of firms, 2000–2014



Source: OICA; author's calculations.

global share of 17–18 per cent. Korean firms, now largely merged in Hyundai-Kia, have grown strongly and seem intent on rising to third place. While Japanese, German and Korean firms have grown in step with the world market, or even disproportionately, firms from the United States, France and Italy have registered substantial sales losses. The once glorious UK car industry has now almost entirely sunk beneath the waves, bought out by competitors.

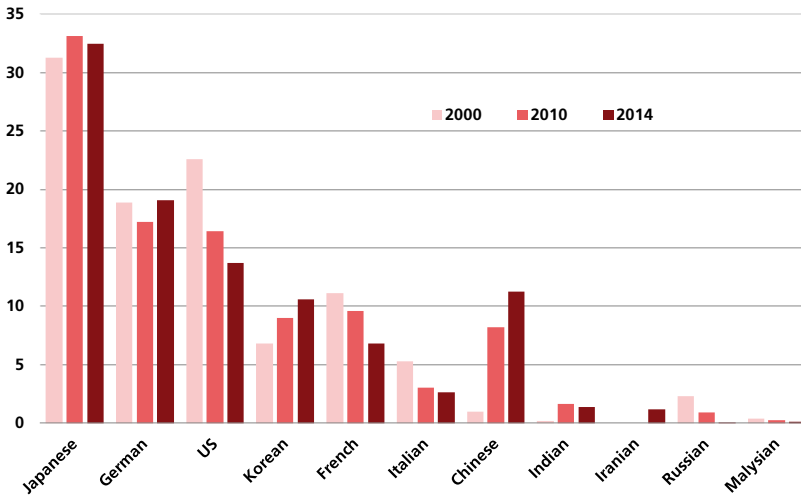
In total, 37 countries have annual production of more than 100,000 vehicles (OICA 2014), but worldwide only 11 national company groups are active. There are firms from six industrialised countries, on one hand, and from five emerging economies,⁴ on the other. Russian firms, which during the final phase of the Soviet Union were still significant producers (AvtoVaz, GAZ, UAZ), are on the retreat and the two Malaysian firms⁵ (Proton and Perodua) are unable to open up substantial export markets. Indian (Tata and Mahindra & Mahindra) and Iranian manufacturers (Iran Khodro and Saipa) are gaining ground. The significant market gains, however, are going almost entirely to Chinese firms. Although they still have little presence on

⁴ This classification follows the listing of OICA, which partly ignores small producers below 100,000 units/year.

⁵ On this see Wad and Govindaraju (2011).



Figure 7: Global production of passenger cars by origin of firms, 2000–2014 (in %)



Source: OICA; author's calculations.

international markets their growth on the domestic market is so enormous that some of them now have sales figures large enough to catapult them into the ranks of the biggest car makers in the world.

3 Emerging Markets – How to Integrate into Global Production

3.1 What Role Do the Governments of Emerging Countries Play?

When all the big producers have gone global, the question of why they do so may sound rather superfluous. The simple answer is: it's sink or swim. The real question, however, is why would they lose out? Where is the pressure coming from to go global? The answer also determines the political leeway of national governments with regard to the flow of investments. Numerous arguments can be adduced as motives for foreign investments. Ultimately, however, only two key chains of argument explain why manufacturers do not simply serve foreign markets from their home base through exports, but outsource production: (i) ensuring access to foreign markets; (ii) lower manufacturing costs abroad than in domestic production locations.



If cost of production – including the costs of transport and marketing – were equal everywhere and governments did not erect market entry barriers or offer investment incentives, there would be no reason for foreign investment and all car makers could stay at home and supply foreign markets via exports. As neither assumption holds in the real world, their interplay determines investment flows. If we ignore for a moment possible government intervention that would change relative prices, there are basically three possible constellations for the interplay of production costs and aggregate demand:

- (i) Countries that combine a growing domestic market (large population and growing per capita income) with low production costs (more exactly: low labour unit costs and a low exchange rate). Here, car makers will increase their sales, if they go into FDI and built domestic capacities.
- (ii) Countries with low production costs and a stagnant aggregate domestic demand: FDI into production for the home market is not promising. With this profile the country can serve as a location for building a domestic automotive sector primarily geared towards exports.
- (iii) Countries with a growing domestic market *and* growing production costs: the market is best supplied from foreign plants. If production capacities have already been built up, it may be time to de-invest.

The factor constellation comes closer to reality when we introduce government policies as an interference mechanism. Customs policies, tax regulations and subsidies can change relative prices towards making domestic production cheaper or more expensive. A strong incentive for FDI inflows is provided if entry barriers for fully built vehicles are erected; the key instruments for promoting export production through FDI works in the opposite direction by removing entry barriers. In both cases, additional incentives such as tax rebates or subsidies can be applied. Labour costs are not of central importance in the first case as they can be compensated with higher entry barriers. They are, however, key when it comes to export promotion.

Thus, countries that want FDI have two policy options:

- (i) trading domestic markets for FDI; this will lead to import substitution;
- (ii) trading low domestic production costs for FDI; this will lead to export promotion.

Import substitution is a viable option for countries with a large population and growing per capita income. Policymakers must be aware, however, that



in the beginning import substitution always comes with a consumer tax, as entry barriers add to costs. Policy pressure on productivity development is essential to reduce entry barriers later on.

Export promotion is a viable option for countries with low labour costs. However, two developments may challenge the continued viability of the location: (i) if wages increase, in which case the country may be out-classed by others with lower costs; (ii) if target markets increase their entry barriers because their governments want to promote national production. Exports based on low labour costs depend on security in accessing foreign markets. This is best guaranteed when exporters and importers are constrained by free trade arrangements and entry barriers are no longer a policy option. Inside such free trade zones production costs become the single most important determinant of FDI.

3.2 Automotive Sector in Emerging Economies – Selected Cases

Based on what has been said so far the emerging economies can be divided into different groups of manufacturers. These groups are differentiated from one another only analytically; in specific instances countries and companies can belong to several groups. Furthermore, some of these groups can be put in a development sequence that an individual company or country runs through, one after another.

No Manufacturing Capacities – Cars Are Imported

Of the 20 most highly populated countries in the world (Thailand comes in twentieth position with 68 million people) only four do not have automobile manufacturing: Nigeria,⁶ Bangladesh, Ethiopia and Congo. Although these countries meet the important criterion of a large potential market they are not economic boom countries, are politically unstable or are not pursuing an import substitution policy for this sector.

6 During the first oil price boom in the 1970s Nigeria attracted two foreign manufacturers: Peugeot (manufacturing in Kaduna) and VW (Lagos), which ceased operations in the economic chaos of the 1980s.



National Manufacturing Primarily for Domestic Demand

Only with foreign firms

In this category come most manufacturing countries, including large states such as Brazil. Manufacturing takes place with firms from the six industrialised countries with car makers. In some cases the foreign firms have driven or bought out domestic producers, thereby getting rid of national competition.

With foreign and national manufacturers

This group includes China, India, Iran, Malaysia and Russia. They can be further subdivided into countries with national companies that »remain at home« and those that also establish manufacturing capacities abroad. To the first group belong Iran, Malaysia and Russia; to the second China and India, which maintain foreign plants, having purchased foreign firms.

With only national companies

Currently, there is no instance of an emerging economy that produces cars with national companies alone, although this was previously the case with the Soviet Union.

National Manufacturing Primarily for Export

With foreign companies

Among the countries that attract FDI primarily to build up strong export production we might mention Mexico and Thailand in particular, but also the central and eastern European countries. Significant here are the comparative cost advantages, especially the low wages, as well as membership of a customs union. Mexico takes advantage of its membership of NAFTA and produces primarily for the US market. Mexico and India, early on, insisted that foreign manufacturers, besides supplying the domestic market, export part of their production. Import substitution was thus combined with the compulsion towards an export orientation.

With national companies

Here we find above all Chinese and Indian firms. They find ready markets primarily where price is the priority purchase criterion. Given the



above-average growth dynamic domestically it is likely that for Chinese firms in particular the orientation to the national market is likely to remain in the forefront. Companies from Malaysia could only gain foreign markets if the ASEAN trade protocol permitted privileges for companies from the region, which in turn would call into question Thailand as a production location. Russian firms, above all AvtoVaz, could open up large market shares in Central Asia. However, Russia, with a GDP share of 80 per cent, is the economic hegemon of the Eurasian Economic Union, so that a »national orientation« is likely to take priority.

Manufacturing Abroad

This is a new phenomenon: the Chinese private company Geely and the Indian firm Tata have purchased foreign manufacturers, namely Volvo and Jaguar/Landrover. The purchased firms continue production in their existing locations; the new owners gain access to new technologies and also the markets of the Triad. The takeover of insolvent Western companies is aimed primarily at access to highly developed R&D, which they also intend to deploy in the home markets. Whether the acquisition solution ultimately works and represents a shortcut compared with proprietary development will only turn out with the integration of the acquired R&D departments in the parent group. If Indian and Chinese manufacturers do not pursue technology transfer to their home countries by means of these acquisitions, but perhaps even reduce their R&D efforts at home, changed ownership structures will not bring about shifts in the global value creation chain.

4 Import Substitution, Global Value Chains and New Technological Trends

4.1 Import Substitution and Global Value Chains

While import substitution was long considered the appropriate strategy for catch-up industrialisation the literature is now full of analyses of »global value chains« (GVC).⁷ GVC has become a new mainstream term as it tries to capture and bring into an analytical explanatory framework two

7 For example, Keane (2014); Sturgeon (2001); Baldwin (2012); Milberg et al. (2014).



empirical trends: an ever increasing international trade of components of a product before it is finally assembled and sold to the customer; an ever increasing share of global trade which is intra-firm trade of multinational companies. The GVC discussion is strong in the electronic and textiles sectors, among others – but for the purpose of our topic, we limit the debate to the automotive sector.

The concept of global value chains to some extent challenges the application of an import substitution policy. While import substitution, usually starting at the end of a value chain with a finished product, tries to increase value production within the national economy and links national production to national consumption, GVCs take increasing shares of value production out of one country and spread it around globally in accordance with countries' competitive advantages. If a certain country is interested in capturing more pieces and longer production rows of a GVC product, it must implement liberal import policies, possibly supported with tax rebates and subsidies and must certainly remove export barriers as well. In GVCs, production costs become the key consideration for FDI. Viewed from the policy space of national governments the policy direction is just the opposite. Whereas import substitution demands protection policies GVCs delink production from consumption and demand policies for export promotion. Following the GVC logic, national governments become dependent actors and the top management of multinational companies put themselves in the driver's seat of the international division of labour; the concept of import substitution gives a determining role to national governments.

The analysis of GVCs can to some extent be applied to the automotive sector but its relevance differs, depending on whether we are looking at OEMs⁸ or the various tiers of suppliers. Automotive producers have not (yet) given in to marketing concepts applied in other sectors, such as electronics, where a firm such as Apple connects to its customers via control of a brand, while pulling out completely from producing any part of the product. Car makers still do both: nurture a brand and remain in production. With production and marketing still in the hands of single companies, they remain vulnerable to government protection of domestic demand. As long as (brand) marketing and production are not separated, the GVC approach is less relevant and import substitution remains a policy approach that has »bite« and can deliver, at least for large markets.

8 Original equipment manufacturer, a synonym for car assembly.



The case is somewhat different with component suppliers. The degree to which OEMs have outsourced parts of the value chain to suppliers varies, but there is a general tendency to increase it. There is no sound empirical research on the level of outsourcing but some analysts claim that it is close to 50 per cent. Suppliers are usually separated into tier 1, tier 2 and tier 3 or 4, according to whether they relate their business directly to the production lines of OEMs or engage further downward and act as suppliers to other suppliers. There are many aspects of these relations between OEMs and tier 1 suppliers, such as the number of products the latter deliver; the complexity of processes that have to be set up to produce the components; the degree to which components are used exclusively for a single car model or can be shared with others; the ways in which product specifications can be codified; and the ways in which frequent interactions and knowledge sharing are needed to link the various parts of production. Similar dimensions exist, albeit at a lower level, down the supplier chain.

The local content policy is the key instrument to avoid OEMs' setting up CKD (completely knocked down) or SKD (semi knocked down) plants in a country while leaving most parts of the global value chain abroad. A local content minimum of 50 per cent or higher is usually not achievable, if an OEM searches for components only from local suppliers, which may not have the competence to produce complex components for modern vehicles. Confronted with either reintegrating some component production into their own production lines or giving intensive training to local companies, many OEMs approach their traditional suppliers, often themselves global producers and pressure them to establish subsidiaries on site. Thus, in many countries with a sizeable market and a national production of 1 million units or more, foreign tier 1 suppliers have established component production next to their traditional OEMs. Here again, import substitution rather than a market-liberal trade policy in favour of global value chains appears to be the right policy instrument to maximise employment and bring other benefits for the country.

4.2 Limits and Challenges of Import Substitution Policies

There are, nevertheless, limits to a policy of trading domestic markets for FDI and building value chains inside a domestic economy with import substitution.



Import substitution increases costs of production

Protection to localise production always increases production costs and thereby increases the selling price for local consumers. This general statement, however, hides a form of income redistribution. Whereas the purchase of cars in emerging countries is mostly a middle class affair, this social class loses out in favour of workers, who find employment and income from building up domestic capacities. The overall effect for the economy may be neutral, if increased production costs level out with local added value. Economically it makes no sense to build up local capacities, if local value added remains in the lower ranges, at 10–30 per cent. If import substitution is applied, local content should be pushed to 50 per cent or higher.

Import substitution is no strategy for autarky

Import substitution is not a one-off intervention but continues in various steps and goes through different stages, aimed at achieving an even higher proportion of locally produced automobiles. The process usually begins with simple interventions at the end of a product cycle, such as body work, welding, painting and tyres and only afterwards progresses to more knowledge- and skill-demanding processes such as engine and gearboxes. Finally, there comes the development of research and design capacities that make it possible not only to fully produce a car within the boundaries of the national economy but even to develop a newly designed vehicle. Because modern vehicles can contain some 10,000 components, the full localisation of a complete vehicle production process is long and complex. However, there is hardly any country left – maybe with the exception of Germany – that still maintains full value chains within its borders. To various degrees, all other countries are host to production cycles with a considerable proportion of imported components that other countries can produce more advantageously. Moving too far into long domestic value chains always risks ending up with a product many of whose parts are non-competitive in terms of both price and quality.

Import substitution needs rules on competition

Import substitution policies divert domestic demand to domestic production and may create monopolies for local producers. There may be cases in which



foreign companies procure entry into domestic production with an agreement that thereafter the market will be closed to other investors. Where domestic markets are small, the danger of a monopoly looms. When a competitive environment is not guaranteed, market oversight automatically falls to the state. Can governments pick potential winners and guide their development? The crucial problem is whether the state is able to combine its support policies with the duty of monitoring performance targets. Corruption may creep in that allocates state resources in contravention to market considerations.

Markets take losers out of the game but government may have a tendency to keep them in business as they came into existence only from their policy choice. Where domestic markets are fairly small and foreign producers enjoy the privilege of low competition, mandatory export clauses may ensure that market pressure guides foreign investors' attitudes.

Import substitution can be used to establish or strengthen national car companies

Import substitution is a protective strategy to force foreign companies to localise production. However, import substitution can also be used with a second agenda in mind: setting up or strengthening an existing national car industry. If a domestic market is opened to foreign producers, local companies are crowded out due to their lower level of technological competence or production efficiency. Governments can protect local producers from FDI competition by applying special protection clauses, such as allowing FDI only into joint ventures with local companies and applying »bondage agreements« with special clauses on technology transfers. This situation in the long run leads to a paradox: foreign companies strengthen local companies to the point at which the »infant« may take over the local market and drive out the »teachers«.

Foreign companies are likely to react to such challenges by ensuring that knowledge transfer to local companies is limited to non-core technologies, thereby maintaining the dominance of foreign producers in the local market. Blocking the transfer of core technologies is a survival strategy for OEMs and includes substantive areas of research and development (R&D). As a consequence, no fully independent national automotive industry may emerge from policies applied against foreign capital. The final step of moving out from »enforced cooperation« may only happen with substantive national (state) investment in the autonomous development of core technologies and R&D.



4.3 Automotive Industry and Technological Future: Revolutionary Changes around the Corner?

The promotion of motorised individual transport in urban agglomerations in recent years has been challenged from several sides. A broad international consensus has emerged that human activities contribute to climate change and reducing transport's emission of greenhouse gases has become a key policy concern. Uncertainty surrounds the long-term availability of fossil fuel and those who manage to develop alternative technologies today may find themselves in the lead when traditional sources of energy finally run out. Furthermore, population concentration and urban densities challenge the use of private-owned cars as efficient means of transport with ever increasing traffic jams and declining average speed of mobility. These challenges cast doubt on the future of the OEMs and car manufacturers are under urgent pressure to propose ecological and socially acceptable solutions, if car ownership is to remain a key component in transport. There is much discussion of whether the automotive industry is investing sufficiently in the development of new technologies. Some see the industry as on the brink of dramatic technological transformations in several regards that will impact on all stakeholders and have profound repercussions for the character of the automobile, as well as its industrial production. In what follows we shall look at some of the most important changes.

Fuel-based Combustion Engines will be Replaced with Electrical Drive Trains

The transformation in drive technology and the end of the dominance of the internal combustion engine may be the key response to the scarcity of fossil fuels and to climate issues. The electrification of the power train began with the development of hybrid drive systems by Japanese car makers in the 1990s, but there is still much uncertainty about which direction to follow. »The spectrum of alternative power trains ranges from different hybrid concepts that combine an internal combustion engine with an electric engine, to pure electric drive systems and vehicles with fuel-cell drives. Development paths in the field of alternative fuels such as synthetic and biofuels (so-called synfuels and sunfuels) further complicate the challenges faced by power train R&D« (Bartel et al. 2015: 11).



Future success depends in particular on three issues: (i) a breakthrough in battery development that solves the problem of range; (ii) the availability of electricity from renewable energy as electro cars powered by coal may have a negative emission balance; and (iii) political pressure.

A switch to electric drives could have a profound effect on relations between OEMs and suppliers or even bring new actors into the branch that hitherto have concentrated on power generation and storage technologies. Electric drives are much easier to manufacture and could call into question the hitherto prevailing rule that car manufacturers are also engine manufacturers.

While many consider that there is no alternative to a switch to electric drives there is great uncertainty about the tempo of change. The OEMs have adopted different strategies to cope with this technological change: some want first to concentrate on an interim stage (hybrid motors), while others believe that they will be able to significantly reduce the emissions level of conventional technology.

The US firm Tesla is fully committed to the electric drive, although its high stock market value is inversely related to its low volume production and heavy losses. Others, such as VW have turned out to have manipulated the emissions tests of diesel motors in order to cling on to an obsolete technology. The collapse of the oil price and the new expectations that fossil fuel prices will remain low for the foreseeable future have deprived the energy efficiency debate of the cost argument and given heart to those buyers and investors who would prefer to push the switch back into the future. In a survey by KPMG (2015) in mid-2015, when oil prices had already gone into a nosedive, 200 senior executives along the whole value chain of the car industry forecast that the e-car market share would be below 5 per cent by 2020 and possibly still within the range of only 10–20 per cent by 2025 (KPMG 2015: 18–21). Electric technology, in their view, has yet to deliver on its early promise and companies will focus more on efforts to improve combustion engine energy efficiency.

Once again it seems to be the case that markets and private companies are putting a brake on technological innovation. State intervention is thus needed to drive change. Uncertainty offers opportunities for the brave. Germany is still seeking a role. While the Chancellor suggested a target margin of 1 million electric cars by 2020, by the end of 2015 a mere 19,000 had been sold. Although a National Platform for Electromobility has now been set up, cutting across research, politics and business, it remains unclear whether the market share of electric cars is to be raised by means of sales incentives, stricter



emissions requirements or even a defined (minimum) production quota. For China the move towards e-cars could open a strategic window: to leapfrog international competitors and put Chinese auto manufacturers ahead of the international pack, with heavy investment in battery technologies. Rumour has it that strong lobbying may soon result in a Chinese government policy that from 2020 onwards permits new registrations only of e-cars.

Modularisation – No End in Sight?

Modularisation in auto manufacturing has been pursued since the beginnings of car production. In general, it involves dismantling a complex process into its components, developing specialised manufacturing in separate production lines and later reassembling them into a complete, complex product. For the car industry this long ago led to two organisational features: (i) car companies manufacture components of an automobile at different sites and then bring them together for final assembly; (ii) some components are outsourced to specialised suppliers, making car manufacturing an inter-firm affair between OEMs and suppliers.

Hitherto, modularisation focused on the production process but there is now discussion about the extent to which it can expand into other phases of a vehicle life-span, in particular to (i) the design and development stage; (ii) the phase when a car is already in use and producers and customers are linked to each other through after-sales services; and (iii) even the retirement period, when recycling issues arise (see, for example, Knittig et al. 2004).

The most difficult part is certainly modularisation of the design of new cars, as it may lead to complex processes of communication between the different research teams and make the adaptation of their results into a final uniform concept for a vehicle that ensures functionality and satisfies consumer tastes and brand identity, an overwhelming task. More likely in the shorter run is the formation of OEM alliances between what are otherwise competitors to develop a joint platform. Development costs are high but one-off expenses become relatively cheaper per vehicle, the more units are built from the same platform. This is already practiced but is restricted to non-viewable components of a vehicle and does not encompass the visible and »identity« building elements so as not to endanger cars' brand identity.

Modular assembly can be seen as a precondition of increasing the variety of the products on offer, which may lead to a further individualisation of consumer tastes. At the end of such a development, we may find car mak-



ers launching built-to-order automobiles, thus following trends in lower technology sectors such as bicycle production. If automobiles are then sold online and car maintenance and repair services are simplified with digital communication technologies, the dealership concept may become obsolete.

From a technological point of view, it may be open where a process of ever more modularisation may end. But it is clear that ever deeper modularisation, in particular ever more outsourcing of production components to suppliers, will ultimately change the whole character of automotive manufacturing. If outsourcing is extended to core technologies, which auto manufacturers have hitherto kept to themselves in order to retain the technological lead, the automobile industry will evolve from a vertically integrated structure into a horizontal structure. »However, by losing their core competence, carmakers could eventually become mere brand and service providers by offering the general car design and innovative product concepts, as well as by providing diversified customer services such as car financing and the distinctive brand name« (Knittig et al. 2004: 18).

To date, no OEM appears to be ready to become separated from research, design and manufacturing of core components. The belief remains firm that car makers should invest in their brand and keep control over customer relations. In the KPMG survey, 72 per cent of respondents stated that OEMs will retain the ownership of customer relations over the next five years and no change in the traditional business model is impending (2015: 27). But there are other technological revolutions around the corner that may impact on such traditional values.

Digitalisation, Interconnectivity and a New Mobility Concept

The economic inefficiencies of vehicular transport – cars are parked 95 per cent of their life span and produce traffic jams during most of the rest of the time – has always been the nightmare of city planners. Creating interfaces between different modes of transport and connecting cars to public transport, as well as bicycle traffic and walking is one answer. But the real problem stems from the focus on owner-driven vehicles.

Car sharing is one way to separate ownership of vehicles from their use, but it comes with a handicap. While it may not impact on total transport mileage it increases the time a vehicle is in use and thereby reduces the number of cars need and thus the demand for new cars. This may be good for the environment but it is contrary to the interests of OEMs.



Separating ownership and user may be supported if driverless vehicles, recently successfully tested at various places, pass legal and regulatory hurdles and make the »autonomous driving« of cars jam-packed with digital devices a new transport reality. Networked and automated vehicles could coordinate their driving manoeuvres and optimise traffic flow. Taking it one step further, they could eventually make their own decisions about routes and be programmed only to reach their destinations. Even traffic light junctions become optional if one considers self-driving »driver cabins« that operate hands-free by means of »swarm intelligence« and do not have to stop at junctions.

But will drivers easily accept their substitution? In commercial transport the bottom line matters and self-driving trucks may become cost benefitting in long distance transport; in the passenger car segment, however, the new technology is confronted with social attitudes that are more difficult to overcome. In addition, the »intelligent car« will create the »transparent driver« and known or researchable profiles of movements may destroy another bastion of privacy. Social and political resistance may slow down the whole process.

In the medium-term view, putting autonomous cars into a compromise jacket is more likely to be pursued. The car cabin can be developed into a space that is not only equipped with similar devices available at home or in the office, but has interconnectivity with intelligent transport systems that provide traffic guidance by enabling cars to communicate with each other to avoid traffic jams. Interactive media can link to local retail or leisure options and personalised news and turn time spent in the vehicle into working time or entertainment.

Equipping a car with ever more digital technology and making the car cabin accessible to new forms of advertisement and data processing may impact on the relations between OEMs and the IT industry. When the automobile and IT grow together, will car manufacturers and service providers do likewise? Two IT giants Apple and Google have recently started their own car pilot schemes. Whether they intend to fully enter the business, try to replace OEMs and become car makers of their own or just obtain control of the interconnectivity to external information providers is still open. Packing the car with more equipment that is not part of the »original contract« with an OEM will increase the importance the purchaser attaches to these »additional packages« and may reduce the value of a car brand. If this is the coming trend the ownership of a customer's relationships may be at stake.

German car makers appear to be aware of the imminent danger. Despite heavy competition in car sales they recently banded together to buy »Here«, a map provider. They want to keep external service providers out



and equip their vehicles with their own digital data system. They appear to be sure of one thing: if Google and Apple become strong players in the car industry, in the future cars may no longer be produced in Germany.

4.4 What Is the Role of Emerging Markets?

India and China, the two leading locations for the development of a »native« car industry, have in recent years appeared to focus on the localisation of R&D activities. This is a response to an in-built shortcoming of FDI, namely that foreign investors are not prepared to provide access to their latest technology. Tax rebates, subsidies and other privileges granted for transferring R&D capacities do not counterweigh the imminent danger of losing the market lead when knowledge is transferred to possible competitors. Even in joint ventures, local investment in R&D does not really encompass core technologies but rather involves adapting a product to the local environment and customers' tastes. Core technology development in OEMs will remain concentrated in the countries where they have their headquarters or at least at locations where they are assured of legal confidentiality. The way forward for new players is to go it alone, to rely on their own resources and to develop infrastructural capacities for national R&D beyond foreign OEMs.

Car makers in India and China may not yet be strong enough to catch up in R&D with well established OEMs. Acquiring foreign companies is one way to organise a technological leap; relying on government support is another option. Perhaps we are seeing the beginning of a race between global OEMs and the national governments of large emerging countries and competition for the control of future car technology. This would be bad news for other emerging markets, which will find it difficult to mobilise similar resources to enter the race.

5 Trade Unions in the Automotive Sector

What will the future automotive factory look like and what is the role of trade unions in shaping industrial relations? The emergence of robots in manufacturing in the 1980s conjured up scenarios of worker-free factories. Automation has certainly reduced employment in manufacturing. However, its impact has been more to shift workplaces to new areas and less to substitute them altogether. A new »horror« scenario comes with the



3-D printer. If car components can be produced with this new device and workers are made owners or lessees of the »means of production«, the factory loses much of its central role and may be even abolished. Industrial relations may thus return to where they started from at the beginning of the Industrial Revolution in the nineteenth century, namely to home-based production units to which trade unions hardly reach.

Such a development is not likely. The 3-D printer does have the potential for the production of spare parts in small series for historical vehicles, but is not likely to be used in mass production. The dangers for trade unions and their role in industrial relations stem more from outsourcing, modularisation and piece-rate production in international value chains.

Car production has long been a trade union stronghold in all major economies. Even today, workers in a car assembly plant usually earn wages above the average in the economy or in many other branches of the manufacturing sector. This is the case whether we look at industrialised countries or emerging markets. More workplaces are covered by labour and social regulations and trade union membership, while collective bargaining coverage is also above the national average.

This is the case in car assembling but the picture changes fast in the supplier industry. The further one goes down the vertically organised supply chain the less decent the prevailing working conditions and wages are; not only that, the trade union hold on the workforce also dwindles.

Supply chains are indeed a huge challenge to trade unions, because they modify classic employer–worker relations. They reach beyond a company and where they cut across national borders they link the employment relations of different national environments into the same product cycle. Car assembly and international tier 1 suppliers may have comparable workplace relations, but further down the chain we often move into the informal sector and a union-free zone.

The more modularisation and outsourcing increase the significance of companies at the lower end, the greater the risk that poor working conditions will creep backwards up the line and endanger labour standards upstream. Ample evidence from our country studies shows that the proportion of irregular employment contracts is increasing in car assembly. To avoid stronger »blow-back« from unacceptable working conditions at the lower end, unions must tackle this challenge and reach out downwards to all segments of the product cycle. »Organizing along value chains« (Fichter 2015) may be the slogan of the day, but a focus on assemblers and tier 1 and 2 suppliers may be more realistic than trying for the full Monty all at once.



This is easier said than done. Coordinating joint action across borders brings together unions with different organisational scope (sectoral versus enterprise unions), union cultures (codetermination versus an affinity for strike action) and, indeed, languages. Separate union aspirations, diverging territorial responsibilities and, in general, the difficulty of coordinating a joint union approach across national borders must be overcome. Following global product cycles requires Global Union Federations (GUFs) with responsibility for organising cross-border solidarity within industrial sectors. However, in their efforts to live up to these tasks they are hampered by a lack of personnel and resources.

Nevertheless, there are instruments that can be used to defend workers' interests across borders. After many years of union discussions on whether a sectoral or a company-based approach would be more suitable the smoke appears to have settled and a consensus has emerged in favour of concentrating on organising around specific MNCs and trying to create a hold on supplier networks from there. Some 120 so-called »global framework agreements« (GFA) have been concluded between the top management of MNCs, headquarter unions and GUFs, supported by works councils. While 120 GFAs may look tiny in view of the tens of thousands of MNCs worldwide, the automotive sector is in a privileged situation in that six of the leading 15 OEMs⁹ have signed an agreement with unions and thus some 30 per cent of the global market has GFA coverage.

GFAs are »promises« by management to guarantee a minimum set of labour standards in keeping with ILO norms and usually company-wide; in many cases, they include clauses that also cover suppliers (Platzer and Rüb 2014; Fichter 2015).

The importance of a GFA depends less on what is written in the text than on how it is applied. No international court exists in which MNCs can be sued for not fulfilling the agreement; top management may argue that foreign subsidiaries are autonomous, even though they have signed a commitment to guarantee uniform labour relations in all parts of the concern; and companies may not turn away suppliers merely for bad workplace policies. But GFAs can work, at least to some extent. IndustriAll lists a number of cases in which local subsidiaries of MNCs were successfully convinced to cease violating trade union rights after GUFs and MNC-headquarter unions took the cases up.

9 The three German carmakers BMW, Daimler and VW, the two French ones PSA and Renault and the non-European US Ford.



The real value of GFAs, however, is not to change labour relations from the top. GFAs can assist in reducing pressure from the management of local subsidiaries to prevent unions from organising. It is first of all a tool that helps to open up a window for local unions to start or continue their organising activities.

In countries with a dual system of workers' interest representation GFAs provide works councils with a unique opportunity to »globalise« domestic forms of social dialogue. Certainly, GFAs with their focus on a single global enterprise set aside sectoral-wide interest representation and by giving works councils a prominent role, replace, to some extent, confrontational industrial practices with cooperative ones. In the absence of sectorally structured employer associations in most countries, building branch-based industrial relations across borders is in many regards utopian. In a world ever more dominated by multinational companies, there appears to be, for all practical purposes, no alternative than to follow them and build up enterprise-based international industrial relations.

China is *sui generis*, also in union affairs. Unions are organised top-down, retain the character of a »transmission belt« and inside enterprises cooperate with management to ensure »harmonious« labour relations. In recent years, wage strikes organised at the grassroots have become »normal« and Chinese autoworkers with autonomous activities have started to develop their own workplace bargaining power. Official unions are today being challenged to either join this new militancy, side with workers and become »actors in conflicts« or to remain »neutral« but be side-lined. If the largest car market in the world moves in the direction of improving the working environment in its car industry the positive repercussions for the car industries of other countries may be strong. If such changes involve unions as instigators, it may give unionism worldwide a great push. If Chinese unions remain on the sidelines, however, the modernisation of the car industry in China may be seen as proof that the future can be managed without unions.

6 Summary

Import substitution and local content clauses are a declaration of war against an investment policy dictated by multinationals and their interests. They constrain companies' decision-making freedom and prioritise the development interests of the country, to which capital has to subordinate itself. Import substitution and local content clauses are not opposed to



modularisation and the outsourcing of parts of production to suppliers, but rather demarcate the internationalisation of the supply chain. Outsourcing is permitted, but primarily within national borders. Although such industrial policy intervention is nationalist, it is not anti-market in itself and not a sign of a revival of a command economy. The aim is only to link state control and market-economic principles.

This kind of industrial policy is motivated primarily by one of two things. While one group of countries merely tries to get OEMs to enter the domestic market and, besides local content obligations, does not impose any other guidelines, the other group attempts also to use OEMs to build up national companies. The nurturing of weak national companies to grow into internationally competitive actors requires considerable patience and substantial resources or cross-subsidisation via other economic branches. These include, in particular, a large domestic market, as an enticement to get OEMs on board. South Korea was the last instance of a relatively small country that has managed to build up a national automobile sector – and is likely to remain so. Only China and India as major economies have good prospects of success in joining the group of established Triad OEMs.

For trade unions, import substitution and local content requirements are beneficial. They reduce supply chain competition beyond national borders. With a return to a domestic market development path wages become important for the growth of aggregate consumption and are no longer only production costs. This reduces political and business pressure to keep wages at the lowest level possible and facilitates an economic development process with productivity-oriented wage increases. Export-oriented policies, if undertaken in an economic environment in which costs matter most, will increase downward pressure on wage levels and force participants into a wage race to the bottom. Even in cases where wage levels in export production are above those in the rest of the economy – as in Mexico – it will be difficult to turn productivity increases in automotive production into higher wages for auto workers. For unions, export strategies are ominous for wage bargaining, as is outsourcing, when it involves cross-border transactions. Domestic economic strategies, however, provide a platform on which it is easier to defend workers' interests.



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Evolution and Challenges of the Automotive Industry in Brazil

Contribution to the Debate

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1 Introduction

The global automotive sector has undergone sweeping transformations over the past decade in terms of markets, competitive standards and capacity building. All this has had a major impact on emerging economies. The integration of emerging economies in the global automotive industry depends on coordinated national policies able to take advantage of the world-wide restructuring of demand.

Brazil's economy has a diverse industrial structure and a significant automotive sector. Its economic policies should focus on how to strengthen the sector's domestic dynamics under the impact of the industry's reshaping at the international level.

In this chapter we argue that, in the context of important global changes in production, investment and trade structures – notably a rising Asian share and the international economic crisis that began in 2008 – the Brazilian automotive industry has missed an opportunity to promote a more intense investment cycle that may have enabled productive and technological restructuring and would have allowed it to become consolidated as an important international player.

¹ The authors would like to thank Rudolf Traub-Merz for his comments on the final draft of this chapter. The usual caveats apply.



2 Characteristics and Development of the Global Automotive Industry

Global passenger car and commercial motor vehicle production exceeded 90 million units in 2014, bringing the total vehicle fleet in use to approximately 1.27 billion vehicles. From 2005 to 2013, the global motorisation rate (vehicles per thousand inhabitants) grew by 21 per cent and reached 174 vehicles per thousand inhabitants. Some regions exhibit a high motorisation rate; examples include the NAFTA region (649 vehicles per thousand inhabitants and a 3 per cent growth rate), the European Union (565 and 6 per cent), and Japan and South Korea (544 and 4 per cent). Other regions, such as the rest of Asia (73 and 107 per cent), South and Central America (174 and 53 per cent) and Africa (43 and 27 per cent), exhibit lower but growing motorisation rates and dynamic demand.

The automotive sector is characterised by a concentration of demand in a small number of countries and by a few global corporations that account for a large proportion of output and sales. Within this structure, reinforced by frequent mergers and acquisitions, competition is driven mainly by product differentiation. This prompts the creation of market niches and a constant quest for quality improvements. The sector's innovation dynamics plays a decisive role in ensuring and/or increasing market share.

Table 1 presents the world's top vehicle manufacturers and the strong expansion of production over the past 15 years (over 55 per cent). The market share of the top ten manufacturers is above 70 per cent and the top twenty achieved a share of nearly 90 per cent in 2014, mirroring the high level of economic concentration. It is worth pointing out a sharper rise for Asian manufacturers, particularly the consolidation of the Japanese and South Korean carmakers as global players. Toyota became the world's top producer in 2008, outstripping General Motors. The former lost its leadership in 2011 to GM and Volkswagen in the wake of the earthquake in Japan and its impact on both domestic assembling and component production, but recovered in 2012 and has held its lead ever since. In 2014, Toyota's production exceeded 10 million vehicles.

In contrast, there was a slowdown of European and, especially, American corporations, whose activities were most affected by the international economic crisis. More recently, other Asian manufacturers (Chinese and Indian) have emerged as important players. In an attempt, initially, to win a bigger market share, these newcomers in the interna-



Table 1: Global motor vehicle production by manufacturer, 2000, 2010 and 2014 (top twenty companies, '000 units)

	2000	2010	2014
Toyota	5,955	8,557	10,475
Volkswagen	5,107	7,341	9,895
General Motors	8,133	8,476	9,609
Hyundai	2,488	5,765	8,009
Ford	7,323	4,988	5,970
Nissan	2,629	3,982	5,098
Fiat**	2,641	2,410	4,866
Honda	2,505	3,643	4,514
Suzuki	1,457	2,893	3,017
PSA	2,879	3,606	2,917
Renault	2,515	2,716	2,762
BMW	835	1,481	2,166
SAIC	–	347	2,088
Daimler*	2,333	1,940	1,973
Changan***	203	1,103	1,447
Mazda	926	1,308	1,328
Dongfeng Motor	157	650	1,302
Mitsubishi	1,827	1,174	1,262
BAIC	125	980	1,116
Tata	194	1,011	945
Chrysler*	2,333	1,578	–
Others	5,827	11,794	9,959
Total	58,392	77,744	90,717

Notes:

* DaimlerChrysler production in 2000, calculated on a pro-rata basis for each company. Merger between 1998 and 2007.

** Includes Chrysler output in 2014.

*** Includes production by companies Chana and Hafei. Production of national group only. Excluding production by these companies' joint ventures with foreign manufacturers. Source: Prepared by the authors based on data by IOMVM.



tional market adopted a short-term competitive strategy based on low prices. Subsequently, they have focused on a medium- and long-term strategy of consolidating a quality-product brand and image. Slowly but surely, by tapping into market niches, they grew stronger in the global market – including the Brazilian market – and raised the bar for competition in the sector, mainly in the compact and subcompact vehicle sector, where demand rose sharply.

It is worth underlining that China's and, to a lesser extent, India's roles in the automotive industry have been driven mainly by domestic production and demand. However, a potential strategy of more aggressive foreign positioning should not be overlooked. In this sense, the expansion of compact and subcompact vehicle exports by these two countries would represent a serious threat to the Brazilian auto industry, whose production specialisation pattern is concentrated in these segments.

The dissemination of lean production in the 1980s and modularisation in the 1990s have become characteristic features of the automotive sector and have influenced both its form of internationalisation and its linkages to suppliers. Horizontal and modular production networks have sprung up, enabling the geographical expansion of production. The geographical spread of production capacities is contingent upon government regulations at national and regional levels, and on corporations' competitive strategies. The automotive chain has become, therefore, more integrated on a world scale, while foreign trade and capital flows across countries have also intensified along this chain.

Table 2 clarifies the main changes in the geographical distribution of production over the past decade. There is, on one side, production stagnation in central economies – particularly in the so-called Triad (the United States, Europe² and Japan) – and, on the other, a sharp rise in production directed towards emerging markets, especially the Asian economies. It is worth noting the rise in importance of the BRICS in global production, especially China, India and Brazil.

The rapid rise in Chinese production and demand constitutes the main structural transformation in the world's automotive industry over the past fifteen years. China went from an output of 2 million units in 2000 to over 23 million units in 2014, raising its share in world production from 3.5 per

2 It should be noted, however, that even inside Europe there are contrasting moves, since a recent trend exhibited by the corporations was to shift part of the production activity to Eastern Europe, where they could benefit from, above all, cost-related advantages in relation to Western Europe.



Table 2: Vehicle production, 2000 and 2014 ('000 units and %)

Country and region	2000	(%)	2014	(%)	Growth rate 2000–2014 (%)	Share in growth 2000–2014 (%)
Europe	20,275	34.7	20,631	22.9	1.8	1.1
Germany	5,527	9.5	5,907	6.6	6.9	1.2
North America	19,775	33.9	21,219	23.6	7.3	4.6
NAFTA	17,699	30.3	17,419	19.4	–1.6	–0.9
Mexico	1,935	3.3	3,365	3.7	73.9	4.5
USA	12,800	21.9	11,600	13.0	–8.9	–3.6
South America	2,076	3.6	3,799	4.2	83.0	5.5
Brazil	1,671	2.9	3,146	3.5	88.3	4.7
Asia–Oceania	17,928	30.7	47,360	52.7	164.2	93.3
China	2,069	3.5	23,723	26.4	1,046.6	68.6
Japan	10,144	17.4	9,775	10.9	–3.6	–1.2
South Korea	3,115	5.3	4,525	5.0	45.3	4.5
Africa	317	0.5	720	0.8	127.0	1.3
Total	58,374	100.0	89,931	100.0	54.1	100.0
Memo: BRICS						
Brazil	1,671	2.9	3,146	3.5	88.3	4.7
Russia	1,203	2.1	1,895	2.1	57.6	2.2
India	796	1.4	3,840	4.3	382.3	9.6
South Africa	357	0.6	566	0.6	58.5	0.7
China	2,069	3.5	23,723	26.4	1,046.6	68.6
BRICS Total	5,739	9.8	33,170	36.9	478.0	86.9

Source: Prepared by the authors based on IOMVM data.



cent to 26.4 per cent. China alone contributed nearly 70 per cent to the growth in vehicle production in the 2000/2014 period. Its production in 2014 surpassed the aggregate production of the United States and Japan, the second and third top world producers, respectively. These two countries even witnessed a nominal drop in production over the same period. Germany, despite an absolute increase in vehicle production, saw a decline in its share. In contrast, production in emerging markets expanded sharply in both absolute and relative terms. In addition to China, other countries – such as Mexico, India, Brazil and South Africa – exhibited strong dynamism. The BRICS accounted for 87 per cent of the expansion of total production over the period (Table 2).

Production in Brazil doubled from 1.7 million units in 2000 to 3.4 million units in 2013, which represented an increase in its global share from 2.9 per cent to 4 per cent. However, the country experienced a sharp fall in both production and demand in 2014, reflecting the worsening of the economic crisis at home.

A similar change occurred in the world's automotive demand structure due to the rise of emerging economies as important vehicle consumers and the stagnation of central economies. Table 3 shows the evolution of sales over 2000–2014. Demand for vehicles in China outpaced that in the United States in 2009. Indeed, China absorbed 26.6 per cent of the total vehicle world supply in 2014, a share that is higher than those of the US, Japanese and Brazilian markets combined. Another indicator that indicates Chinese market dynamism is that the country's demand accounted for over 70 per cent of global sales growth over 2000–2014. If we add the domestic demand contributions of India (7.8 per cent) and Brazil (6.7 per cent), the figures rise to 86 per cent. In addition to the outstanding Chinese rise, there was also a steady improvement in the Brazilian (starting in 2005) and Indian (as from 2003) performances. These three emerging economies accounted for nearly one-third of the world consumer market in 2014. Conversely, the performance of the United States, Japan, Germany and France – traditional vehicle markets – shrank over the same period.

Given the global economic crisis of 2008–2009 and its aftermath, the fastest recovery took place in emerging economies. In advanced economies, despite the implementation of stimulus packages to increase demand, the recovery of domestic markets was slower. This gap in market dynamism, consequently, affected automotive corporations' investment plans, which, in turn, had an impact on countries' sectoral competitiveness and, in broader terms, economic performance.



Table 3: Vehicle sales in the main consumer markets ('000 units and %)

	2000	2000 (in %)	2010	2010 (in %)	2014	2014 (in %)	Growth Rate 2000–2014 (in %)	Share in Growth 2000–2014 (in %)
China	2,089	3.6	18,042	24.1	23,491	26.6	1,025.5	71.7
USA	17,402	29.8	11,772	15.7	13,041	14.8	–25.1	–14.6
Japan	5,963	10.2	4,956	6.6	5,562	6.3	–6.7	–1.3
Brazil	1,489	2.5	3,515	4.7	3,498	4.0	134.9	6.7
Germany	3,693	6.3	3,198	4.3	3,356	3.8	–9.1	–1.1
India	859	1.5	3,039	4.1	3,176	3.6	269.7	7.8
France	2,611	4.5	2,709	3.6	2,210	2.5	–15.4	–1.3
UK	2,520	4.3	2,291	3.1	2,843	3.2	12.8	1.1
Italy	2,701	4.6	2,166	2.9	1,492	1.7	–44.8	–4.1
Canada	1,586	2.7	1,580	2.1	1,889	2.1	19.1	1.0
South Korea	1,430	2.4	1,511	2.0	1,661	1.9	16.2	0.8
Australia	787	1.3	1,036	1.4	1,113	1.3	41.4	1.1
Mexico	889	1.5	847	1.1	1,176	1.3	32.3	1.0
Sub Total	44,019	75.4	56,662	75.5	64,508	73.1	46.5	68.7
Total	58,400	100.0	75,005	100.0	88,240	100.0	51.1	100.0

Source: Prepared by the authors based on IOMVM data.

3 Competitiveness of the Brazilian Automotive Industry

3.1 History of the Brazilian Automotive Industry³

The first assembly lines in Brazil were established by subsidiaries of Ford and General Motors in 1919 and 1925, respectively. At the beginning, however, the industry was completely dependent on imports and assembly.

3 This subsection is based on Anfavea (2016), company websites pertaining to their establishment in Brazil and the State of São Paulo website on automotive history (http://www.saopaulo.sp.gov.br/conhecasp/historia_republica-industria-automobilistica), unless otherwise stated.



A policy orientation towards import substitution industrialisation in the 1950s contributed to change this scenario and consolidate national production. It can therefore be said that, de facto, the Brazilian automotive industry was established in the 1950s.

In the early 1950s, under Getúlio Vargas's second administration, measures such as the prohibition of imports of assembled vehicles and high import taxes on auto parts were adopted. The consolidation of the National Steel Company (CSN), founded in 1941 during Vargas's first administration, was also important as an essential supplier of inputs for the development of domestic industry, in particular, the automotive sector. The first steps to make the transition from light to heavy industrialisation were taken.

The »Targets Plan« (*Plano de Metas*) became the cornerstone of the Brazilian automotive industry during Juscelino Kubitschek's administration. The five-year plan, implemented from 1956 to 1961, focused on the national production of durable and capital goods. The government established goals for every economic sector, as well as infrastructure targets. Executive bodies were established for each sector – including the automotive industry – to develop projects to implement and expand national production.

Foreign capital also played a key role in industrialisation. Given the internationalisation of the American and European companies at that time, FDI benefited from domestic conditions, such as an expanding consumer market and favorable regulation of foreign companies. Instruction 113 of the Superintendency of Money and Credit (Sumoc) of 1955, for instance, enabled foreign investors to import capital equipment without the need for foreign exchange cover in case of investment projects deemed relevant to national development. In addition, another law gave protection to domestic manufacturers producing goods similar to imported goods, giving them special tariff and exchange-rate treatment. The increase in foreign investments and the establishment of international companies in the domestic market also facilitated access to foreign technology.

National production of vehicles expanded from 30,542 units in 1957 to over 133,000 units in 1960. In 1956, the first 100 per cent nationally produced car, the Romi-Isetta, was launched. In the same year, Mercedes-Benz produced its first truck in Brazil and the Brazilian Association of Automotive Vehicle Manufacturers (Anfavea) was founded. In 1958 and 1959, Toyota and Volkswagen, respectively, established their first facilities in Brazil. During the following decades there was an increase in automotive production capacity and the dominance of four carmakers over the Brazilian car market, namely Volkswagen, General Motors, Ford and Fiat, which



started production in the country in 1976. In the late 1970s, total vehicle production surpassed 1 million units. In sum, import substitution policies managed to consolidate the automotive sector in Brazil based mainly on foreign carmakers and national auto parts companies.

In the early 1990s, the opening up of the economy initiated a new chapter for the Brazilian automotive industry. Trade and financial liberalisation, together with an overvalued exchange rate, exposed the industry to intense foreign competition, which especially favoured huge imports of both auto parts and final vehicles to meet domestic demand. Import tariffs were reduced and the prohibition on imported vehicles suspended.⁴ In addition, massive capital inflows were allowed into the country, not only oriented to new greenfield investments but also to mergers and acquisitions.

An investment cycle took off in the mid-1990s, combining foreign capital – partially also from new entrants in the market⁵ – with that of companies already in Brazil. It resulted from a number of factors, such as: (i) the growing domestic market boosted by price stabilisation policies in 1994 and the reappearance of consumer credit thereafter; (ii) the creation of Mercosur, which provided domestic assemblers with opportunities to participate in regional markets with greater trade liberalisation and reductions of import tariffs; (iii) lower taxes on low-end cars, which became the sector's specialisation pattern in Brazil; and (iv) the establishment of a new automotive regime in 1995, geared towards broadening and modernising the vehicle production park (Sarti 2001; Baer and Cintra 2004).

The expansion of productive capacity was substantial. In 1997, total vehicle output peaked at over 2 million units, what would happen again only in 2004 and afterwards. However, the huge movement of mergers and acquisitions also caused the denationalisation of parts of the automotive sector, especially the auto parts industry, where large foreign Tier 1 and Tier 2 companies bought up national suppliers. For instance, Metal Leve was sold to Mahle, while other companies (Varga, Nakata and Cofap) were also acquired by foreign capital (Fleury and Fleury 2009).

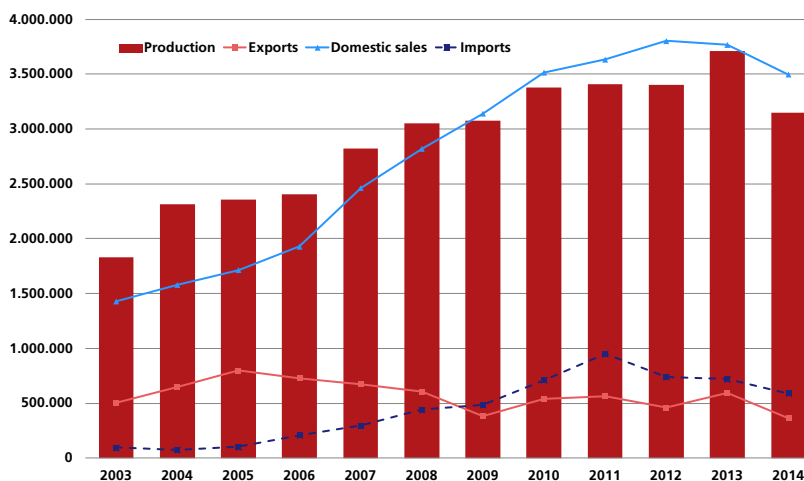
Hence, the period after 1990 was marked by a more intense interaction between carmakers and suppliers in Brazil and abroad, given the mobility of trade and financial flows. Consequently, the Brazilian automotive in-

4 According to data from Anfavea (2016), total imported vehicles rose from 115 units in 1990 to almost 370,000 units in 1995.

5 Carmakers that entered the Brazilian market as producers in the second half of the 1990s included Honda (1997), Renault (1998) and Nissan (2000). Toyota also expanded its activities in Brazil in 1998 and Peugeot-Citroën established a factory in 2001.



Figure 1: Automobile production, sales, exports and imports, Brazil, 2003–2014



Source: Prepared by authors based on Anfavea data.

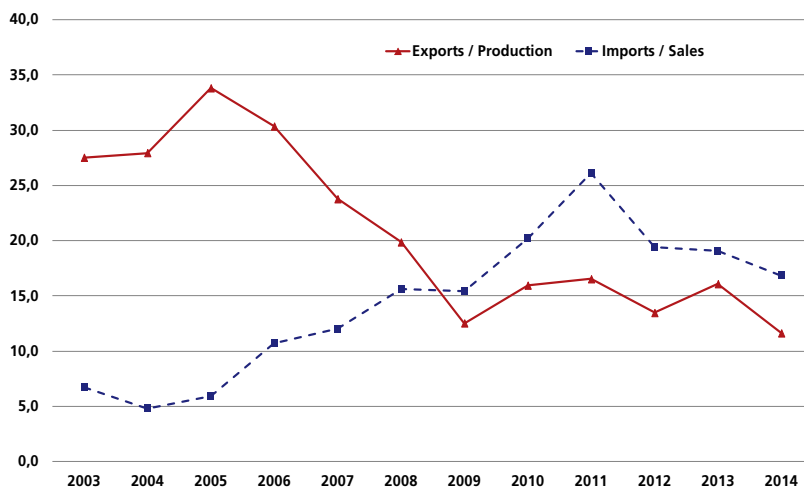
dustry as a whole was more exposed to international competition in comparison with previous decades. While this process helped to bring foreign technology into the country, modernise factories and assembly lines and promote quality improvements, it also threatened the survival of national companies in the sector, productive linkages along the domestic chain and the industry's external balance of accounts.

3.2 The Recent Period

The automotive sector remains a significant economic and sectoral player because of its strong multiplier effects in the domestic economy. According to Anfavea (2015), in Brazil the automotive sector – including auto parts – accounted for 23 per cent of manufacturing industry GDP and 5 per cent of total GDP in 2013, generating revenues of USD 110.9 billion and tax revenues – in this case, only the automobile sector – of R\$ 178.5 billion in 2013 (roughly, USD 70 billion). Moreover, this sector employs, directly and indirectly, more than 1.5 million people and has an installed capacity of 4.3 million vehicles per year, with total investments of USD 68 billion from 1994 to 2012, including auto parts.



Figure 2: Export/production and import/sales ratios, Brazil, 2003–2014 (%)



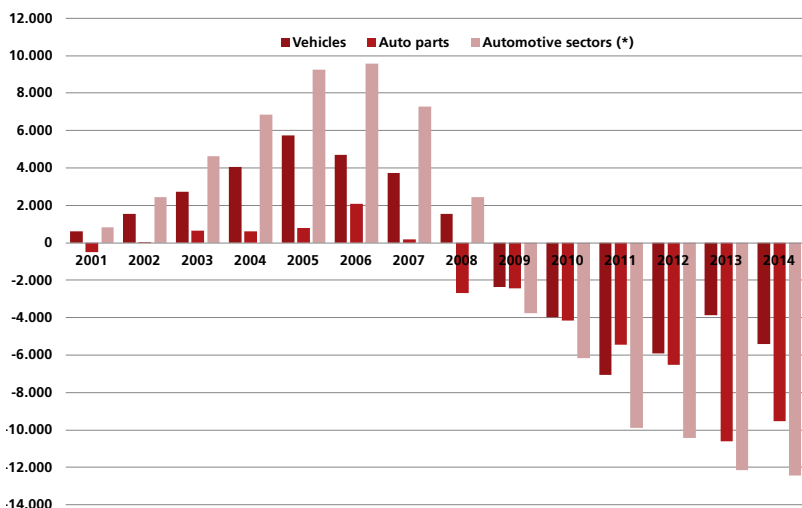
Source: Prepared by authors based on Anfavea data.

As already noted, vehicle production in Brazil doubled from 2003 to 2013, when it reached 3.7 million units, despite a sharp 15.3 per cent decline in 2014 because of Brazil's economic crisis (Figure 1). Even during the international financial crisis (2008–2009) and the ensuing years, production expanded. In the early years of the period under analysis, production increased mainly due to higher exports. The production export coefficient peaked at 33.8 per cent in 2005, when it began to decline (Figure 2). In the following years, however, domestic demand picked up and drove output. Since the second half of the 2000s, domestic demand for vehicles has been boosted by the population's real income gains, rising formalisation of employment (by allowing workers to have access to credit) and improved financing conditions for vehicle acquisition, for example, lower interest rates and longer payment terms, in addition to the recent policy of reducing the tax on industrial goods (IPI, from the Portuguese acronym) in response to the crisis. With domestic demand rising faster than domestic production, a rising portion of domestic sales started to be met by imports (Figure 1). The sales coefficient of imports, which stood at only 4.8 per cent in 2004, rose sharply thereafter (Figure 2).

Since the crisis, Brazil has experienced a reversal of its previous development, and national demand for vehicles has been increasingly satisfied



Figure 3: Trade balance of vehicles and auto parts, Brazil, 2001–2014 (million USD)



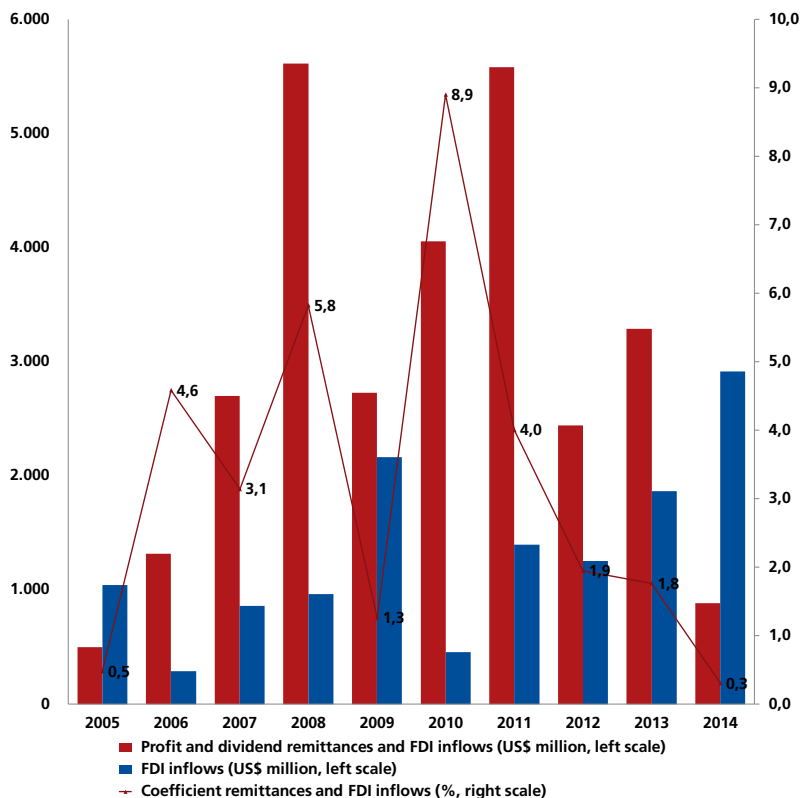
Source: Prepared by the authors based on Secex-MDIC data.

by foreign supply. Despite a partial recovery of exports, imports grew more sharply, increasing the trade deficit of both vehicles (beginning in 2009) and auto parts (starting in 2008), as Figure 3 shows. This movement signalled a new strategy by corporations to increasingly meet the rapidly recovering domestic demand from foreign supply. In 2011, the imported vehicle-to-sales coefficient rose to 26.1 per cent, only to fall over the following years due to the adoption of public policy tools (Figure 2).

Besides the deleterious effects of imports on domestic industrial development, automotive industry corporations with branches in Brazil eventually adopted the strategy of repatriating a large share of earnings made in the Brazilian market, especially because of the international crisis, to offset – at least partially – losses made elsewhere. Figure 4 depicts this move, showing that profit and dividend remittances, which could have been reinvested in Brazil, were significantly higher than FDI inflows. For the sake of illustration, from 2008, when the international financial crisis broke out, to 2014, profit and dividend remittances totalled USD 24.6 billion, whereas new foreign corporate investment inflows amounted to only USD 11 billion. The sector's investments in the country therefore could have been bigger than those announced by the companies in that period.



Figure 4: Profit and dividend remittances and FDI inflows in the automotive sector, Brazil, 2005–2014

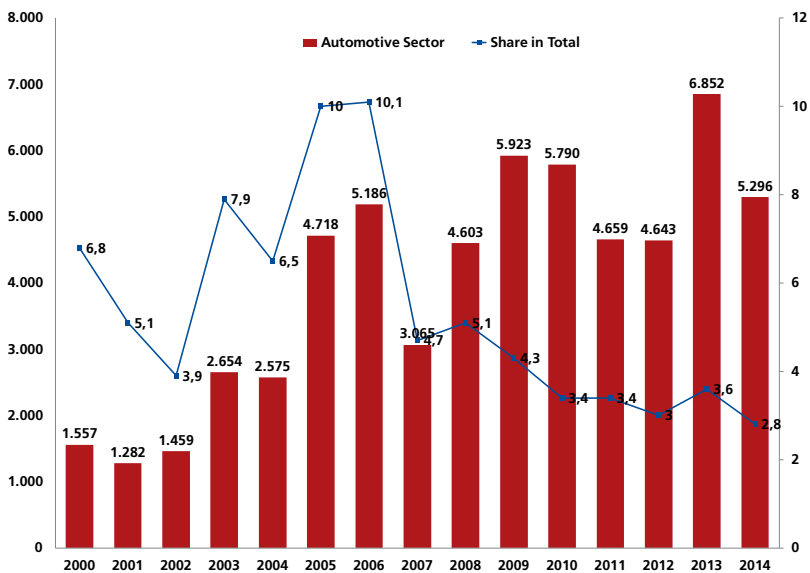


Source: Prepared by the authors based on data from the Central Bank of Brazil.

Carmakers not only sent high profit and dividend remittances to their corporate headquarters at home, but also took out sizable loans at highly favorable interest rates from the Brazilian national development bank (BNDES) to finance their investments. Even though the automotive sector's share in total BNDES outlays fell over the 2008/2014 period, carmakers took out loans amounting to R\$ 37.8 billion, or USD 20 billion. Therefore, the amount borrowed was quite close to that of the profit and dividend remittances. If we consider that investments announced for the automotive sector over the 2008/2013 period, according to industrial associations Anfavea and Sindipeças, amounted to USD 23.4 billion for car manufacturers and USD 11 billion for the auto parts segment, reinvesting all or a



Figure 5: Development of BNDES outlays to the automotive sector, Brazil, 2000–2014 (million reais – R\$)



Source: Prepared by the authors based on BNDES data.

considerable portion of profits and dividends remitted abroad would have significantly increased sectoral investment.

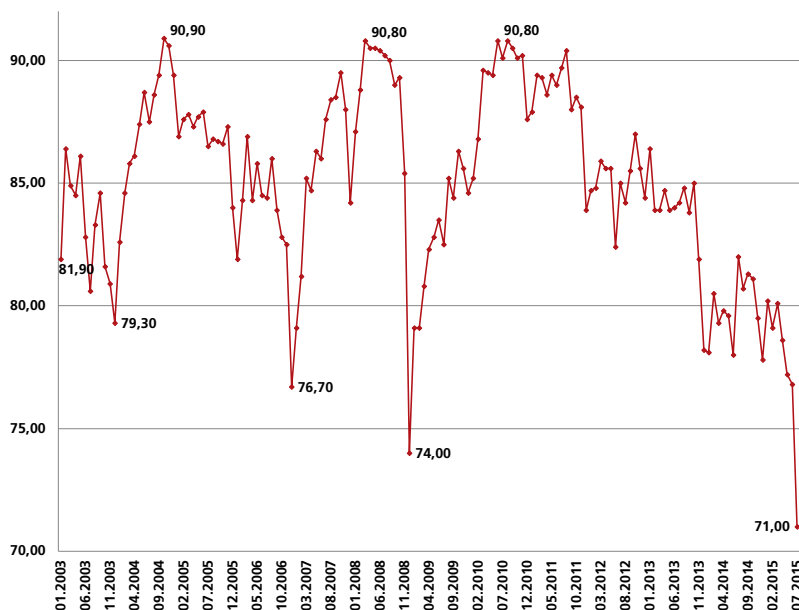
Furthermore, it is worth underlining the evolution of the installed capacity utilisation rate for the automotive segment, given that it is a concentrated sector operating at planned capacity. Figure 6 shows the sector's high level of utilisation capacity over recent years, which should be an additional indication of new investments. It is worth noting the heavy impact of the crisis on capacity utilisation in late 2008; it had been around 90 per cent but fell to 75 per cent.

Nevertheless, with the implementation of measures to restore demand installed capacity utilisation gradually recovered, once again reaching 90 per cent in 2010. Conversely, most global markets have been working with high idle capacity levels. In the European Union, for example, excess capacity was estimated at 30 per cent in 2012.

Given expanding domestic demand and high utilisation capacity in Brazil, a significant increase in the sector's productive capacity through new investments would have been fully justifiable. The opposite happened, however. Idle capacity rose and by the end of 2014, the utilisation rate



Figure 6: Installed capacity utilisation rate: automotive vehicles, Brazil, 2003–2014 (%)



Source: Prepared by the authors based on industrial indicators issued by the industrial association CNI.

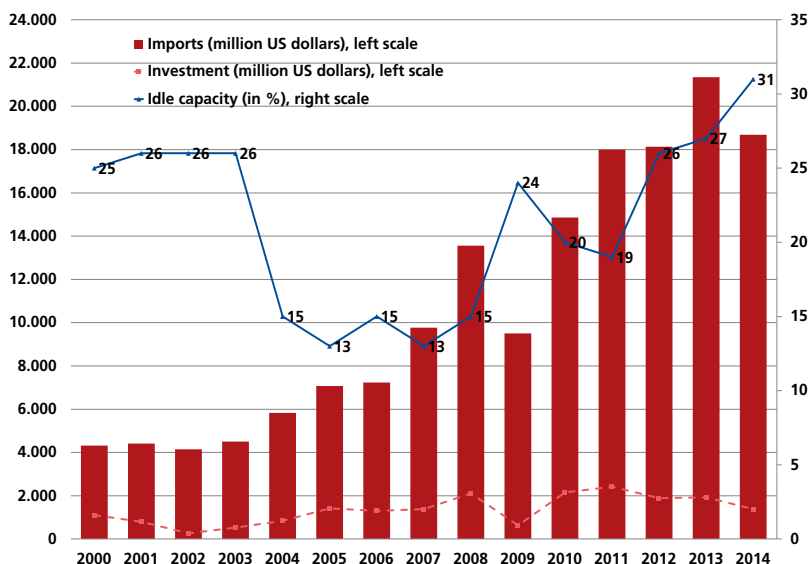
reached its lowest level since the beginning of the 2008 international crisis, at 77.8 per cent.

In the case of the auto parts sector, the exponential growth of imports inhibited investments, as reflected by the rising import content of domestic vehicle production. During the recovery of vehicle production (2004 to 2008), the sector's idle capacity was about 15 per cent. After the international crisis, auto parts imports grew sharply, up from USD 13.5 billion in 2008 to USD 21.3 billion in 2013, which increased the sector's idle capacity from 15 per cent to 27 per cent, despite the record 3.7 million vehicles produced in 2013. With that, the investment flow in the auto parts segment remained nearly constant, at around USD 2 billion per year, well below the investments made by carmakers.

This asymmetrical dynamic between carmakers and suppliers was also reflected in the evolution of industrial employment. The auto parts sector is more employment-intensive than car assembling, accounting for 195,000 and 126,000 jobs, respectively, in 2014. In the aftermath of the international crisis, a period when imports, chiefly of auto parts, rose sharply (2008–



Figure 7: Evolution of imports, investments and idle capacity in the auto parts sector, Brazil, 2000–2014 (millions USD and %)



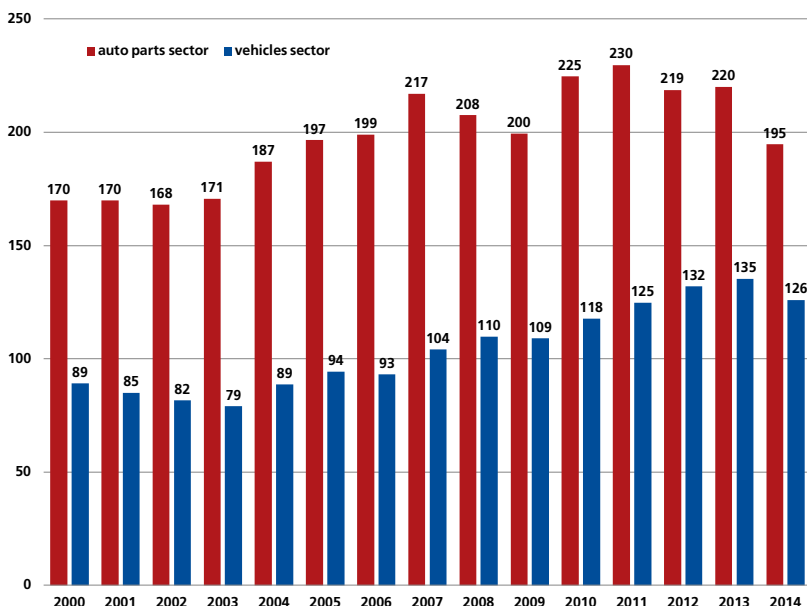
Source: Prepared by the authors based on data from the industrial associations Sindipeças and Anfavea.

2013), the employment expansion rate in the auto assembly sector was four times that of the supplier sector (23 per cent against 6 per cent). In both segments, the evolution of employment trailed behind production, mirroring productivity gains that, though they failed to prompt better export performance due to an overvalued exchange rate, led to cost reductions and buoyed profitability. For the sake of illustration, while vehicle production doubled between 2003 and 2013, up from 1.8 million to 3.7 million units, employment in the assembly sector expanded by slightly over 70 per cent, growing from 79,000 jobs in 2003 to 135,000 jobs in 2013. It is also worth highlighting that the recent crisis in the Brazilian automotive industry in 2014 wiped out 34,000 jobs in the two segments together (Figure 8).

Lastly, it is worth emphasising the recent investment cycles in Brazil (Figure 9). The factors underlining the investment cycle in the mid-1990s included both domestic conditions and regional integration in a context of economic liberalisation. The most recent investment cycle refers to the expansion of the domestic market beginning in the second half of the 2000s. This cycle was driven by the country's recovery in terms of employment and income, the expansion of domestic demand, the reduction of interest rates



Figure 8: Employment in the vehicles and auto parts sector, Brazil, 2000–2014 ('000 jobs)



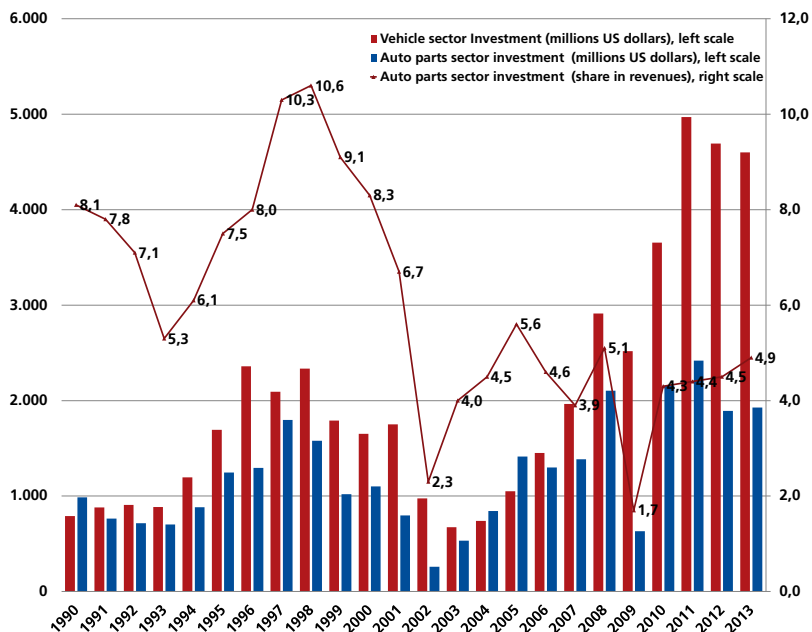
Source: Prepared by the authors based on data from Sindipeças and Anfavea.

and opportunities for corporate financing from the national development bank (BNDES). This investment cycle was interrupted by the crisis in 2009, but rebounded in the 2010/2013 period above pre-crisis levels (USD 5 billion) due to investment plans executed by new Brazilian market entrants (Hyundai and Chinese manufacturers) and companies already based in the country. It is important to note that these investments aimed primarily at modernising and streamlining products and processes rather than enlarging productive capacity, which remained close to 4.3 million vehicles. However, if the entrance of these new players will not significantly affect the Brazilian supply side, on the other hand, it may eventually escalate local competition.

There are some noticeable differences between the pre-crisis (2003–2008) and the post-crisis (2009–2013) investment cycles, particularly when we separate the investments of assemblers and those of parts suppliers. First, total investment was more substantial in the second than in the first cycle, although we must bear in mind the considerable impact of the overvalued currency on investment valuation. Moreover, as already analysed, total investments by assemblers during the most recent cycle were lower than profit and



Figure 9: Investment volume – vehicles and auto parts, Brazil, 1990–2013



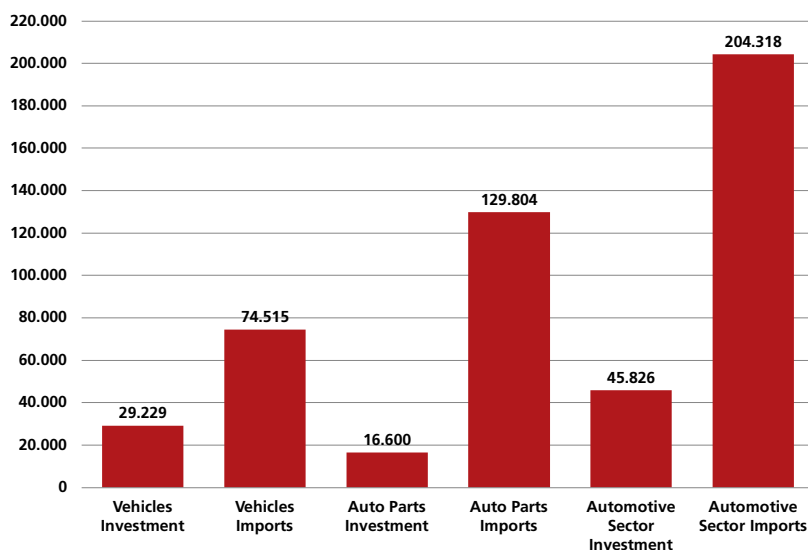
Source: Prepared by authors based on Anfavea data.

dividend remittances. Second, supplier investments tended to track assembler investments in a much higher proportion during the pre-crisis cycle. Although investments by the auto parts sector were indeed significant after the crisis, they fell behind the expansion of assembler investments. Lastly, we can notice a strong decline in the ratio between auto parts companies' revenues and investments, which reinforces the need for public policies to ensure company competitiveness and promote national content-based production.

Another important comparison between these two investment cycles (2003–2008 and 2009–2013) is the evolution of investment vis-à-vis imports in the vehicle and auto parts sectors (Figures 10 and 11). For the automotive sector as a whole, the average annual investment flow more than doubled – up from USD 2.7 billion (accumulated value of USD 16.3 billion) to USD 5.9 billion (accumulated value of USD 29.4 billion) – while annual import flows nearly tripled between the two periods (from USD 10.7 billion to USD 27.9 billion). Accordingly, the imports/investments ratio rose from 3.9 to 4.7. however, this ratio changes dramatically when we compare the auto parts and the vehicle sectors, separately. In the auto parts sector, whose ratio was already



Figure 10: Investments and imports of vehicles and auto parts, Brazil, 2003–2013 (million USD)



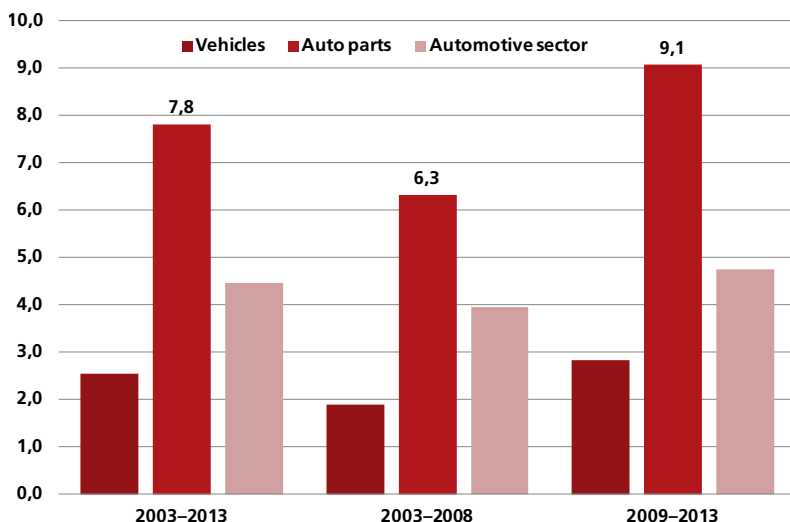
Source: Prepared by authors based on Anfavea and Sindipeças data.

very high at 6.3, the ratio reached 9.1 in the second period, with investment flows remaining nearly constant and imports rising sharply. In the vehicles sector, despite an expansion of investment, the more than proportional rise in imports caused the imports/investments ratio to grow from 1.9 to 2.8.

This rising import/investment ratio in both segments clarifies the main challenge to the sector's contribution to industrial development. A rapid rebound of domestic demand has translated into increased foreign supply rather than strengthening the country's production linkages. Profit and dividend remittances in relation to foreign investments have been increased and state credit has replaced corporate funds in financing investment. Moreover, these developments have occurred in the context of a high but declining installed capacity utilisation rate for the sector in Brazil and of relative idleness in developed economies. Hence, policies are required that, in tandem with corporate interests, promote investment with low import elasticities, which help to preserve and expand existing domestic production clusters. It is a government concern to maintain national production levels by implementing policy changes for the sector over the coming years so that demand-side stimulus and domestic market recovery may drive domestic production in assembling and vehicle components rather than benefiting the import sector.



Figure 11: Vehicles and auto parts import/investment ratio, Brazil, 2003–2008 and 2009–2013



Source: Prepared by authors based on Anfavea and Sindipeças data.

4 Development Strategies and Policies for the Brazilian Automotive Industry

4.1 Automotive Policies 2008–2012

During the global economic crisis of 2008–2009, the Brazilian government swiftly implemented an industrial goods tax break policy, with rates varying according to vehicle type, including a zero-tax rate for 1.0 litre cars. The key goal was to jump-start final demand for vehicles in the short term and to avert a deepening of the crisis in terms of employment and income.⁶ Thereafter, tax rates were gradually increased again until they reached pre-crisis levels by 2010 (Table 4).

In September 2011, a new automotive regime was announced, which was valid from December 2011 to December 2012. To contain the growth of imports, carmakers were requested to use a minimum of 65 per cent of

⁶ For a comparison of the auto industry's stimulus policies adopted by several countries in response to the international crisis, see Borghi (2011); for Brazilian tax policy, see Borghi (2013). As regards heavy vehicles, trucks started to enjoy a zero-tax rate, which had already been extended to buses.

Table 4: Post-crisis changes in industrial goods' tax rates (IPI) on vehicles, Brazil (%)

Engine	Fuel	Before crisis	Dec. 2008*	Jan. 2010	April 2010	Outside new regime** Dec. 2011	May 2012–Dec. 2012***
Up to 1.0	Ethanol or biofuel	7	0	3	7	37	0 / 30
	Petrol	7	0	7	7	37	0 / 30
1.1 to 2.0	Ethanol or biofuel	11	5.5	7.5	11	41	5.5 / 35.5
	Petrol	13	6.5	13	13	43	6.5 / 36.5
Light commercial	All	8	1	4	4	34	1 / 31

Notes:

* Rates in force until March, June and September 2009, after several extensions. Steady return, with monthly rises, until January 2010, to the pre-crisis level. In the case of ethanol- and biofuel-powered vehicles, original levels were hit in April 2010.

** Launched in September 2011 and in effect from December 2011 to December 2012, with new rules effective from 2013 to 2017.

*** On the left, effective rates on vehicles under the automotive regime rules. On the right, rates on vehicles not meeting the automotive regime rules effective through 2012.

Source: Executive orders no. 6687 of 11 December 2008, no. 6809 of 30 March 2009, no. 6890 of 29 June 2009, no. 7017 of 26 November 2009, no. 7660 of 23 December 2011, no. 7716 of 3 April 2012, no. 7725 of 21 May 2012 and no. 7834 of 31 October 2012. Also see Anfavea (2010) and Prado (2012).

local or regional (Mercosur and Mexico) content in vehicle manufacturing, invest in R&D and carry out most of the productive stages in Brazil. Tax rates for vehicles not in compliance with the new regulation were raised by 30 percentage points (Table 4).

4.2 The Inovar-Auto Regime

Effective from 1 January 2013, by Presidential Decree 7819/2012, Brazil issued a new regulation known as »Inovar-Auto« (*Programa de Incentivo à Inovação Tecnológica e Adensamento da Cadeia Produtiva de Veículos Automotores*). Inovar-Auto is a cornerstone of the federal government's industrial, technological and foreign trade policy, as expressed in the plan *Brasil Maior*. The programme is designed to provide tax incentives for investment in local supply chains, including R&D, and the production of more fuel-efficient vehicles. To qualify for a 30-percentage-point industri-



al goods' tax (IPI) reduction, companies should comply with three out of four conditions:

- (i) invest at least 0.15 per cent of gross operating income in innovation in 2013 and gradually raise the percentage to 0.5 per cent by 2017;
- (ii) invest at least 0.5 per cent of gross operating income in engineering and raise it to 1 per cent in 2017;
- (iii) carry out eight out of 12 manufacturing stages⁷ in Brazil in the case of light vehicles and 10 out of 14 in the case of heavy vehicles in 2013. Local manufacturing should rise by 2017 to 10 of 12 stages and 12 to 14 stages, respectively, for light and heavy vehicles;
- (iv) raise vehicle energy-efficiency levels to the standards set by the national standards certification agency *Inmetro* (for 25 per cent of the vehicles manufactured in 2013, increasing to 100 per cent in 2017).

The establishment of the new automotive regime reveals a strong government concern with, and policy breakthroughs for, domestic manufacturing, including local technological innovation. However, additional sector-wide and macroeconomic stimulus mechanisms are required to create positive impacts on the production chain, especially given the slow-growth phase in the world economy. Promotional policies could include:

- reducing the interest rates on both vehicle sales (and, therefore, extending lower-rate consumer credit) and the financing of corporate investments;
- keeping a more stable and devalued exchange rate;
- adopting measures to ensure the competitiveness of auto parts suppliers;
- negotiating a tax reduction for companies meeting pre-established goals (as regards domestic production and technological innovation), similar to the industrial goods' case (IPI) for the automotive industry;
- providing fiscal incentives and/or increased credit lines through federal foster agencies or the national development bank (BNDES), to boost corporate R&D investment in the country;

7 The 12 manufacturing stages are: stamping; welding; anti-corrosive treatment and painting; plastic injection; engine manufacturing; gear and transmission manufacturing; assembly of steering and suspension systems; assembly of electric systems; assembly of brake and axis systems; assembly of car chassis and bodywork; assembly, final inspection, and testing; and proprietary lab infrastructure for development and testing of products.



- supporting joint technological development activities between auto-makers and Tier 1 and Tier 2 suppliers operating in Brazil, primarily to enhance energy-efficiency levels and reduce exhaust emissions with bifuel technology;
- fostering research partnerships between companies and universities with a view to, for instance, generating or improving sustainable technologies;
- strengthening skill-building by means of technical courses and higher education in engineering, including internationalisation of education and research.

Conclusions

Vehicle manufacturing in emerging economies depends on coordinated policies designed to take advantage of the global restructuring of the automotive industry. The competitive capacity of local industry must be strengthened to yield positive effects in terms of job and income generation over the rest of the economy.

Over the past decade, Brazil witnessed a mismatch between domestic supply and demand, which has resulted in increased imports of vehicles and auto parts. High volumes of funds that could have been invested in the country to strengthen its productive base were remitted abroad by foreign carmakers. With the low competitiveness of the Brazilian automotive industry, exports could not cushion domestic sales.

It seems crucial that Brazil seeks a new investment cycle to expand its domestic manufacturing capacities over the coming years for both the vehicle assembling and the auto parts sector. Increasing capacities should be accompanied by fostering product quality and technological innovation.

The Inovar-Auto regime for the period 2013–2017 is a step in this direction. It provides federal incentives for investments by vehicle manufacturers in increased domestic manufacturing, while at the same time promoting local engineering, technological innovation and more environmentally-friendly products. Support for corporate investment in product cycles with higher local and technological content and an improved macroeconomic environment represent necessary steps to set growth impulses for the sector, with positive multiplier effects on economic and social development in Brazil, over the next decade.



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Development and Structure of the Automotive Industry in Mexico

Clemente Ruiz Durán

1 Introduction

In 2015, Mexico produced 3.4 million motor vehicles and occupied seventh place among vehicle manufacturers globally. This level of output was twice that of 2005, when Mexico was tenth largest producer in the world. This surge is the result of large investments by international automotive and auto-parts companies that, according to the Ministry of the Economy, reached around 20 billion dollars between 2013 and 2015. Global automotive producers' relocation of production facilities to Mexico has been influenced by the country's membership of the North America Free Trade Agreement (NAFTA), its highly skilled labour force and low wages.

Mexico's upswing has not yet reached its end. The country is projected to be the world's fifth largest producer of vehicles by 2020. The federal government has launched a Strategic Programme for the Automotive Industry 2012–2020, which seeks to combine strategies and policies to make Mexico one of the top three preferred locations worldwide in car assembling and component production. While much of this dynamic should come from exports, the government plans to broaden the domestic market for vehicles with more technology to support the green economy.

The automotive industry has taken a central role in the process of industrialisation in Mexico; it has opened the way to a new economic relationship between Mexico and the rest of the world and is considered a prototype for the development of technical capabilities in the country. Around 100,000 engineering students and technicians graduate every year and there are 900 postgraduate programmes in Mexican universities related to engineering and technology. The skills and abilities of the domestic labour force in the automotive industry have favoured the



emergence of other industrial branches. Moreover, positive externalities have been generated from these activities, fostering the rest of the economy.

Currently, the automotive industry faces huge challenges. The quality of car manufacturing needs to be improved and the sector must become competitive at higher wage rates. The new United Nations' Millennium Goals call for sustainability, with the prospect of automotive manufacturing becoming part of a green economy. To achieve all this it is imperative to establish a tripartite commitment involving companies, workers and the public sector, under a new industrial paradigm.

2 The Automotive Industry in Historical Review

The automotive sector in Mexico has been key to its industrial development. A number of development policies have been implemented, known as the »automotive decrees«, issued over time by the federal government to regulate production and sales. These policy interventions include limits on the number of companies allowed to produce finished vehicles, restrictions on foreign direct investment (FDI) in components production, minimum local content requirements and further regulations, such as prohibitions of vehicles and parts imports.

2.1 The Early Years

The history of the automotive industry in Mexico dates back to 1921, with the establishment of a Buick assembly plant. In 1925, Ford opened a plant and set up production of up to 100 vehicles per day thanks to its mass production. In 1935, General Motors arrived on the scene, while in 1938 Automex and Chrysler joined hands in the assembly of automobiles. All projects focused their activities on the assembly of foreign vehicles for local demand, which had previously been met through imports.

In the 1940s, regulations that restricted the import of fully built-up automobiles were established, in line with the new import substitution policy (Acevedo 1989). In 1948, Trailers Monterrey Freuhauf, S.A. began operations with the repair and reconstruction of tractor units and the import of semi-trailers; this company was transformed in 1952 and began to manufacture trucks.



After the Second World War, the government pushed for the emergence of a nationally owned industry in the manufacture of trucks and buses. As a result, in 1951 Diesel Nacional, S.A. (DINA) was created, with the federal government holding 78 per cent of its capital. The company set up operations in Ciudad Sahagún with a license and technical consulting agreement from the Italian firm Fiat.

2.2 Promoting Import Substitution

The 1960s saw the deepening of industrialisation based on import substitution. In 1962 the First Automotive Executive Decree was issued, which pushed the development of the automotive industry. Plants focused exclusively on assembly and less than 20 per cent of the components used were of domestic origin. Sales were covered mainly with imported vehicles. The new rules included the following:

- imports of finished vehicles (passenger cars and trucks), as well as of larger and more complex components, such as engines and transmissions, was limited;
- minimum local content was fixed at 60 per cent;
- FDI in component manufacturing had to move into joint ventures, with its capital share limited to 40 per cent;
- price controls were introduced with the goal of encouraging productivity increases.

With these domestic market protection policies, the automotive industry grew substantially. New manufacturers arrived. Volkswagen opened a plant in Puebla in 1964 and Nissan in Cuernavaca, Morelos, in 1966, the first Nissan assembly plant outside Japan. In 1964, Ford established two new plants in the State of Mexico, while General Motors (GM) opened a complex including an engine plant and a foundry in Toluca in 1965. Following the same path, Chrysler opened an engine manufacturing plant in Toluca in 1964 and another assembly plant in 1968. This avalanche of investment paved the way for an increase in domestic production, from 96,781 vehicles in 1965 to 250,000 units in 1970.

The achievement of local content policies was reflected in the growth of the auto parts sector, with some Mexican companies, such as Tremec and Spicer, becoming suppliers of transmission systems, and foreign investors, such as Eaton from the United States, arriving in the country.



2.3 Combining Import Substitution with Export Promotion

While in the long run it was assumed that localising production in Mexico could lead to balanced trade, even a surplus, in the short and medium term, local manufacturing increased the import of upstream components and thus the need to earn foreign currency from other export sectors. During the first years of import substitution policies, the operations in the automotive industry led to a growing trade deficit, which eventually contributed to one-sixth of Mexico's total trade deficit. The growing imbalance between the sector's foreign exchange earnings and expenditure led to an industrial policy that tried to link import substitution with export promotion. Under this scenario, the Second Automotive Executive Decree (DOF, 1972) established a new regulatory regime:

- the minimum percentage of local content for vehicles produced for the export market remained at 60 per cent;
- vehicle manufacturers were compelled to export cars equal to 30 per cent of the value of their component imports, with an increase per year of an additional 10 per cent to reach 60 per cent in 1976.

The new policy encouraged further FDI. In 1981 GM opened a new assembling plant in the city of Ramos Arizpe, Coahuila, and Chrysler established an engine manufacturing plant. Nissan followed suit with an assembly plant in Aguascalientes in 1982; while Ford added two more plants: an engine plant in Chihuahua in 1983 and, together with Mazda, an assembly plant for export in Hermosillo, Sonora in 1986.

2.4 Foreign Debt Crisis and the Turn to Full Export Promotion

The Second Automotive Executive Decree of 1972, while geared towards more balanced national trade, did not prevent Mexico from defaulting on its foreign loans in 1981. The conditionality imposed on the country by the IMF bailout programme finally ended the phase of import substitution policy. All economic policy activities from then on were directed towards earning foreign currency, so import savings and export promotion became the philosophy of the day.

In 1983, in midst of the debt crisis, a new regulation was issued under the title Decree for the Rationalization of the Automotive Industry to foster



auto exports; most of the attention was directed towards vehicles rather than auto parts. Minimum local content requirements in vehicles for international markets were differentiated by type of vehicle. From 1987 onwards local content for automobiles was fixed at 60 per cent, for light trucks at 70 per cent, for heavy trucks 80 per cent and for truck tractors 90 per cent. Budgetary policies from then on followed the principle of promoting a foreign exchange equilibrium in the industry (DOF, 1983). The new directive, together with a falling exchange rate and increases in productivity, produced a surplus in the auto industry trade balance. During that time, the government sold its shares of Renault and Mexican Motor Vehicles (VAM) to French and United States investors and withdrew from direct investment in the sector.

The change in government strategy from import substitution to export promotion was further deepened with a new Decree in December 1989, in which economic deregulation was supposed to help modernise production. The new regulation, the Decree for the Modernisation and Promotion of the Automotive Industry (DOF, 1989), authorised the import of new vehicles for the first time since 1962, as long as the assembling industry as a whole maintained a trade surplus. The requirement for local content was reduced to 36 per cent and more imports were allowed to force the local component industry to become more competitive. Protection was maintained for the popular cars produced locally for low-income consumers, however. Here, competing imports of compact vehicles were still prohibited, providing markets for the Volkswagen's Vocho¹ and Nissan's Tsuru.

From these new policies, a new geography of the automotive and auto-parts industries emerged: plants migrated to the northern part of the country to be nearer to the US market – Sonora, Chihuahua, Coahuila and Nuevo Leon – and new auto clusters were born in the centre of the country due to the decentralisation of the industry out of crowded Mexico City to regions that could provide highly-skilled labour, mainly the Bajío region. Nissan opened a new plant in Aguascalientes in 1982 and General Motors another one in Guanajuato in 1994. At that time, annual exports of engines reached 2.5 million, with markets spreading globally, including Japan.

1 With the help of fiscal incentives, the »Vocho« (the popular name for the Volkswagen Sedan) came to be sold for less than USD \$5000. In its time, the »Vocho« was the cheapest car in the world. During the first year after the decree's enactment, 100,000 units were sold, which was a huge amount at that time (the one millionth Sedan was manufactured in Puebla in 1990).



2.5 New Market Environment under NAFTA

On 1 January 1994, the United States, Canada and Mexico established the North American Free Trade Agreement (NAFTA) and created a free trade zone. Custom duties were reduced to zero by the United States in 1994 and Mexico was allowed to reduce them progressively between 1994 and 2003. NAFTA offered great potential to the export sectors of member countries, but its enactment also created tensions, in particular related to the application of the Rule of Origin and the opening up of the import sector. In the end, a compromise was agreed which gave Nissan and Volkswagen time to restructure their supply chains away from third countries, while at the same time they had to give up their local monopoly in the popular car segment. This was a good opportunity for General Motors to get into that segment, with its Chevy and similar cars.

As a result of NAFTA, import duties on automobiles and light trucks were reduced from 20 per cent to 10 per cent in 1994, and then to 3 per cent in 1998.² The minimum domestic content for vehicles manufactured in Mexico was defined as follows: 34–36 per cent in 1993, 29 per cent in 1998 and zero by 2004.

By the time NAFTA came into force in 1994, Mexico's auto production was sold in domestic and foreign markets in equal proportions (Annex 1); under the new trade agreement, exports started to grow much faster than production for local markets, so that by 2000 purchases abroad were already three times higher than those for domestic demand and by 2015 this ratio had increased to 4.3 times. The increase in capacity was largely financed from FDI.

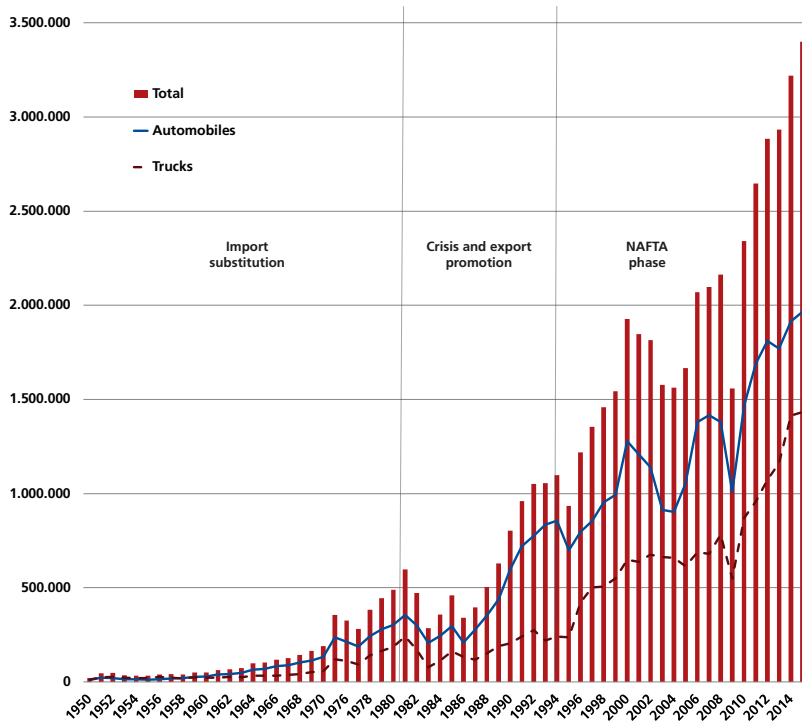
In December 2003, the government issued the Decree for Supporting the Competitiveness of the Terminal Vehicle Industry and the Encouragement of the Development of the Domestic Automobile Market (DOF 2003), which recognised the need to improve the competitiveness of the Mexican automotive sector. Among other things, the new policy tried to strengthen domestic production by further promoting FDI and lowering the costs of imports through tariff reductions. The main features of the Decree were as follows:

- It allowed the entry of new car manufacturers into the finishing assembly segment, as long as their investment in fixed assets was at least 100 million dollars and they committed themselves to manufacture 50,000

2 16 per cent of the auto-part tariff codes were reduced immediately, 54 per cent had a reduction within the first five years and all duties were eliminated at the end of ten years.



Figure 1: Phases of automotive production, Mexico, 1954–2014 (units)



Source: Asociación Mexicana de la Industria Automotriz A.C. (AMIA). Asociación Nacional de Productores de Autobuses, Camiones y Tractocamiones, A.D. (ANPACT).

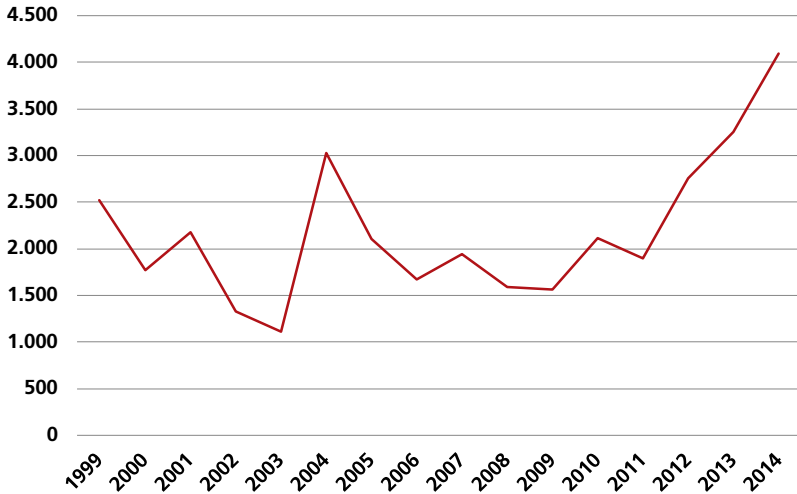
vehicles or more annually, within a period of three years from the beginning of operations.

- A zero tariff rate for imports of specific vehicles, with numbers being limited to the value equivalent to 10 per cent of local car production in the previous year.
- Auto companies were allowed to import vehicles if they committed to investments to expand infrastructure in Mexico and if they developed programmes for training local suppliers and transfer technology to Tier 1 and Tier 2 suppliers.

In 2008 a decree (DOF 2008) was adopted to establish mechanisms to limit imports of used automobiles from Canada and the United States, depending on the characteristics of the vehicle (Covarrubias Valdenebro 2014). The



Figure 2: FDI into the automotive industry, Mexico, 1999–2014 (USD million)



Source: Own compilation based on data from Dirección General de Inversión Extranjera

purpose of this legislation was to maintain restrictions on the import of used vehicles into Mexico under new liberal NAFTA trade rules.

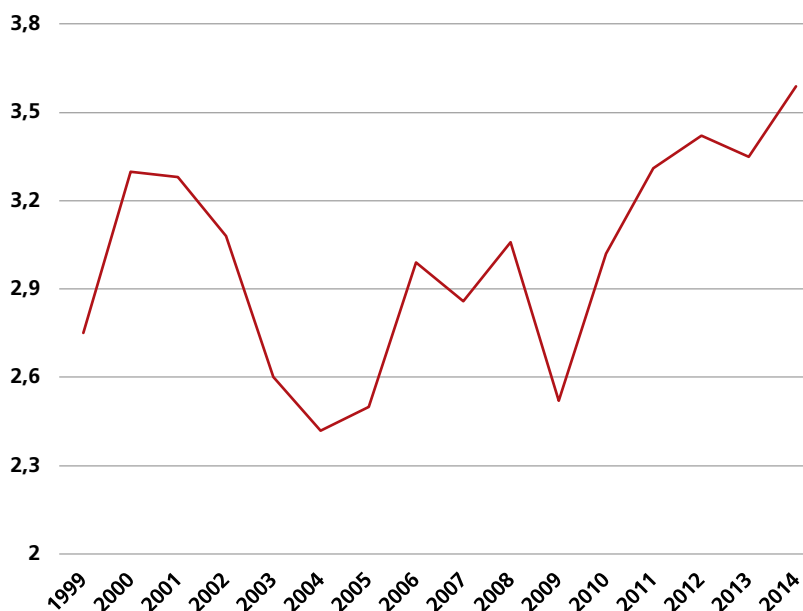
The overall impact of the various regulatory regimes on the national production of vehicles is summarised in Figure 1. During the first phase of import substitution, national production capacities were developed that lifted output to around half a million vehicles. The foreign-debt crisis of 1981 brought in a first scheme of export promotion policies, which helped to double production capacities to around one million vehicles a year. The inception of NAFTA provided a huge push and helped to establish the automotive sector as a key manufacturing activity in the country, producing 3 million vehicles in 2015.

3 Building a National Automotive Industry

In the segment for passenger cars, Mexico only had one project to develop a domestic industry. In 1961, the German company (Borgward) had gone bankrupt and two years later Mexican businessmen bought its machinery to produce the Borgward Isabella and the P100. The new Borgward plant was located in the municipality of General Escobedo, Nuevo León, which is why this city is generally known as the »cradle of the Mexican automotive



Figure 3: Mexico's share of the global vehicle market, 1999–2014 (%)



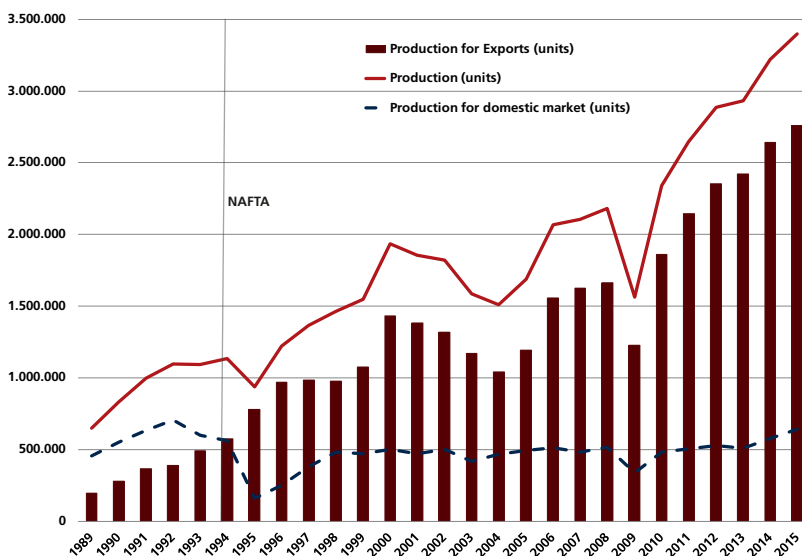
Source: Own compilation based on data from OICA.

industry». This plant produced for three years, from 1967 to 1970, when the company went bankrupt and ended national hopes for Mexican-owned car production.

In the trucks and buses segment there were several attempts to establish national companies, but the only successful case was the state-initiated Diésel Nacional, S.A. (DINA), established in Ciudad Sahagún in 1951. It ventured into the assembly of intercity buses with flexible technology, and in the 1970s also moved into the production of medium-sized trucks with cabs. In 1987, during economic liberalisation, DINA was privatised and signed a technological pact with US-based NAVISTAR, whose technology was used until 1998. In Mexico, the company began selling buses using its own technology and gradually entered the export business. Towards the end of the 1990s, the company went a step further and opened an assembly plant in Buenos Aires, Argentina. To meet the pressure from global competition, DINA began the process of designing passenger buses with chassis and body made entirely by them; the development of its own technology for trucks and buses has allowed them to remain in the bus market and tap into the



Figure 4: Vehicle production for domestic and export markets, Mexico, 1990–2015



Source: Own compilation based on data from INEGI.

truck market. Its sales for 2015 are estimated at 1,081 units, with operations in countries such as Colombia, Perú, Guatemala, Honduras and Costa Rica.

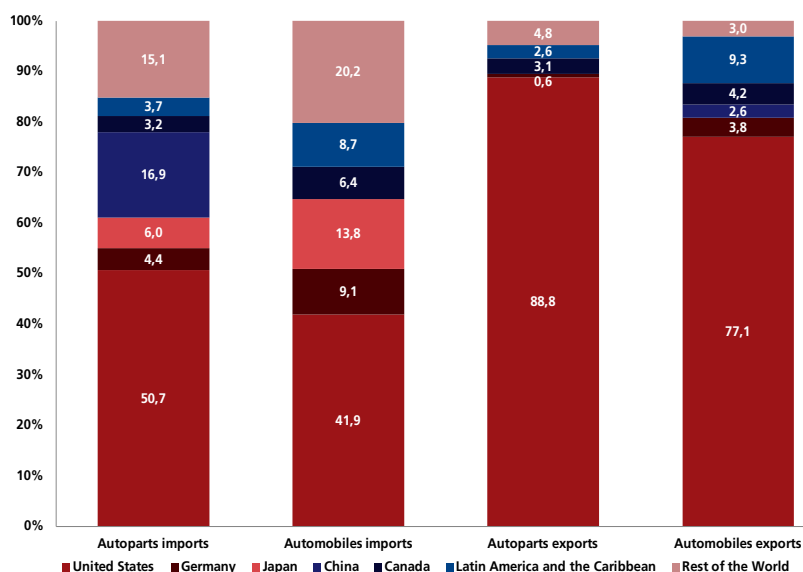
4 FDI and the Internationalisation of the Industry

Global automakers have taken advantage of Mexico's interest in attracting FDI. Of the 407 billion dollars that came into Mexico from 1999 to 2014, 189 billion dollars were earmarked for manufacturing, of which 36.8 billion were absorbed by the automotive industry. Of this, 13.7 billion went into assembling cars, vans, trucks and tractors, 1 billion to manufacture of bodies and trailers and 22.9 billion dollars to the production of auto parts. Figure 2 shows the annual evolution of FDI in the auto industry from 1999 to 2014.

Currently, Mexico's automotive production accounts for 3.7 per cent of global production (Figure 3) and is mainly export-oriented; 83 per cent goes to foreign markets (see Figure 4). This industry is increasingly a foreign exchange provider, accounting for 32 per cent of the income from



Figure 5: Main destinations of exports and country of origin of imports, 2013



Source: Author's elaboration based on data from World Trade Atlas 2014.

Mexican exports, while its import requirements are equivalent to just 14 per cent of total imports, which allows this industry to have a surplus in foreign currency equivalent to 60 billion dollars.³

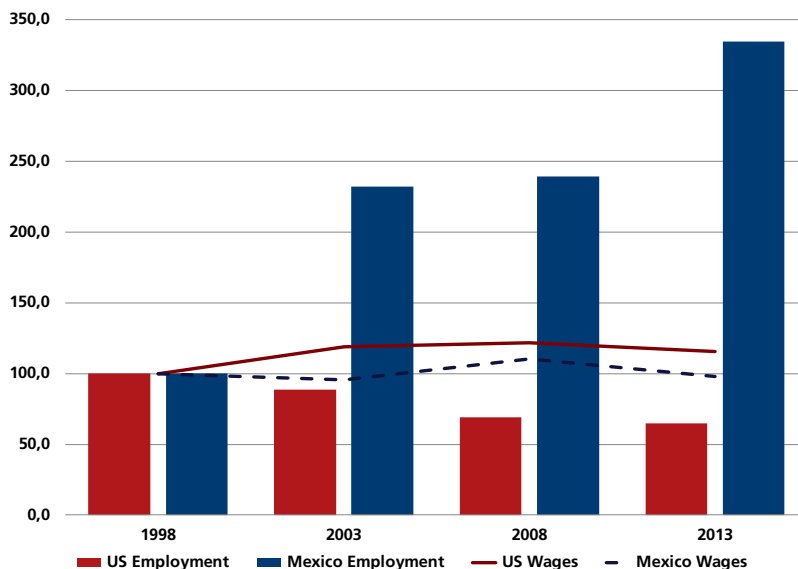
Growth of the automotive sector has been sustained primarily by exports to the United States, which absorbs 89 per cent of Mexico's auto parts production and 77 per cent of its motor vehicle production (Figure 5). However, dependency on its northern neighbour is less pronounced on the import side, where the US share is 50.7 per cent of auto parts and 41.9 per cent of automotive vehicles. China, with 16.9 per cent, has become the second most important provider of car components to Mexico.

Vehicle exports from Mexico to the United States enjoy two comparative advantages. The country's NAFTA membership prevents other member countries from erecting punitive tariffs and secures easy access to their markets. Furthermore, it provides foreign producers with a lower wage level and generates cost advantages when producing in Mexico for export to the United States.

3 Bank of Mexico, Balance of Payments.



Figure 6: Employment and wages in the automotive industry, Mexico and United States, 1998–2013 (Index: US\$; 1980=100)



Source: Mexican Statistics Bureau INEGI.

Another aspect of the relocation of production capacities is the transfer of jobs. Employment in the US automotive sector has been on the decline as jobs have been moved south, with Mexico capturing a large share (Figure 6). The wage gap between the United States and Mexico is enormous and has even increased: the ratio was 5.7 times in 1998, but had increased to 6.8 times by 2013. With the recent devaluation of the Mexican peso, it can be expected that this gap may rise as high as 9.6 times.

Latin America is another target region for its automotive exports. The automotive sector's trade relationship with Latin America was reinforced by the Economic Complementation Agreement (ACE 55), which came into effect on 1 January 2003. This agreement covers products such as automobiles, cargo vehicles, passenger buses, forklifts, trailers, semi-trailers, bodies, farm tractors, harvesters and road machinery, among other things. The main feature of the deal was a transitional arrangement that would later be replaced by a free trade agreement between MERCOSUR and Mexico. However, the difficult situation that Argentina, Brazil, Paraguay and Uruguay were facing has been an argument for delaying this process.



ACE 55 gave Brazilian industry an advantage over Mexico for the first six years and the southern country established protectionist measures with the goal of restructuring its bilateral economic relationships and the value of its currency. Since 2012, the two countries have been renegotiating their automotive agreement, in terms of introducing reciprocal import quotas for light automobiles and no return to free trade, as was projected.⁴ Due to ACE 55, overall bilateral trade grew from 3.8 billion USD in 2002 to 9.4 billion in 2013. Nonetheless, due to the slowing of the Brazilian economy in recent years and the obstacles maintained against Mexican automobiles, bilateral trade dropped again to 7.5 billion USD.

4 As a result of the bilateral negotiations between Mexico and Brazil and the return of import restrictions, in June 2012 Argentina suspended the application of the Agreement and Appendix I (On Trade between Argentina and Mexico in the Automotive Sector) for three years, arguing a disadvantaged trade position compared with that of Brazil. Trade with Mexico was reactivated under a quota mechanism, similar to that negotiated with Brazil. These modifications to the agreement, with both Brazil and Argentina, will be applied until March 2019. The risk of modifying ACE 55 is that the other MERCOSUR member states could try to establish similar protection measures, delaying the process of trade liberalisation in the automotive industry.

Table 1: Local value added in exports of manufacturing production in Mexico, 2003–2013 (% of total value; 2008 constant prices)

Sector	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	8.8	8.9	9.1	9.5	9.5	9.8	9.2	10.2	10.7	11.8	11.6
Manufacturing	7.6	7.6	7.8	8.0	8.1	8.2	7.9	8.8	8.9	10.0	9.8
336 – Transportation equipment (all)	22.2	23.0	24.8	26.0	26.6	28.6	31.4	34.2	33.5	35.1	33.8
3361 – Automobiles & trucks	31.1	33.0	35.5	37.3	40.2	40.8	43.4	47.5	45.0	47.2	46.3
3362 – Motor vehicle bodies & trailers	13.8	10.4	16.8	15.0	14.7	14.7	12.6	15.7	16.0	20.4	23.8
3363 – Motor vehicle parts	17.2	18.1	19.1	18.8	18.2	20.2	23.4	22.9	24.4	25.6	24.7

Source: Mexican Statistics Bureau (INEGI).



5 Auto Industry: Value Chain Development in Mexico

Currently, light vehicle assembly (passenger cars and light commercial vehicles) consists of 18 production complexes located in 11 Mexican states. Activities range from assembly and shielding, to the casting and stamping of vehicles; furthermore, engines are made for some 50 models of cars and light trucks.

Assembly plants have had a multiplier effect for the auto parts industry. The sector producing vehicle components is made up of more than 1,200 economic units and constitutes a system of suppliers from tier 1, tier 2 and tier 3; this has allowed the industry to increase the amount of local added value in the manufacturing of automobiles and trucks from 31 per cent in 2003 to 46.3 per cent in 2013, and for auto parts from 17 to 24.7 per cent (see Table 1).

Looking at the total product cycle of vehicles and including raw material processing and marketing, one can distinguish six phases:

Phase I: raw materials processing, in particular basic aluminium industries and iron and steel complexes. The transformation of raw materials such as metals and nonferrous ores is done by some 180 units, which employ 39,000 workers. In all, some 11.9 per cent of total gross value added stems from this phase.

Phase II: production of pipes, tubes, poles, slabs, pumps, valves, welds, screws and nuts. The further processing of output from phase I involves 1,667 enterprises with 100,000 workers, and adds another 11.9 per cent to the gross value of automotive production.

Phase III: Production of components. 1,409 companies employing 257,000 workers were involved in producing engines, bodies and trailers, as well as transmission systems, steering, suspension and brakes. The branch contributes 20 per cent to total value added.

Phase IV: Production of paints, coatings, oils, carpets, pipes and urethane products. Here, some 35,000 workers are employed in 461 economic units; 10.4 per cent is added to the total value of vehicles.

Phase V: Assembling. This phase involves around 193,000 workers employed in 2,841 economic units. It is worth noting that these activities make the greatest contribution of the total value of the vehicle (36.8 per cent), although it is mainly added by a few large companies (around 114) that contribute 92 cents of every dollar of value added produced in this phase.

Phase VI: Marketing/sales. In terms of employment (270,953) and number of companies (43,170) this final phase contains by far the largest sector of the product cycle, since marketing, and in particular retail sales, is the



Table 2 Average wages in the automotive industry, Mexico, 2003–2014 (USD per person)

Description	Manufacturing industries (all)	Transportation equipment	Automobiles & trucks	Motor vehicle bodies & trailers	Motor vehicle parts
2003	7,164	10,283	17,737	7,015	9,556
2004	7,231	10,284	19,016	7,275	9,493
2005	7,918	11,166	21,157	7,889	10,192
2006	8,335	11,811	20,570	8,438	10,836
2007	8,721	12,299	21,511	9,201	11,205
2008	9,039	13,053	25,074	9,752	11,582
2009	7,734	11,635	21,349	8,775	9,971
2010	8,450	12,383	22,101	9,346	10,666
2011	8,961	13,075	23,113	10,499	11,096
2012	9,019	12,724	21,996	9,405	10,991
2013	9,558	13,519	22,813	10,292	11,714
2014	9,500	13,330	22,150	10,167	11,588
Annual growth (2003–2014)	2.6	2.4	2.0	3.4	1.8
Growth 2003–2014	32.6	29.6	24.9	44.9	21.3

Source: Mexican Statistics Bureau (INEGI) System of National Figures of Mexico. Figures on Goods and Services, Inputs, Labor Force, 2014.

task of multiple small enterprises, although their contribution to final value added is only 8.9 per cent.

Annex 2, which summarises the relevance of the six segments in the value chain, clearly shows the spillover effects of FDI from assembling to upstream manufacturing activities. It further shows that large-scale companies in assembly create employment effects in micro-, small- and medium-sized companies, which overall provide 48 per cent of all employment in the automotive industry.



One key factor in the industry's success has been the unions, which have pushed for training programmes for workers. Skilled labour has helped workers' wages to move ahead of those in other industries (Table 2).

6 Localising R&D

As part of the development of the automotive industry, assembly and component factories have established local engineering, research and design centres, including: (i) Nissan's Automotive Design Prototype Modeling Centers, located in Mexicali, Manzanillo and Colima, assisting global design operations; (ii) the Ford Motor Company's Center for Engineering and Virtual Design, located in Santa Fe, Mexico City; (iii) Chrysler's Center of Engineering and Design located in Mexico City's metropolitan area; (iv) Volkswagen's centre of design in the state of Puebla; (v) the Regional Engineering Center of General Motors, located in Toluca, State of Mexico; and (vi) the engineering centre for Delphi components located in Ciudad Juarez, Chihuahua. The total number of technical staff working in these R&D centres is in the range of 4,000 to 6,000 employees, with some holding an engineering PhD. Their main activities include the design and development of new products or components and their integration into production lines.⁵ These centres are spread throughout the country and have increased the demand for specialised engineers.

Despite this effort, the technology developed locally has not managed to update automotive production to the new generation of automobiles, in which hybrids and electric cars stand out. No vehicles of those types are assembled in Mexico and, in the short term, no such production is planned.

7 Car Ownership and Urban Transport Problems

Local sales of cars and urban development have not been successfully integrated and the rapid increase in car ownership has led to urban traffic congestion and environmental problems. Before 2000, mass transportation had higher utilisation rates, as indicated by the higher sales of buses than of passenger cars. Thereafter, urban residents with higher incomes

5 Ministry of the Economy, Strategic Programme for the Automotive Industry 2012–2020.



Table 3: Registered vehicles, by category, Mexico (units)

Year	Automobiles	Buses	Trucks and Vans	Motorcycles
1980	3,950,042	60,388	1,470,816	277,084
1985	5,281,842	79,028	2,114,395	250,358
1990	6,555,550	93,275	2,964,736	248,547
1995	7,469,504	120,497	3,598,685	128,960
2000	10,176,179	202,396	4,939,417	293,924
2005	14,300,380	268,817	6,980,738	588,543
2010	21,152,773	313,984	9,015,356	1,154,145
2014	25,543,130	345,883	9,864,064	2,270,458

Source: Mexican Statistics Bureau (INEGI)

turned in high numbers to individual means of transport and purchases of private cars left the use of buses behind (Table 3). Mexico's cities show a lack of linkage between individual and mass transport, creating enormous challenges for the modernisation of urban transport systems for the future.

Hitherto, few efforts have been made in this direction and it may be that policies to promote change will be implemented only when more conflicts arise from congestion and air pollution. Mexico has subsidised gasoline for a long time, making car use cheaper but representing an expense for the Treasury; in terms of income distribution it also represents a regressive tax. Policymakers should seek policies that reduce mileage, create sustainable, competitive cities with high quality of life and provide better transport alternatives. This is not a proposal for policies against production or purchasing of automobiles, which would affect the economy, but rather for policies that provide sustainable, competitive alternatives and lead to more efficient use of automobiles, together with sustainable economic development. The major challenge for industrial policy, as well as urban transport planning will be the transition from technologies based on burning fossil fuels to the use of new forms of clean energy. Currently, there are only 222 electric and hybrid automobiles in use in Mexico, while in the United States there are more than 275,000. It is urgent that economic and transport policy starts to focus on the development of new types of green cars.



8 Final Remarks: Mexico's Learning Process in the Auto Industry

The auto industry's development can be identified as the core process of Mexico's industrialisation. It has not been a smooth road and trial and error was followed by institutional corrections that in many cases were not immediate, with a high cost for the economy as a whole. In this context, four stages can be identified: (i) 1920–1940: attracting foreign investment to build assembling plants; (ii) 1941–1982: import substitution focusing on production for domestic market development; (iii) 1982–1994: transformation into an export-oriented industry; and (iv) 1994–present: export manufacturing under NAFTA membership for markets in Canada and, particularly, the United States. Each stage has been supported by different economic policies. Specifically, for the latest period, the main feature has been integration with the US auto industry, relying on the incentives of low wages and qualified labour.

NAFTA has led to the restructuring of the industry in the region, moving Detroit factories to Mexico, with negative effects on US employment, and shaping a competitive industry that has been able to grow a surplus in foreign exchange earnings of around 60 billion dollars and finance deficits in other sectors, mainly after the oil price decline. For Mexico, the auto industry has helped the national economy to obtain foreign currency amidst turbulence in the world economy. Moreover, with the opening of design and research centres, more activities in the product cycle are being moved to Mexico. Federal policies to increase national education levels and training implemented by foreign investment are helping to reshape assembling in Mexico. New businesses connected to global value chains, mainly in auto parts, have become driving forces in national manufacturing. For now, the main challenges are to increase the level of national content in the industry, increase productivity and move the sector from a low wage industry to one in which wages can grow along with productivity.

One threat to the development of the auto industry in Mexico could come from voices in the United States calling for the return of jobs and factories. Although this likelihood seems remote, Mexico's large surplus and job losses in the US auto industry could alter the development of the industry in North America. Some time in the future the industry could find itself at a fork in the road: either advance towards a more integrated scenario with higher wages in Mexico and a lower trade surplus or face a nationalistic campaign in the United States that could derail the current division of labour with the revival of protectionist policies.



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Annexes

Annex 1: Production of vehicles and FDI in the auto industry, Mexico, 1989–2015

Year	Production (units)	Production for Exports (units)	Production for domestic market (units)	Total FDI (million of dollars)	Manufacturing FDI (millions of dollars)	FDI auto industry (millions of dollars)
1989	650,895	195,468	455,427	2,499.70	982.4	–
1990	830,179	278,558	551,621	3,722.50	1,192.90	–
1991	997,642	365,354	632,288	3,565.10	963.6	–
1992	1,095,737	391,050	704,687	3,599.60	1,100.80	–
1993	1,091,232	493,194	598,038	4,900.70	2,320.50	–
1994	1,135,624	575,031	560,593	10,646.90	5,882.30	–
1995	937,812	778,678	159,134	8,374.60	4,375.90	–
1996	1,221,838	970,874	250,964	7,847.90	4,337.40	–
1997	1,365,355	984,430	380,925	12,145.60	6,597.80	–
1998	1,462,707	978,758	483,949	8,373.50	4,759.60	–
1999	1,547,122	1,077,217	469,905	13,940.39	9,127.30	2,519.80
2000	1,933,648	1,432,998	500,650	18,311.97	10,320.00	1,767.30
2001	1,854,063	1,382,496	471,567	30,053.28	6,456.50	2,176.00
2002	1,820,319	1,319,376	500,943	24,039.43	8,458.90	1,327.70
2003	1,585,982	1,170,203	415,779	18,891.90	9,780.10	1,114.90
2004	1,509,134	1,042,236	466,898	25,138.21	13,715.90	3,028.20
2005	1,688,177	1,192,850	495,327	24,861.32	11,998.90	2,104.20
2006	2,068,929	1,556,598	512,331	20,955.86	10,155.10	1,675.10
2007	2,105,789	1,623,963	481,826	32,320.06	12,930.10	1,944.20
2008	2,180,294	1,665,133	515,161	28,793.31	8,846.30	1,591.40
2009	1,564,169	1,226,513	337,656	17,756.28	6,661.50	1,560.60
2010	2,340,221	1,859,515	480,706	26,168.23	13,991.10	2,115.30
2011	2,647,261	2,143,879	503,382	23,328.27	9,793.70	1,897.80
2012	2,884,869	2,355,565	529,304	19,491.66	8,340.20	2,753.60
2013	2,933,465	2,423,084	510,381	44,885.84	29,542.60	3,250.20
2014	3,219,786	2,642,887	576,899	24,154.17	13,583.40	4,094.00
2015	3,399,076	2,758,896	640,180	13,749.68	5,694.5*	1,919.7*

Notes: * Data until June 2015.

Source: AMIA, Mexican Statistics Bureau (INEGI) and Ministry of the Economy, FDI statistics.



Annex 2 Automotive product cycle in Mexico: enterprises, employment and value added, 2014

	Product Cycle		Micro, small and medium sized enterprises		
Phase	Units	% of chain	Units	% phase	% of chain
	Enterprises (numbers and percentage)				
1	180	0.3%	154	85.6%	0.3%
2	1,667	3.1%	1,559	93.5%	2.9%
3	1,409	2.6%	1,146	81.3%	2.2%
4	4,641	8.6%	4,494	96.8%	8.4%
5	2,841	5.3%	2,727	95.9%	5.12%
6	43,170	80.1%	43,143	99.9%	81.06%
Total	53,908	100%	53,223	98.7%	100%
	Employment (persons and percentage)				
1	38,640	3.8%	6,425	16.6%	1.3%
2	99,625	9.8%	41,320	41.5%	8.4%
3	257,360	25.3%	35,203	13.7%	7.2%
4	158,616	15.6%	68,843	43.4%	14.0%
5	192,986	18.9%	76,324	39.5%	15.57%
6	270,953	26.6%	261,933	96.7%	53.45%
Total	1,018,180	100%	490,048	48.1%	100%
	Gross Added Value (thousand dollars and percentage)				
1	4,368,420	11.9%	228,439	5.2%	2.9%
2	4,363,014	11.9%	1,106,476	25.4%	14.1%
3	7,344,730	20.1%	808,152	11.0%	10.3%
4	3,797,278	10.4%	1,382,348	36.4%	17.6%
5	13,490,461	36.8%	1,080,548	8.0%	13.78%
6	3,266,615	8.9%	3,233,948	99.0%	41.25%
Total	36,630,519	100%	7,839,911	21.4%	100%

Source: Authors' own estimates using data from Mexican Statistics Bureau (INEGI), Economic Census 2014.



Development and Structure of the Automotive Industry in China

Chen Yi, He Ying and Guang Xueling

1 Introduction

The worldwide automotive industry has been enjoying a period of relatively strong growth and profitability in recent years, although a number of shifts can be observed in global automotive manufacturing and markets. Emerging auto markets already buy more cars than established markets. Auto industry executives and experts tend still to be optimistic about the US market, but the outlook in Europe is much weaker as the region is emerging only fitfully from a six-year sales slump. Sales have plunged in Russia and South America, too, and even China — the world's largest vehicle market — has slowed, although investments by most original equipment manufacturers, which are betting big on future demand, continue to rise.

The automotive industry is dominated by very large transnational manufacturers with complex global production networks and is an important driver of the international division of labour. Virtually all vehicle makers around the world outsource the production of vehicle parts, including brakes, tires, seats and engines. Shifts in local and regional demand but also changes in production factors and the environment influence these complex manufacturing arrangements, working relations and the employment situation.

In this chapter we analyse the historical development and current trends of the automobile industry in China and see how industrial policy is used to influence company choices, economic opportunities, innovation and quality job creation.



2 History of the Automotive Industry

The development of the automotive industry in China has a history of 60 years, which can be divided into two stages: (i) 30 years of development under the planned economy, which started with the introduction of technology from the central and eastern European countries, including the Soviet Union; and (ii) 30 years of development under reform and the opening up of the economy.

The automotive industry in China began in the first Five-Year Plan (1953–1957) as part of the push for large-scale industrialisation. In July 1953, the First Automotive Works (FAW) was established in Changchun and went into operation in July 1956. The first product was the CA10 loading truck, which became the symbol of the automotive industry in China over the next 30 years.

The technicians in China were creative and never satisfied with merely imitating. Under parameters set by central planning offices, however, the development of the industry was decided by the central government. State-owned enterprises were bound into a fiscal system with unified revenue and expenditure, which constraint innovation at plant level.

The so-called »Great Leap Forward« in 1958 weakened the planned economy. However, loss of central control created opportunities for grass-roots innovation, which led to the first expansion of the automotive industry. The country invested USD 30 million in FAW and established a sedan workshop, which became the predecessor of the production base of the Hongqi car.

After the Cultural Revolution, the Second Automotive Works (Dongfeng Automobile Co., Ltd.) was established as a second leg of the Chinese automotive industry, producing trucks for national defence and local industries. A fully-equipped technical centre was constructed that enabled the Dongfeng company to produce 100,000 5 tonne trucks annually. The research and production of Dongfeng products contributed to the development of independent mechanical and automotive technology expertise, nationwide.

In the first 30 years of its existence, the automotive industry in China failed to establish large-scale production. While mass-scale production in automated assembly lines became features of production plants in the United States and expanded from there into Europe and Japan after the Second World War, the technologies used in China originated from the Soviet Union, which lagged behind. The lack of a developed market mech-



Table 1: Joint ventures in the automotive industry in China

Joint ventures	Time of establishment	Country of origin	Brand names	Production bases
Beijing Jeep Automobile Co. Ltd.	Jan. 1984	USA	Jeep	Beijing
Shanghai Volkswagen Automobile Co. Ltd.	Mar. 1985	Germany	VW	Shanghai
Guangzhou Peugeot Automobile Co. Ltd.	Mar. 1985	France	Peugeot	Guangzhou
FAW-Volkswagen Automobile Co. Ltd.	Feb. 1991	Germany	VW	Changchun
Hainan Mazda Automobile Co. Ltd.	Aug. 1991	Japan	Mazda	Haikou
Dongfeng Citroen Automobile Co. Ltd.	May, 1992	France	Citroen	Wuhan
Zhengzhou Nissan Automobile Co. Ltd.	Mar. 1993	Japan	Nissan	Zhengzhou
Sanjiang Renault Automobile Co. Ltd.	Dec. 1993	France	Renault	Xiaogan
Changan Suzuki Automobile Co. Ltd.	Jun. 1993	Japan	Suzuki	Chongqing
Changhe Suzuki Automobile Co. Ltd.	Jun. 1995	Japan	Suzuki	Jingdezhen
Shanghai General Motor Automobile Co. Ltd.	Jun. 1997	USA	GM	Shanghai
Guangzhou Honda Automobile Co. Ltd.	Jul. 1998	Japan	Honda	Guangzhou
Nanjing FIAT Automobile Co. Ltd.	Apr. 1999	Italy	FIAT	Nanjing
Tianjin Toyota Automobile Co. Ltd.	Jun. 2000	Japan	Toyota	Tianjin
Changan Ford Automobile Co. Ltd.	Apr. 2001	USA	Ford	Chongqing
Huachen BMW Automobile Co. Ltd.	May. 2003	Germany	BMW	Shenyang
Dongfeng Automobile Co. Ltd.	Jun. 2003	Japan	Nissan	Guangzhou
Dongfeng Honda Automobile Co. Ltd.	Jul. 2003	Japan	Honda	Wuhan
Guangqi Toyota Automobile Co. Ltd.	Sep. 2004	Japan	Toyota	Guangzhou
Beijing Benz Automobiles Co. Ltd.	Aug. 2005	Germany	Benz	Beijing
Changan Ford Mazda Automobile Co. Ltd.	Mar. 2006	Japan	Mazda	Nanjing

Source: <http://shuoqe.autohome.com.cn/article/8683.html>; <http://wenku.baidu.com/link?url=Qp-Sqh13c5zudPlsAyABctOPD841mBHyrRlvP74QgTBZCeYjKTdYIM33m4JCItzRxxFEYfu4myPhce9TB-wTf1345uKE4yExsSadCr26pTrP7>



anism and the predominance of the central-administrative system in plant decision-making restrained the motivation for introducing large-scale automated production systems. Despite these constraints and disadvantages, vehicle manufacturing in China was able to develop independently, its key strength becoming its autonomous technical base. Due to these efforts to develop technology on its own, truck manufacturing became the main field in which the automotive industry developed independently of joint ventures with foreign companies.

The reform and opening-up policy began in the late 1970s, leading to a rapid growth in private demand for passenger cars in the Chinese market. Car imports increased exponentially in the early 1980s, greatly exceeding domestic supplies. To react to these imbalances, central government announced a new policy and designated the automotive industry a pillar industry in 1986, based on the principles of 'high starting point, mass production and specialisation'. The ambition to develop the automotive industry as well as to close the technological gap to foreign countries prompted the Chinese government to open the automotive industry up to foreign investors and allow foreign car manufacturers to set up joint ventures.

New policies were introduced in 1994 (the Chinese Automobile Industry Policy) and 2004 (the Chinese Automobile Industry Development Policy). To avoid the monopolisation of Chinese markets by foreign companies and protect domestic brands, two investment rules were announced: (i) all enterprises selling automobiles in the Chinese market must establish joint ventures with domestic automobile enterprises and the share of the foreign brands in a joint venture cannot exceed 50 per cent; (ii) foreign brands can establish joint ventures with two domestic automobile enterprises at most.

The new policies were trying to connect different principles: to open up the local economy but also to maintain independent development; to allow companies more self-determination but to ensure macro-control over the economy; and to combine development in both domestic and foreign markets. By perfecting access rules and related taxation policies, the development of vehicle manufacturing in the country was to be encouraged and domestic companies were to be promoted to create a fair competitive environment for the progress of China's industry.

Beijing Jeep Automobile Co. Ltd. (BAW) became the first joint venture in 1984, bringing it together with AMC (later acquired by DCAG). The time limit for the joint venture was set at 20 years, with BAW owning 57.6 per



cent and AMC 42.4 per cent; the aggregate investment was USD 411.21 million. In September 2000, DCAG decided to extend the contracts for 30 years and injected new capital of USD 218 million.

Shanghai Volkswagen Automobile Co. Ltd. (SVW) became the second joint venture, linking the German car manufacturer to Shanghai Automotive Industry Corporation (SAIC). In 1983, VW had established a plant in Shanghai which assembled Santana cars from imported completely knocked down parts (CKD). When VW moved into a joint venture in 1985 the localisation of components became a political issue. The production of Santanas reached 10,000 after three years, but the localisation rate was a mere 2.7 per cent. Under great pressure from the municipal government of Shanghai, SVW had to agree to localise the Santana at 60 per cent within three years.

The opening of the sector to joint ventures led to fundamental changes in the automotive industry in Shanghai. When SVW was established, SAIC initially kept its own products and production systems. But then SAIC and Shanghai's municipal government made the decision that Shanghai Automotive Company should merge with SVW, which meant giving up the independent production of the original »Shanghai« sedans. All technical departments of the enterprises were now to serve the manufacturing of the Santana. For example, the production of »Jiaotong« 4 tonne trucks, »Datong« 15 tonne self-discharging trucks and 35 tonne self-discharging trucks for mining were all halted because Shanghai Heavy Truck Works and Shanghai Automobile Chassis Works (SHAC) were now to produce front and rear axles, suspensions and absorbers for the Santana instead. The localisation of imported components for the Santana was achieved at the cost of giving up on self-owned brands and development platforms.

Joint ventures were originally entered into to trade access to the domestic market for the transfer of technology. It was believed that after studying production in foreign companies, independent technology innovation would receive a push. However, it turned out that the strategy did not work effectively. Domestic enterprises were thrown into a passive role in joint ventures and became the production workshops of international enterprises, resulting in a technological hollowing-out. Bringing advanced technology into the country was just a bargaining chip for foreign manufacturers to enter the market. Therefore, China had to focus on its own backbone enterprises, turning trading for technology from a passive to an active process.



In 2004, the government responded positively to the need to promote the independent research and development of autonomous vehicle technologies. When Premier Wen inspected Chery Corporation in 2005, he spoke highly of its innovative spirit. Policies and regulations were made to encourage technical innovation and independent development in automotive industry received special emphasis in the Eleventh Five-year Plan (2006–2010). Private enterprises such as Chery and Geely insisted on independent property rights and economy cars and their sales increased dramatically from 10–20,000 in 2001 to 100–200,000 in 2004. However, the market shares of national enterprises have gradually fallen in recent years and the achievements of a few outstanding enterprises cannot conceal the fact that Chinese automotive enterprises generally lag behind advanced manufacturers worldwide.

From June 2014, the automobile industry was subject to close antitrust scrutiny. A large-scale antitrust investigation exposed huge profits for imported automobiles and imposed severe administrative penalties.¹ By introducing antitrust laws, the government showed its determination to promote the healthy development of the automobile market. The investigation effectively contributed to a reduction in the prices of imported cars and components.

In addition, it promoted the status of dealers. Previously, dealers were in a weak position when it came to bargaining with manufacturers, as shown by the large-scale quarrels between dealers and manufacturers that broke out at the end of 2014. With the new antitrust policies, dealers may gain more bargaining power. A reform of the franchisee system would also help in breaking the dependence of dealers. Here, brand monopolisation needs to be ended. For example, free traders should be introduced to prevent international enterprises from monopolising import sources. Channel monopolisation of components should also be prevented. Furthermore, genuine and interchangeable parts should both be put into circulation.

1 On 13 August 2014, four dealers of BMW cars were punished by the Price Bureau in Hubei province in accordance with the Antitrust law. On 20 August, NDRC fined eight component suppliers, including Sumitomo, 831.96 million yuan and four bearings manufacturers, including NSK, 403.44 million yuan for price-fixing. On 10 September, the department for Audi in FAW-VW and eight Audi dealers in Hubei province were fined 248.58 million yuan and 29.96 million yuan, respectively. On 12 September, Chrysler Group and its three dealers were fined by the Price Bureau in Shanghai 31.68 million yuan and 2.14 million yuan, respectively.

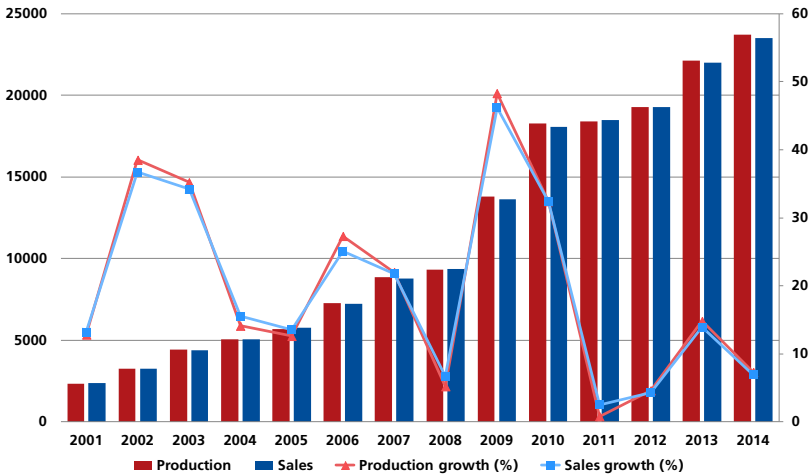
Faced with the antitrust investigation, car manufacturers such as Daimler, Jaguar and Land Rover reduced their prices immediately, as did Nissan, Honda and Toyota.



3 Current Situation

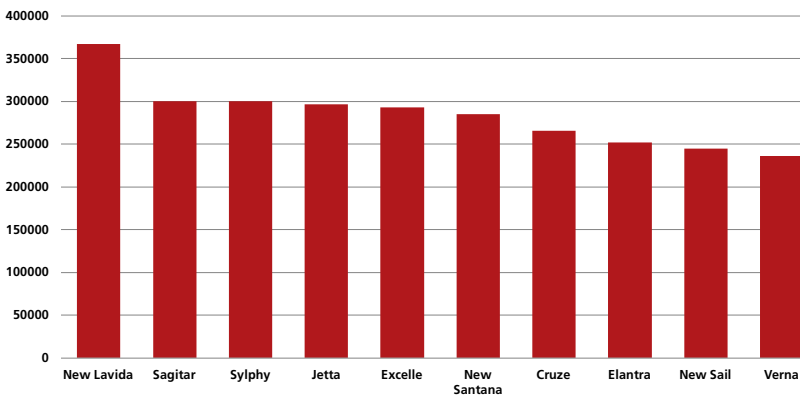
Figure 1 presents production and sales from 2001 to 2014. In 2014, the production and sales of vehicles reached 23.72 million and 23.49 million, respectively, with a growth rate of 7.3 per cent.

Figure 1: Production and sales of vehicles in China, 2001–2014 ('000)



Source: China Automotive Industry Yearbook (2014).

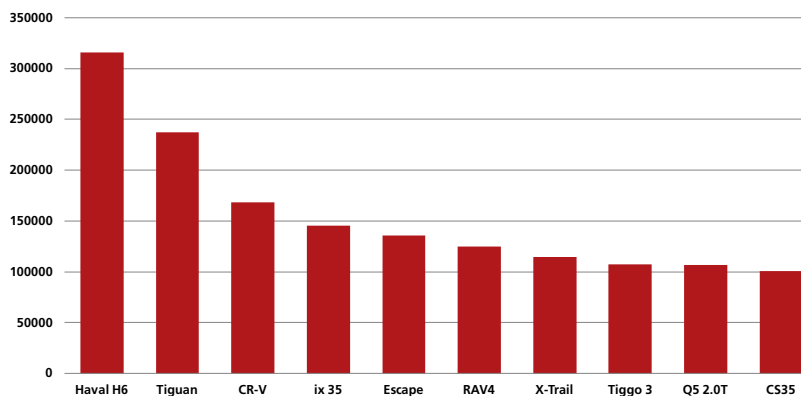
Figure 2: Bestselling sedans in China, 2014



Source: Guangwuzhongsheng Automotive Service Co.Ltd.; <http://www.gwqm.com>; China Automotive Industry Yearbook 2014.



Figure 3: Best selling SUVs in China, 2014



Source: Guangwuzhongsheng Automotive Service Co. Ltd.; China Automotive Industry Yearbook 2014.

Imports of vehicles have kept growing steadily, while exports lag behind. In 2014, import volume stood at 1.43 million units, with three countries (Japan: 0.29 million; USA: 0.29 million; and Germany: 0.29 million) accounting for the bulk (61.14 per cent) of it.

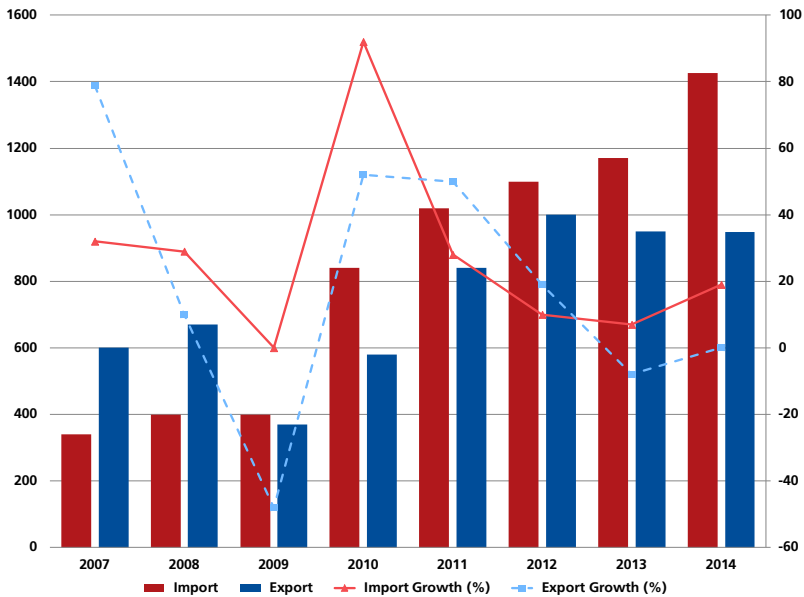
Exports ended their sustained growth (with the exception of the crisis years 2009 and 2010) in 2012, when volume reached 0.95 million units. Western Asia has replaced North Africa as the biggest market for vehicle exports from China. The top 10 importing countries were Iran (114,000), Algeria (83,000), Russia (62,000), Egypt, Columbia, Chile, Vietnam, Venezuela and Saudi Arabia. Exports have fallen dramatically to Algeria, Iran, Iraq and other countries, however, due to unrest and local policy in these locations. Thanks to the strategy of the Maritime Silk Route, exports to South East Asia – such as Vietnam – performed better.

Figures 5 and 6 show the market shares of international enterprises and national producers between 2009 and 2014. National producers in 2013 sold 7.57 million passenger cars. The market share of Chinese vehicle manufacturers decreased from 45 per cent in 2010 to 38.4 per cent in 2014. Of the five foreign groups of auto manufacturers, German and Japanese companies are in the lead, although the two have exchanged market positions in recent years, with German brands taking over top position. US, Korean and French suppliers follow at some distance.

On the Chinese side, there are four enterprises (SAIC, Dongfeng, FAW and Changan) that today sell more than 2 million cars each. SAIC with 5.58 million cars is ahead, followed by Dongfeng with 3.80 million cars.



Figure 4: Imports and exports of vehicles, China, 2007–2014 (in '000)



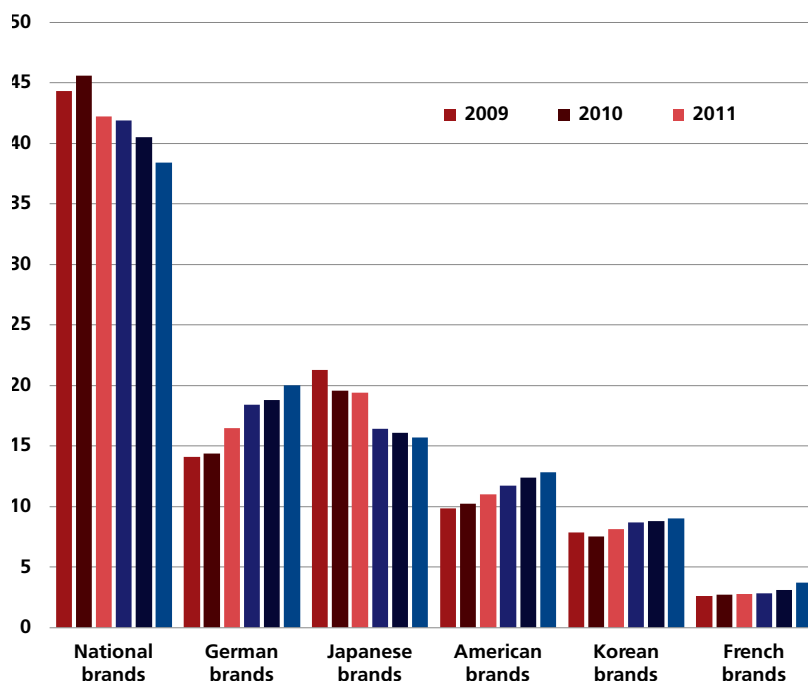
Source: China Automotive Industry Yearbook 2014.

The top four benefited from the government policy announced in 2009, namely the Adjustment and Plan for Revitalisation of the Automotive Industry, which outlined a merger and acquisition strategy to form two or three mega groups producing and selling 2 million cars a year and four or five mega groups producing and selling 1 million cars a year.²

The production of vehicle components is an important pillar in the development of the automotive industry. On one hand, the component market has expanded substantially in volume in the past few years; on the other hand, the parts sector still suffers from a lack of development of new technology; leading vehicle producers still control the production of core components and use their policies on component supplies to maintain market power.

2 »Significant progress should be made in mergers and restructuring. Through mergers and restructuring, two or three large-scale automobile enterprise groups with production and sales of more than 2 million and four or five automobile enterprise groups with production and sales of more than 1 million should be established. The number of automobile enterprise groups with production and sales accounting for 90 per cent of market share should be reduced from the current 14 to less than 10«. Xinhuanet.com (2009) China: Plan on the Revitalization and Restructuring of the Automobile Industry: <http://en.iapechina.com/News/Policies/2009-05-11/27.html> (accessed 30.3.2016)

Figure 5: Market shares of vehicle manufacturers in China according to nationality, 2009–2014 (%)



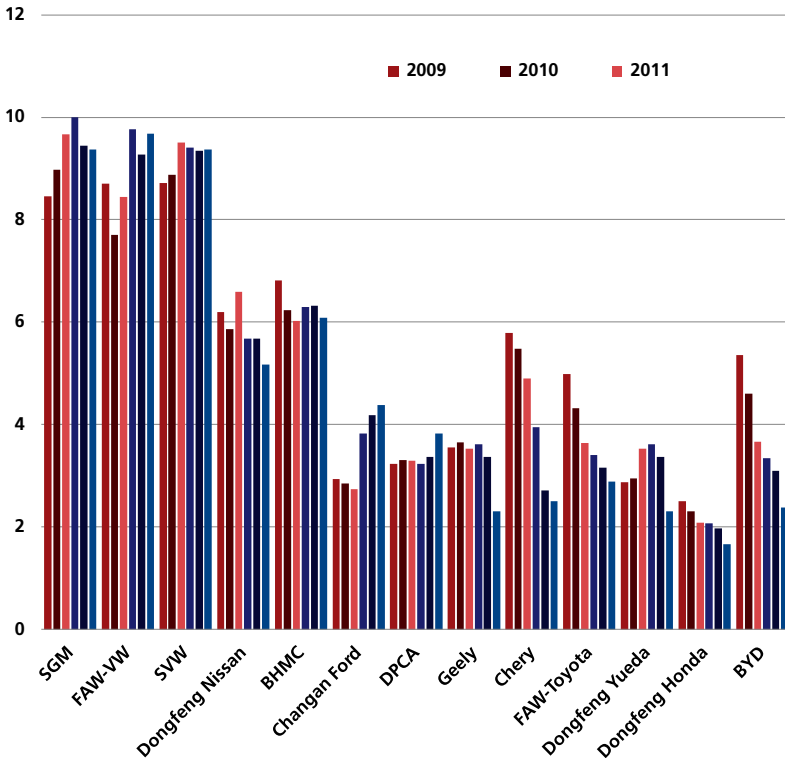
Source: Gasgoo Automotive Database (<http://autonews.gasgoo.com>)

In 2014, imports of components reached USD 37.1 billion, up by 13.5 per cent from 2013. The top three imported components were transmission systems (37 per cent), accessories (22 per cent) and engine parts (13 per cent). Imports came overwhelmingly from Germany (USD 13.3 billion), Japan (USD 9.6 billion) and Korea (USD 5.2 billion). Components exports in 2014 stood at USD 61.2 billion, up by 8.3 per cent from 2013. The top three components on the export list were drive systems (37 per cent), auto electronic and electrical equipment (18 per cent) and bodies and accessories (13 per cent). The top three countries importing from China were the United States (USD 18.4 billion), Japan (USD 7.1 billion) and Korea (USD 3.3 billion). China has reached a large trade surplus in drive systems (USD 20.8 billion), while it maintains a large trade deficit in transmission systems (USD 9.75 billion).

In general, with the rapid development of the automobile and maintenance markets, the component industry has been transformed, upgraded



Figure 6: Market shares of foreign and domestic vehicle manufacturers in China, 2009–2014 (%)

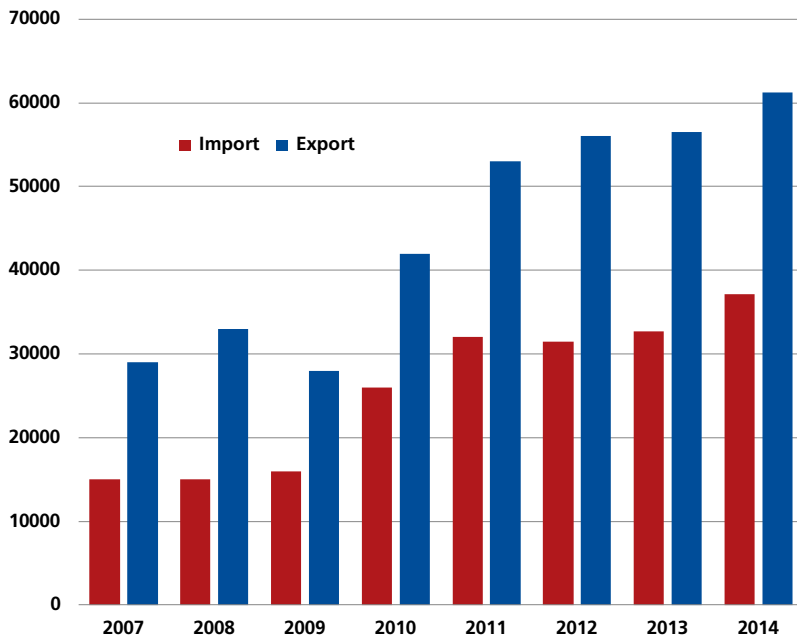


Source: Gasgoo Automotive Database (<http://autonews.gasgoo.com>).

and specialised. Meanwhile, innovation challenges have become a concern. Two long-standing problems must be solved. The first is the lack of research, which results in difficulties in technological upgrading. Most domestic manufacturing enterprises lack core technologies, while the strength of international enterprises results from huge R&D input and consistent innovations in technology. According to statistics, the R&D input of a single Brilliance car is 60 yuan, while the R&D input of each BMW car is 2164 yuan. The second problem is the strategic relationship between vehicle assemblers and component suppliers. In future, component manufacturers must not only supply components, but also cooperate closely with vehicle assemblers, supporting each other for a prosperous future.



Figure 7: Imports and exports of vehicle components, China, 2007–2014 (USD million)



Source: China Automotive Industry Yearbook, 2014.

4 Differences in the Policies and Strategies of International Enterprises

The strategies of international enterprises are influenced mainly by two aspects. The first is the integration of the relatively independent China Strategy and a Global Strategy. Previously, the market in China was closed, which led to international enterprises developing independent strategies for the Chinese market. In recent years, however, China has emerged as the largest market, forcing foreign producers to integrate their China Strategy into a Global Strategy. The second aspect is the issue of cooperation and control. During the first stage of development in China, domestic enterprises controlled the market. Meanwhile, foreign capital has been granted access but is still strictly supervised in order to protect national enterprises. International enterprises had to enter the Chinese market on the production and sales platforms provided by national enterprises.



International enterprises are preparing the ground for long-term combat with national companies for market share. Part of this battle is taking place around the build-up of infrastructure, such as distribution channels and service centres. Ford has already set up 100 service centres in China. Ford's vice president says that the company will engage wholeheartedly in competition over the long haul. He believes that the Chinese car market is growing at an unprecedented speed and may reach 50 million units per year soon. Ford's new product development strategy adds urgency to getting its brand process in place. Ford has targeted reducing its product cycle time from 36 to 24 months, taking a big bite out of the time it needs to place a new model in customers' minds. The same plan calls for reducing the development of product platforms from 24 to 16 months, but increasing derivatives for each from five to eight. That involves a lot of complex shuffling, with potentially a major impact on the brand side if Ford fails to develop a system to sort it all out.

The aim of granting access for foreign capital to the Chinese market was the localisation of technology. However, a high localisation rate does not mean the mastery of technology or the creation of self-owned brands by domestic companies. In the new round of technological cooperation, China now emphasises the establishment of R&D centres. For instance, Toyota established two R&D centres in Shanghai and Guangzhou in 2004, introducing technologies related to environmental protection, minicabs and intelligent gear shift systems. The R&D centres established in China are a branch of Toyota's research and development system. However, according to the R&D personnel at Dongfeng Automobile Co., Ltd., technological cooperation is limited to only partial transformation of development concepts for car bodies – for example, moving right-hand steering wheels to the left. Plans and schedules for developing core technologies are not shared with Chinese groups and they have no right to interfere either.

Luxury carmakers, faced with slowing sales in rich countries such as Japan and the United States, are turning to relatively poor China as a new and growing market. A small but growing ultra-wealthy class is developing an appetite for speed and luxury. China's luxury sedan market has seen fierce competition since 2005 as more auto manufacturers, such as Daimler, are vying for a share in the emerging and lucrative market. Daimler's versatility enables it not only to produce a wide range of vehicles, ranging from cars to trucks but it also employs superior engineering technology in relation to other automobile manufacturers and has the use of a worldwide after-sales service. The diversity of the product programme permits consumers to make a wide variety of choices and is a key factor in consumers' decisions to buy a



Mercedes Benz product, making them a household name. Meanwhile, product differentiation means that established firms have brand identification and customer loyalty, which stem from past advertising, customer service, product differences or simply being first into the industry. The differentiation of products has enabled Mercedes Benz to offer its customers basically the same product at various prices under various models and classes.

The localisation of the human resources of international enterprises is a vital part in the integration of global and local company strategies. The localisation of management (especially the localisation of senior management) is a crucial measure. The strategies differ in terms of the following four stages of investment.

The example of Toyota illustrates the relationship between automakers and suppliers. The suppliers are divided into three kinds: suppliers of core components, suppliers of feature components and suppliers of commodity components. Toyota established two separate organisations for the core and feature suppliers, holding a stake of 30 per cent in the first and of 10 per cent in the second body. Toyota has no asset-related relationship with commodity component suppliers. In using these organisations, Toyota can obtain the cost information of core component suppliers, discuss investment plans for the future and cooperate to develop new products. Suppliers are required to build their production facilities around Toyota's assembly factories to promote Just-in Time Delivery. In return for suppliers' loyalty, Toyota provides the members of the organisation with a lot of support in terms of management and production technology. In doing so, Toyota promotes its production system among the suppliers. This interconnectivity greatly improves the productivity of the supplier, which in turn promotes the competitiveness of Toyota products and ultimately leads Toyota and its suppliers to obtain a long-term competitive advantage. Toyota also encourages its suppliers to supply other manufacturers, only excluding Honda and Nissan. Toyota's production capacity is bound to be moderately above market demand. The company can use this surplus production capacity to deter other companies from attempting to challenge it. This also requires that the suppliers have a surplus production capacity.

5 Challenges and Potentials

Innovative technologies have exploded in recent years, with new techniques, industries, formats and models coming into being. The third industrial revolution is drawing near and the new trends register the scattershot



Table 2: Patterns and HR strategies of international enterprises

Stages	Main objective	Patterns	HR strategies
Preparation	Market research, evaluation of demand, political risks and financial feasibility	Middlemen, agency and offices for a few staff	Training, support and performance management for middlemen and expatriate managers
Entry	Establishment of pioneer operation system, transfer of capital and management technology, ensuring normal business	Single market, establishment of offices and joint venture	Expatriate managers, cross-cultural environment transfer of techniques and management technology
Expansion	Increase in sales, development and distribution of new products	Expansion to new markets in other regions, adding local partners	Cooperation between local and expatriate managers, team building, requirements for local training
Experience	Customer loyalty, competitive forces, harmony and prudence	Expansion to other target groups, establishment of wholly-owned company, mergers and acquisitions	Localisation of human resources, encouragement and creativity, long-term development of human resources

approach of new technologies, interfusion and interaction and the growth of new industries that are likely to have a revolutionary effect on manufacturing, consumption and management in all industries.

The third industrial revolution affects mainly R&D and manufacturing for the time being. The changes in the economy, environment and society will expand the influence of the third industrial revolution. This influence will include production and marketing systems, brand and value chains and so on, and will change the automotive industry in three main respects. First, there will be changes in the automotive industry itself. The relationships between vehicle assembly and component suppliers, large and small enterprises will change dramatically. The strength of large enterprises will be enhanced, with the progressive centralisation of global automotive industries. Second, there will be interfusion between the automotive industry and other industries. In the process of refactoring business models and value chains, leadership in the development of the automotive industry will not be retained by the traditional automotive enterprises, but by those applying advanced technologies. Meanwhile, the boundaries between the automotive industry and other industries will be blurred. Third, there will be a significant change in the industry's position and role in the development of human society. The automotive industry will bring about revolutionary and subversive change, but the direction and substance of this remain to be seen.



The automotive industry produces a huge amount of data. The sector will become the second largest data source by 2016. A plug-in hybrid vehicle can produce 25 GB of data in an hour. Big data will not only affect the automotive industry, but also whole industry chains. Big data are required before the design stage and the focus and function of designs must be based on the analysis of large amounts of data. Data processing is also becoming important in service marketing. For example, car-share concepts require the processing of data on the supply of cars with specific requirements and requests. Data with high simulation (automotive, drivers, passengers and so on) have to be collected and saved in real time, and be processed centrally. All requests have to be waitlisted for responses in the queue in the intelligence centre, and weights assigned to the requests in order to match and feed back appropriately. Big data offer a great opportunity for the automotive industry to grasp and expand on customers' requirements.

Mobile internet has already revolutionised people's lifestyles and living habits, many regard its use as a basic need. The development of an Internet of Vehicles (IOV)^{3,4} overturns the concept that mobile devices do not move. Statistics from eCDC demonstrate that most of the 652 million people who use the internet in China do so at home (77.8 per cent) or at their workplace (38.2 per cent). Only 34.6 per cent choose to use mobile internet in vehicles. Obviously, the on-board environment in mobile environments is not fully developed. With the popularisation of vehicles and the problem of traffic congestion in metropolises, consumers will spend more time in cars, and so the differences in the kind of service required in the on-board environment need to be considered.

IOV already played an important role in new strategic industries in China's 12th Five-Year Plan (2011–2015), promoting the transformation and upgrading of automotive manufacture and transport services.⁵ IOV

3 IOV connects new and current vehicles with two-way communicating equipment.

4 The foundations of IOV go back to 30 April 2004, when the State Council issued the Implementation Rules of the Law on Road Traffic Safety of the PRC. According to the new regulation, passenger vehicles used for highway transportation, heavy trucks and semitrailer tractors must use the vehicle travelling data recorders in compliance with national standards. Vehicle travelling data recorders are designed for postmortem analysis and are not able to monitor the running status of vehicles. Therefore, the provinces have promoted GPS vehicle travelling data recorders suitable for local conditions.

5 In the two sessions in March 2010, the Internet of Things (IOT) was first mentioned in Premier Wen's report on government work. As a new large-scale global strategic industry, IOT has developed from the concept stage to the implementation stage. IOV is becoming the preferred example of the implementation of IOT and is gaining more attention and support from related industries worldwide.



is also an important way to assure sustained growth of the national economy, enhance safety management and develop green energy-saving. IOV is an effective industry for promoting the close integration of informatisation and industrialisation. The government should promote the innovation and operation of the IOV market through legislation, policies and regulation.

Approved by Premier Li Keqiang and issued on 8 May 2015, *Made in China 2025* represents a plan for »Industry 4.0« in China. There has been heated discussion of its influence on the automobile industry, often with regard to energy saving and intellectualisation. In fact, in terms of energy saving, new energy and intelligent networks, automobile safety, efficiency and even the harmony of social transportation can be improved, which is a challenging mission as expressed in *Made in China 2025*. The development of the automobile industry⁶ is bound up with energy, environment, safety and transportation. Low carbonisation, informatisation and intellectualisation are three critical solutions. According to the planning of vehicle technology road mapping⁷ in *Made in China 2025* and the discussion of

In two sessions held in March 2012, IOT was denoted the new strategic industry again. Before then, the Ministry of Industry and Information Technology issued the first plan for IOT, the Twelfth Five-year Development Programme for the Internet of Things. It was proposed explicitly that IOT would first be deployed in smart grids, intelligent transportation, intelligent logistics and financial and business services. IOV was considered an important application in the automotive industry and listed as a major project during the twelfth five-year plan. Furthermore, the requirement for new energy vehicles to have the ability to be monitored remotely makes IOV an integrated system crossing two new strategic industries.

- 6 Mature technologies are already being implemented in developed countries such as Germany, Japan and the United States for energy conservation. But energy saving technologies developed by national enterprises are constrained by market demand, policies and regulations. From a technical point of view, GDI+DCT together with advanced electronic and electrical equipment, low-friction, lightweight and clean diesel technology are now considered mainstream. Expansion of HEV and EV will have to satisfy tougher laws and standards in future. Combined with the independent energy strategy in China and successful experiences in foreign countries, a sustainable development path of energy saving technology with Chinese characteristics must be found.
- 7 Demand for lighter automobiles in *Made in China 2025* focuses on promoting the lightening of complete vehicle, chassis, power train and core components with aluminium alloy, magnesium alloy, high-strength steel, plastic and non-metal matrix composites. High performance structural materials, functional polymer materials and advanced matrix composites are also considered a development priority. A significant technical gap exists between domestic and advanced foreign vehicles. For instance, high-strength steel is applied to 65 per cent of cars in advanced industrialised countries on average, but at present to only 30 per cent in China; there are on average 127 kilos of aluminium alloy in cars in advanced industrialised countries, but only 80 kilos in China. Database and technical specification of automobile lightening should be improved as soon as possible. Evaluation systems, lightweight factors, evaluations based on nominal density, comprehensive assessment codes and power/weight ratios need to be established, as well as analytical system of lightening costs.



its implementation, greenhouse gas emissions and casualties in traffic accidents can be greatly reduced through new energy, V2V and automatic driving technology, which may provide considerable economic benefits worldwide.

The development of advanced vehicles and government management depends on mastering the core technology. So far, core technologies in passenger car platforms, engine systems and traction battery systems have not been mastered in major enterprises in China. Therefore, a breakthrough in core components and generic technology is the key factor to completing the mission laid down in *Made in China 2025*.



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An »Automotive Revolution« in Neoliberal India

Evolution, Industrial Structure, Trends and Prospects

Babu P. Remesh¹

1 Growth of Automotive Industry: A Historical Account

Since the mid-1980s, especially during the past two decades, the automotive industry in India has been on a track of steady growth. From being an outlier on the global automobile map, India has become a lead player. Currently, India produces close to 4 million passenger cars annually and stands as the seventh largest automobile producer in the world. The automobile sector accounts for 22 per cent of manufacturing and contributes nearly 7 per cent of GDP.

The history of automobile production in India begins in colonial times, in the late 1920s. In 1928, General Motors started assembling of so-called »complete knock-down«² (CKD) trucks and cars in small quantities. Its US rival Ford Motors entered the scene in 1930–1931 and began operations in Madras, Bombay and Calcutta (Kathuria 1996; Marukawa 2011; Krishnaveni and Vidya 2015). The next spurt occurred in the 1940s when Hindustan Motors and Premier Automobiles entered the market³ under licence agreements with Morris and Chrysler, respectively. From 1954 onwards, TELCO (now Tata Motors) started producing trucks in collaboration with Daimler-Benz.

1 The author gratefully acknowledges the support, encouragement and constructive comments of Pravin Sinha and Rudolf Traub-Merz. The usual disclaimers apply.

2 This means that the vehicle is assembled locally using all the major parts, components, and technology imported from the country of its origin.

3 Hindustan Motors was set up in 1942 and its first vehicle was made in 1950. Premier Auto Ltd was established in 1944 and its production started in 1947.



In the post-independence era, until the 1980s, the production of automobiles (especially passenger cars) came under severe government restrictions and was burdened with heavy taxes. Government control started in 1949 with an import ban on completely built-up⁴ (CBU) vehicles; in the early 1950s domestic manufacturers were forced to increase local content when assembling imported vehicles (D'Costa 2009). The Phased Manufacturing Programme (PMP) of the 1970s and a revamped version in the 1980s intensified the pressure on assembly firms to indigenize their production base,⁵ which eventually forced many to quit the scene. At the end of the 1980s, only five assemblers were left in India.

During this regulatory period, known as the »License Raj«, any Indian firm that wanted to import technology or products or to enter into collaboration with a foreign partner required licenses and had to undergo scrutiny by the authorities with a view to obtaining government approval. With strict quantitative restrictions and heavy tariff structures, the market was strictly protected. The auto industry was characterised as a low-volume, high-cost sector with a few prominent private players. In the passenger car segment, there were only two key firms, Hindustan Motors and Premier Automobiles, both using outdated designs and applying inefficient business practices and fuel-inefficient technology.

1.1 Suzuki Enters the Indian Market

The advent of Maruti Udyog Limited (MUL) in 1983 as a co-funded project between the government of India and Suzuki Motor Company of Japan, is a major landmark in the history of the automotive industry in India (Uchikawa 2011). Suzuki was the first MNC to enter the Indian market in collaboration with the government, which provided it with a supportive environment for expansion.⁶ Within a short time span, Maruti-Suzuki's 800 model gained an image as a »people's car« and, ever since, MUL (later renamed Maruti-Suzuki) has been the major player in the passenger car

4 A vehicle completely built out of the country.

5 For instance, the new PMP programme of 1980s stipulated a local content ratio of 90 per cent (D'Costa 2009).

6 An overall supportive environment was visible in the two-wheeler segment also. In 1982, the government allowed foreign collaboration for the manufacture of 100 cc two-wheelers, with a 40 per cent cap on foreign equity.



market in India,⁷ maintaining its dominance even after 2007 when the government divested from the company in favour of private Indian shareholders.⁸ Thus, 1983 was the starting point of a new liberalised era in the Indian car market.

The 1980s also saw a visible awakening of companies producing car components. Joint ventures between foreign and domestic investors in car assembly provided spillover gains to the component industry. Local content rules⁹ and technology transfer requirements remained in place and supported the growth of domestic production. In subsequent years, joint ventures also appeared in the component sector when several Indian firms entered into production agreements with Japanese companies, which eventually kick-started the export of auto components. Learning from global partners, and expanding through their networks, further gained momentum in 1990s when other global automobile majors and tier 1 component producers started operations, making India a global exporter of auto components.

1.2 New Automotive Policy

»Liberalisation« and market reforms since 1991 have provided the impetus for the industry to flourish further. A new automobile policy was launched in 1993, further facilitating the entry of global assemblers. The passenger car segment was delicensed in 1993, though quantitative restrictions on imports continued. By 1995, the auto industry was further deregulated and in 1997, automatic FDI approval of joint ventures with a 51 per cent majority share for the foreign partner was allowed (D'Costa 2009). Within a few years, the country witnessed a massive onset of multinationals in the auto industry,¹⁰ mostly through joint ventures with Indian firms (Mukher-

7 By the early 1990s MUL had bagged more than 50 per cent of total passenger car production in India, besides providing a good base for exporting compact cars.

8 When MUL was formed, in early 1980s, the government owned 80 per cent of the equity. Over time the government share was reduced. In 2007, when the government sold the remaining 18 per cent of shares to financial institutions, its participation in Maruti-Suzuki virtually ceased.

9 At the beginning, MUL started with government approval to import 40,000 fully built-up Suzuki cars in the first two years. It soon had to follow certain guidelines for indigenisation, however, initially, to use 33 per cent locally produced parts.

10 The major multinationals that entered the Indian market in the initial years of liberalisation are: Daewoo, Peugeot, General Motors, Mercedes-Benz, Honda, Hyundai, Toyota, Mitsubishi, Suzuki, Volvo, Ford and Fiat (Krishnaveni and Vidya 2015).



jee and Sastry 1996). Whereas some manufacturers left the market due to increased competition,¹¹ others joined. Table 1 illustrates the entry of major assemblers in the Indian market.

Table 1: Mode of Entry of Auto Majors, 1983–2007

Company	Mode of Entry	Year
a) Before 2000		
Suzuki	JV with government (Maruti)	1983
Mercedes Benz India	JV with Telco	1995
PAL Peugeot	JV with Premier Automobiles	1995
Daewoo Motors India	JV with DCM	1995
Honda Seil	JV with Shriram	1995
Ford Motors in India	JV with M&M	1996
General Motors India	JV with Hindustan Motors	1996
Hyundai India	100% subsidiary	1996
Toyota Kirloskar Motor	JV with Kirloskar	1997
b) Post-2000		
Skoda India (Volkswagen)	100% subsidiary	2001
Renault	JV with Mahindra	2005
Nissan India	100% subsidiary	2005
BMW India	100% subsidiary	2007

Source: Ramachandran et.al (2011).

In 1991, the government introduced the policy of concluding Memorandums of Understanding (MoU) with foreign investors over a time span of five to seven years to promote both exports and the localising of production. It obliged foreign companies to meet export targets, while at the same time further indigenising production. The specific obligations were determined on a case-by-case basis. Later on, in 1997, export stipulations were adjusted to allow joint ventures to postpone annual export commitments from the initial to later years. In addition, companies were allowed to substitute the export of passenger cars with the export of components.

11 By the early 2000s, Daewoo, Fiat, PAL-Peugeot and PAL had ceased their operations (D'Costa 2009).



On the production front, the new automotive policy in 1997 demanded that foreign firms localise production at 50 per cent within three years and 70 per cent within seven years (Jha and Chakraborty 2014). These thresholds provided Indian manufacturers in the component industry with additional markets that they could use to further enhance their competencies in supplying domestic and global assemblers. Thus, by the beginning of the present century, India's automobile and auto component industry was able to establish strong competencies in the domestic sector, along with a stunning beginning in the export sector.

2.3 Towards a Deregulated Market

After 2000, most of the protectionist clauses pertaining to the Indian automotive sector were abolished. The pro-market policy was partly due to external pressures, in particular from the WTO,¹² and partly due to the advance of neoliberal principles in government. In 2001, India was forced to remove quantity restrictions on over 700 items (including the automotive sector) after it lost a case at the WTO brought by the United States. A new Auto Policy (2002) ended the obligation for foreign investors¹³ to establish joint ventures and permitted 100 per cent foreign control for both the automobile and the component sector.¹⁴ It also exempted manufacturers and importers in the auto sector from licensing and approval. The local-content obligations were removed. Furthermore, a new policy was launched to offer tax rebates on R&D expenditure, primarily to enhance the technological competencies of domestic firms in the automobile industry.

Thus, from a highly restricted regime in the early years of independence, the automotive industry slowly moved to a liberal system. Having brought in foreign investors and set India's automotive sector on an export path, one can describe this journey, in D'Costa's (2009) words, as a development »from curtailment to internationalization«.

12 India has been a member of the WTO since 1995.

13 The industry has attracted a huge volume of FDI, worth USD 11.35 billion during April 2000–November 2014 (GoAP 2015).

14 Previously, the right of 100 per cent foreign ownership could be obtained only by special permission on a case-by-case basis. Automatic approval was granted only for FDI with a maximum equity participation of 51 per cent. Since 2002, foreign investors have been free to decide which way to go.



Pushing India further along the road of global competition, the government put in place the Automotive Mission Plan (AMP) 2006–16, which focuses on strengthening technological competencies. It includes provisions for a technology modernisation fund to benefit SMEs and improve institutional capabilities for imparting skills in the automotive sector. AMP 2006–16 is intended to help establish training institutes, auto-design centres, special auto parks and special export zones for auto components. Subsequently, the National Automotive Testing and R&D Infrastructure Project (NATRIP) was established with total investment of USD 388.5 million, aimed primarily at furnishing the industry with global performance standards. There have also been initiatives from the private sector aimed at building up R&D competencies.¹⁵

Apart from NATRIP, which involves national investment to improve the R&D base, quality in production and performance, concessions and rebates are also provided for automotive firms under the Income Tax Act (since 2012).¹⁶

2 Passenger Car Industry and Market in India: Current Profile

With a gross turnover of more than USD 50 billion, India's automobile industry is one of the largest in the world. In 2014–2015, it produced a total of 23,366,246 vehicles, including passenger vehicles, commercial vehicles, three-wheelers and two-wheelers. The two-wheeler segment has the highest share (77 per cent). This is followed by passenger vehicles (14 per cent) (Figure 1).

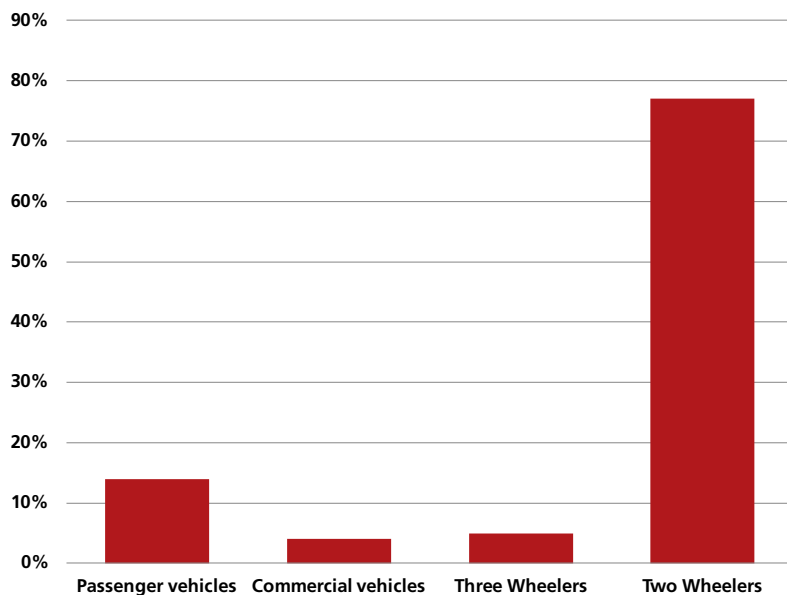
Although the two-wheeler segment is numerically the largest branch, it is the passenger car segment that is propelling the growth of the industry. Passenger vehicles are the fastest growing sector within automobiles, with a compound annual growth rate of 12.9 per cent during the period 2004–2005 to 2012–2013. In 2012–2013 passenger vehicle production was 3.2 million. Sales rose by 5 per cent in 2014–2015 after a brief slow-down for two years (Table 2).

15 Latest official sources (for example, the website of the »Make in India« programme) claim that global majors like Hyundai, Suzuki and GM are to set up an R&D base in India.

16 For instance, the Union Budget, 2012–13 extended the right of automotive firms to deduct R&D expenditure (in the form of a 200 per cent double weight) from its tax load for a further period of five years.



Figure 1: Vehicle production – sectoral shares 2014–2015



Source: SIAM 2015 (<http://www.siamindia.com>)

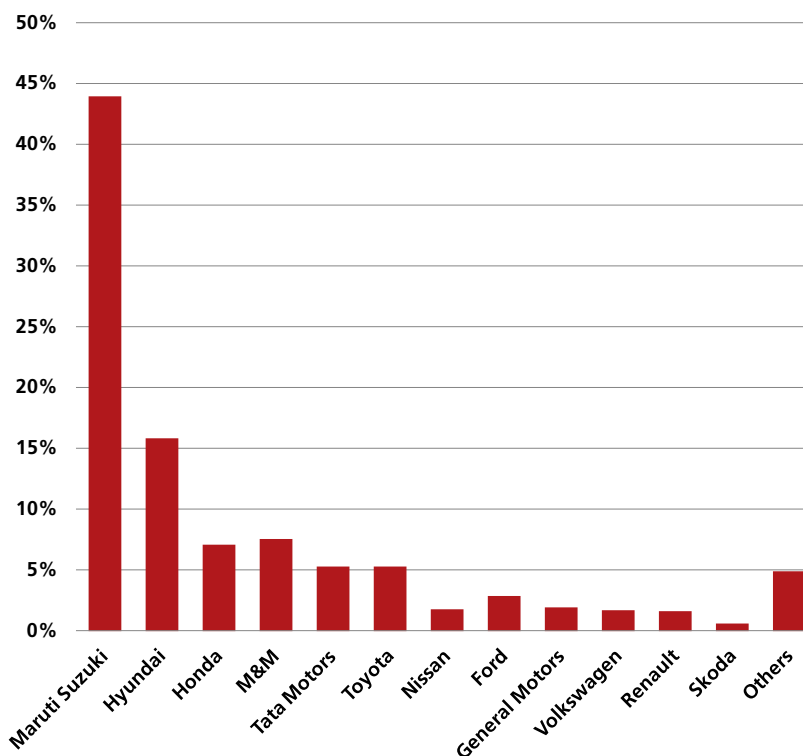
Table 2: Production of passenger vehicles, 2004–2005 to 2014–2015

Years	Production	Domestic Sales	Exports
2004–2005	1,209,876	1,061,572	166,402
2005–2006	1,309,300	1,143,076	175,572
2006–2007	1,777,583	1,379,979	198,452
2007–2008	1,838,697	1,549,882	218,401
2008–2009	1,838,697	1,551,880	335,739
2009–2010	2,357,411	1,951,333	446,145
2010–2011	2,982,772	2,501,542	444,326
2011–2012	3,146,069	2,629,839	508,783
2012–2013	3,231,058	2,665,015	559,414
2013–2014	3,087,973	2,503,509	596,142
2014–2015	3,221,072	2,601,111	622,470

Source: SIAM 2015 (<http://www.siamindia.com>).



Figure 2: Passenger car market share of major companies, 2015



Source: Company websites; SIAM 2015 (<http://www.siamindia.com>)

The passenger-car industry is still dominated by Maruti-Suzuki. In 2015 (see Figure 2), Maruti-Suzuki accounted for 43.93 per cent of total sales of passenger vehicles, followed by Hyundai (15.78 per cent), Mahindra and Mahindra (7.55 per cent), Honda Motors (7.09 per cent), and Toyota (5.3 per cent) and Tata Motors (5.03 per cent).

In the early years, the expansion of the Indian auto sector occurred primarily in the domestic market (Mukherjee and Sastry 1996). In recent years, Indian companies have been expanding into international markets. This expansion includes FDI by Indian firms, in particular buying foreign producers. Tata's takeover of Daewoo Trucks in Korea and the acquisition of Jaguar and Land Rover (from Ford) are examples of this. Thus, from an initially domestic market-driven growth, the automotive sector is moving into a new phase, entering the global market.



The component sector¹⁷ has witnessed similar growth in the post-liberalisation period. The sector has a turnover¹⁸ of USD 38.5 billion (2014–2015), nearly a third of which comes from exports (USD 11.2 billion in 2014–2015). The major export destinations for auto components are Europe (36.39 per cent), Asia (25.29 per cent) and North America (23.25 per cent). USA is the single largest export market (22.35 per cent). Components from India include hydraulic power steering systems, steering gear systems, suspension systems, crank shafts for engines, brakes and so on. Also, India has emerged as a global hub for small engines¹⁹ for many global assemblers. Currently, over 40 car and truck makers and their tier-1 suppliers now have international procurement offices (IPOs) in India.

3 Drivers of the Auto Revolution

The »auto revolution« in India since the 1980s owes its dynamics to a number of factors, ranging from the magnitude of FDI and state policies and to India's economic and demographic advantages. Overall, the variety of state policies and their interplay with FDI are the dominant factors that determined the growth of the automotive sector.

3.1 Foreign Direct Investment

A sector-wide analysis of FDI inflows shows that the automobile sector has attracted huge amounts of FDI since it was opened up for 100 per cent foreign equity participation. At present, the car industry ranks sixth among all economic sectors²⁰ in attracting FDI. The cumulative FDI flows into the Indian automobile industry during January 2000–March 2015 were USD

17 The major data source for the auto component sector is the Auto Components Manufacturers Association (ACMA).

18 Turnover includes supplies to OEMs, aftermarket sales and exports.

19 In India, the small car segment essentially led the growth of the automotive industry. It started with the Maruti 800 model, which was produced through collaboration with Suzuki, a Japanese manufacturer specializing in small cars. But, India's capability in so-called »frugal engineering« and small car production has matured over the years and now India is the leader in small car production, ever since Tata motors launched its Nano car in 2009, which is the world's cheapest car in the compact-car segment.

20 The sectors that occupy first five positions in FDI are services (including finance, banking and insurance); construction development; telecommunications; computer software and hardware; and drugs and pharmaceuticals, in that order.



Table 3: FDI in the automobile industry, 2000–2015 (million Rs)

Year	FDI in Auto Industry	Total FDI Inflow	% in Total FDI
2000–2012	358,788	8,701,657	4.12
2013	90,020	1,294,825	6.95
2014	136,350	1,753,133	7.78
2015 (Jan.–March)	61,497	614,988	10.00
Total in Rs.	646,655	12,364,603	5.23
Total in US\$	12.5 billion	\$ 249.3 billion	

Source: Department of Industrial Policy and Promotion (DIPP), 2015

12.5 billion (5.23 per cent of total FDI during the period) (see Table 3). In recent years, the annual share of FDI flow into automobiles has increased and is about 8 per cent of total FDI inflow.

3.2 Centrality of Industrial/Automotive Policies

State involvement in the automotive sector in India is characterised by three different approaches. During phase I, commencing after independence, FDI was kept out and imports made difficult in order to provide local capital with opportunities to develop a car industry on its own. This phase led to a car industry with low volumes and backward technology.

Phase II, starting with the special investment project for Suzuki in 1983 and intensifying in the 1990s, involved a mixture of liberal and protectionist policies. The national borders were opened for FDI. Using a classic import-substitution approach, FDI was »forced« into joint ventures and high thresholds for local content provided room for local investors in automotive as well as component manufacturing.

Phase III is the current, »liberal« phase, which was initiated in the early 2000s. Protectionism on all fronts is being removed, local content clauses are being loosened and foreign companies can go it alone. State policies here are less or no longer protectionist and are aimed at improving market conditions and providing positive incentives to investors oriented towards higher value-added production.

The Auto Policy (2002) and the Automotive Mission Plan 2006–2016 are specific and direct interventions by the government to strengthen high-



er value added in the automobile and auto components sectors. They focus on promoting R&D, which should lead, among other things, to the development of technological competencies. The National Automotive Testing and R&D Infrastructure Project (NATRIP) is aimed at raising local production standards to be on a par with global standards.

Government policies also supporting the automotive industry from the demand side. A vehicle financing scheme that Indian banks have been implementing since the 1990s has enabled a large number of consumers to own two-wheelers and cars.²¹ Competition between federal states to win investment projects from foreign and domestic producers has also contributed to a favourable environment for the automotive industry. These include: assurance of green channel approval systems, provision of land and infrastructural facilities at subsidised rates, relaxation of stamp duties, tax incentives/holidays, power-tariff incentives, concessional interest rates on loans, provision of backward area subsidies and special incentives for mega-projects. The overall supportive policy environment prevailing in the Indian federal system has been a crucial determinant of the auto revolution in the country.

3.3 Other Determinants

A number of other factors have cumulatively enabled the auto revolution in India. First is the availability of an abundance of skilled and unskilled workforce and at globally competitive costs (»cheap labour«²²). According to the latest data, over 20 million workers are employed by the automotive industry, directly or indirectly. This number is expected to grow in the coming years. With a wide network of more than 19,000 polytechnics and over 10,000 engineering colleges, India has established its credentials as a strong reservoir of skilled workers.²³ Abundant availability of steel at competitive prices adds to India's suitability for local production. Currently, India is the fourth largest steel producer in the world and the production cost of steel in the country is competitive by international standards.

The overall steady growth of the Indian economy since 1991 and the visible growth of a middle class with sufficient purchasing power have been the most

21 The auto-financing industry grew at the annual rate of 13 per cent during 2008–2013.

22 A recent comparison of minimum wages in the automotive sector in seven major Asian countries (by Marklines, an auto industry portal) finds that India had the lowest minimum wages as of January 2015 (http://www.marklines.com/en/report/oem001_201501).

23 Currently, India has the highest number of qualified engineers in the world.



important factors on the demand side. Without high growth rates, many foreign investors would have been reluctant to invest in India's automotive industry.

4 Production Organisation and Supply Networks

A close examination of the industrial structure of the automotive industry reveals two important aspects. The first is the centrality of SME clusters and the other, the importance of supply chains or buyer driven value chains.

4.1 SME and Cluster-Based Production

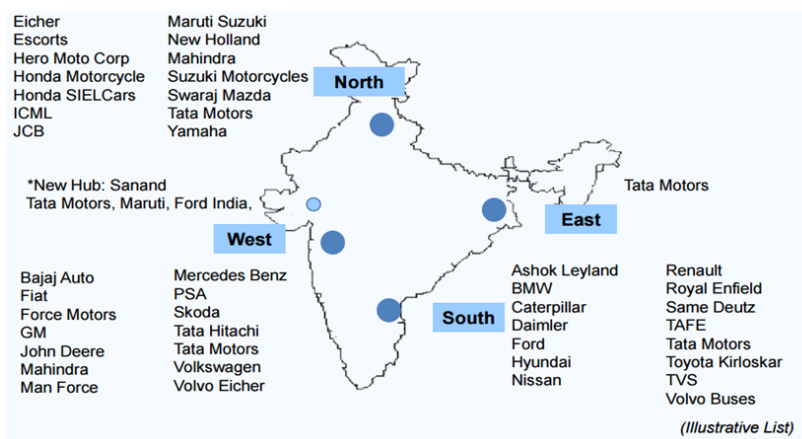
Automobile and auto component production in India has grown in clusters of interconnected firms, linked by commonalities and complementarities (GOI 2006). The active participation of small and medium-sized enterprises (SMEs) is also a unique aspect of this networked and cluster-based production approach. Given the strong backward and forward linkages, promoting SMEs in the auto sector has been central to the industrial policies of various governments, especially in the past few decades. Accordingly, SMEs have been viewed by policymakers and multilateral agencies as growth engines and potential sources of employment provision (Vijaya-baskar 2008; Rani 2005; Jeemol and Rani 2008).

Currently, there are three major and one smaller auto clusters in India. The Southern Cluster comprises Chennai, Coimbatore, Hosur and Bangalore; the Western Cluster spreads across Pune, Mumbai, Nashik and Aurangabad; and the Northern Cluster includes Delhi, NOIDA, Greater NOIDA, Ghaziabad, Faridabad, Gurgaon and Manesar (see Figure 3). Of the three major clusters, the Southern and Western Clusters are old centres, having some automotive production before 1980. The Northern Cluster was developed only after Maruti commenced operations (in Gurgaon in 1983), though the region had a sound base of pre-existing industrial capabilities.²⁴

24 Competencies and locational advantages are considered essential for the industry to grow in a particular industrial belt. In a comparative study of two automobile production centres – Pithampur in Madhya Pradesh and NOIDA (in Uttar Pradesh) – near New Delhi, Okahashi (2008) explains that pre-existing infrastructural facilities and competencies in administration and coordination are a central factor that determines the success of industrial clusters. It is shown that Pithampur, which is essentially a non-industrial area, despite attracting major automotive factories, could not grow further as it did not have the locational advantage of having ancillary production centres close by.



Figure 3: Automotive clusters in India



Source: Automotive Component Manufacturers Association (ACMA), 2015.

Presently, all three clusters are equally prominent in terms of revenue and export shares and the participation of major domestic as well as global assemblers and auto component manufacturers.

There is a smaller auto-industrial belt in the east, which includes Jamshedpur-Kolkata cluster (Eastern Cluster) and an upcoming cluster around Sanand, in Gujarat. As many state governments are inviting corporate investment in the automotive sector, a few more clusters may emerge in the coming years.²⁵

4.2 Supply Chains: Genesis and Expansion

The Indian automotive industry can be characterised as a vertically integrated pyramid, in which the OEMs or large assemblers are positioned at the top; tier 1 and tier 2 SME component suppliers in the middle; and small and tiny firms in the unorganised sector²⁶ in the lower ranks of the chain

25 For instance, the newly born state of Andhra Pradesh (after bifurcating Telangana from the erstwhile Andhra Pradesh) has come out with a Automobile and Auto Components Policy (2015–20), aimed at creating two more auto clusters (GoAP 2015).

26 While the firms in the organised sector cater mostly to the OEMs and lead firms (and production is of high value precision instruments), the units in the unorganised sector mainly cater to the local after-sales market and deal mostly with low-value added products.

(Uchikawa 2011) (Figure 4). The chain is connected through subcontracting practices. SMEs act as subcontractors to the large firms, following the production requirements and specifications of the latter. The SMEs also try to regularly upgrade their technologies through vertical and horizontal integration networks with major assemblers (Kumar 2007). Such arrangements provide flexibility to large assemblers to adjust their production in volume and quality to fluctuating market trends.

The integration of auto firms through supply chains and subcontracting arrangements (or »tierisation«) commenced with the entry of the first large foreign investor Maruti Udyog Limited (Suzuki) in the early 1980s. Prior to this, the prominent method followed by assemblers was to produce parts and components in-house²⁷ (Uchikawa 2011). But this tierisation did not happen all in one go. It evolved in stages and in line with the government's indigenisation policies.

Even in the early 1990s, many assemblers (including Maruti and other prominent OEMs that entered the Indian market through joint ventures), initially started with completely knock-down (CKD) kits²⁸ and only slowly moved to include locally produced parts.²⁹ At the beginning, many OEMs entered into purchase-supply contracts with local supply firms. Gradually, the lead firms also helped their local suppliers to enter into joint ventures with their overseas component suppliers.³⁰ However, even with this subcontracting drive, many assemblers retained control over the production of critical components by co-developing them with key suppliers.

27 Outsourcing of parts and components was practiced in a minimal way even before the 1980s. For instance, international companies such as Bosch and Goetz were involved in the production of critical components to some suppliers even in 1950s. Similarly, there were some collaborative ventures in the auto component sector – between foreign companies and Indian firms (for example, TVS Group; Kalyani Group) in the 1950s. But due to multiple factors such as the absence of economies of scale (due to low production volume), slow growth of demand and lack of competition, subcontracting did not develop and production technologies did not mature during this phase (Uchikawa 2011).

28 D'Costa (2009) notes that in 1984 – that is, two years after entering the market – Maruti manufactured around 12,000 cars, mainly based on imported CKD kits.

29 Hyundai set up a factory in 1996 and brought 17 sub-contractors from Korea. It also started procuring from domestic firms (Uchikawa 2011).

30 While examining the efficacy of subcontracting chains in enhancing the competences of local firms, Kumar (2007) notes that the subcontracting arrangements were beneficial to Indian SMEs in terms of productivity improvements, particularly labour productivity and overall economic performance, although much of the assistance between global transnational corporations (TNCs) and local SMEs was confined to the basic requirements of the product related and purchase process dimensions of assistance.



While initially suppliers were exclusively bound to one assembler,³¹ over time subcontracting firms took advantage of the opening up of the market and started to supply parts to multiple assemblers.³² This helped SMEs to grow into medium and large companies. In the meantime, the OEMs also devised new strategies to retain their lead in the supply chain. They evaluated the performance of subcontractors in terms of timely supply, quality of product and cost efficiency. In order to avoid risks and to reduce dependencies, they started to purchase the same components from two firms simultaneously.

Over the years, we can also observe that lead firms (assemblers) have reduced the number of subcontractors, mainly to save on the high cost of assisting sub-contracting firms in following production specifications. For instance, between the 1980s and 2000 Maruti reduced the number of subcontracting firms from 400 to 220 (Uchikawa 2011). Suresh (2010) confirms this strategy of assemblers to reduce the number of component suppliers and to entrust them with a wide range of parts. Essentially, this trend has led to the elimination of smaller firms as direct contracting parties to assemblers.

In a system in which contracts are strictly routed through large firms, the small and tiny enterprises that carry out the production of small segments of auto parts normally get only a minor proportion of the original price agreed by the OEMs. The intermediary firms in the sub-contracting chain siphon off large shares of the profit by fixing low prices for the products procured from tiny and small firms and by indulging in a variety of malpractices (Suresh 2010).³³

Of late, there have also been efforts in the industry to shorten the length of time needed for components to run through the supply chain hierarchy in order to realise cost competitiveness and time efficiency. With all these developments, the industry is now becoming more and more embedded in post-Fordist production regimes, based on just-in-time production and the use of »flexible« labour arrangements.

31 This dependence on one assembler could be called »captive production«.

32 Uchikawa (2011) explains this transformation as a two-stage process. An initial shift of the value chain »from integrated firms to collaborative ones with captive units«, which eventually graduated to a »shifting of captive value chains to relational value chains«.

33 Apart from the low prices fixed by the subcontractors, the small and tiny firms also lose out because of delayed payments and price/input-cost fluctuations between the time of contract and delivery, all of which cumulatively affect the smooth functioning of the small firms (Suresh 2010).



5 FDI, Joint Ventures and Growth Strategies of Local Producers

During the initial phase of FDI inflows into the automotive sector – prior to 2000 – joint ventures were the preferred entry-strategy of foreign firms. The joint venture was considered to be a more desirable option over other modes, such as greenfield investment and the acquisition of domestic firms.³⁴ The possibility of getting help from local firms in negotiating with the government over regulatory issues certainly added to the feasibility of joint ventures as a hassle free entry-strategy. Joint ventures also were a risk-sharing approach in that they provide global players with political security in a new environment and access to local resources to launch their operations.³⁵ Even then, the key motive behind opting for a joint venture during the 1990s was the regulatory requirements. This is evident from the fact that after permission for this was granted, increasing equity share or opting for a 100 per cent subsidiary became the preferred strategy³⁶ of foreign assemblers.³⁷

After a certain period of operations, foreign firms had got used to dealing with local institutions/regulatory systems, thereby reducing their dependency on local partners. The inadequacy of the resources provided by local partners and their inability to invest sufficiently in capacity expansion projects are other factors that prompted global majors to opt for full ownership. Joint ventures indeed can be viewed as »opportunistic rather than strategic in nature« (Ramachandran et al. 2011).

The opportunistic behaviour of joint venture partners also holds true for the Indian partners in joint ventures. A good example is Mahindra and Mahindra (M&M). In 1994, M&M signed a tie-up agreement with Ford, with the primary objectives of product re-engineering and process learning. Accordingly, during the first three years, Ford used the M&M facilities to produce for the local market. But in 1997, when Ford wanted to establish a new plant, and Mahindra was required to invest 100 million USD (to keep its

34 See Table 1 for details.

35 For instance, Ford started its Indian production using the pre-existing production facilities of Mahindra & Mahindra.

36 There is a positive correlation between relaxation of FDI norms and expansion of the equity stake of global players. As soon as the regulations were eased and the FDI limit was increased via the automatic route, the global players took the opportunity to expand their equity stake (Ramachandran et al. 2011).

37 For instance, Maruti-Suzuki, started as a joint venture in 1982, became a subsidiary of Suzuki in 2007, with no stake of the initial joint venture partner; Honda Cars India limited started as a joint venture and eventually became a wholly owned subsidiary.



equal stake), the latter chose to retain only a 15 per cent stake in the new venture. During the same period, M&M invested heavily in developing a new model of its own (the Scorpio). It purchased the technology through royalties and IPR purchases from international markets. In the aftermath, it became clear that M&M had used the joint venture phase for managerial learning and not so much for technological development (Richet and Ruet 2008).

M&M thrived by successfully mixing different strategies, including joint ventures, acquisitions, licence agreements, patent purchases and collaborative marketing arrangements. The company was in a joint venture with Renault (Mahindra Renault Limited³⁸) during 2007–2010. Subsequently, it bought Renault's share and retained technical support from Renault through a license agreement. Mahindra-Renault also continues to receive key components from Renault and has an arrangement to use the manufacturing facilities of the Renault-Nissan Plant in Chennai. Over time, M&M has also expanded its business-base through acquisitions both in India and abroad³⁹ and by setting up global subsidiaries abroad.⁴⁰

The case of Tata Motors, the largest Indian automobile company, also substantiates the expansion strategy of local producers by mixing multiple modes such as joint ventures, marketing alliances and acquisitions. Since 2005, Tata has had a strategic alliance with FIAT to share production and marketing infrastructure. The company has been actively expanding its base via acquisitions, including Daewoo Commercial Vehicles in 2004 and Jaguar Land Rover in 2008. In the recent past, the company has also entered into joint ventures in different parts of the world, not only in the passenger car segment but also in heavy vehicle production.⁴¹

Thus, it is evident from the foregoing discussion that, in an era of increased influx of FDI and improved scope for forging collaborations with global OEMs, Indian firms could quickly upgrade their positions in global production chains and emerge as crucial players, both in local and global markets.

38 Mahindra-Renault Limited uses M&M's network for the sales and servicing of Renault branded vehicles in India. Currently, it has more than 140 dealerships across India.

39 The company has a controlling stake in REVA electrical car company and using REVA's technology. Mahindra Reva Electric Vehicles recently launched a new version of the electric car, the E2O. On the global acquisition front, in 2011 M&M acquired South Korea's Ssang Yong motor company.

40 The global subsidiaries of M&M include Mahindra-Europe, Mahindra-USA, Mahindra-South Africa and Mahindra (China) Tractor Company Ltd.

41 The major joint ventures of Tata Motors include those with Brazil based Marcopolo (2006), Thailand's Thonburi Automotive Assembly Plant Company (2008) and the Tata-Africa Joint Venture (2011).



6 Prospects, Potentials and Challenges

Despite its significant growth in the past few decades, the Indian automotive sector still has significant room for further expansion, for several reasons. First, India still has a substantial amount of untapped demand on the part of prospective vehicle users in the two-wheeler and passenger car segments. The labour force is still growing and over 68 million households are expected to be added in the middle class bracket by 2030, thereby bringing more room for expansion for automobiles. The existing ratios of vehicles to population are not very high,⁴² which, among other things, provides ample scope for further expansion of markets, especially in the rural areas of India.

In the export sector, too, the industry has real prospects, especially in the markets of Africa, Southeast Asia, Europe and the United States. Currently, India is emerging as an export hub for sports utility vehicles (SUVs) and it is expected to be a strong base country for the global automobile majors to export SUVs to Europe, South Africa and Southeast Asia (Krishaveni and Vidya 2015).

Growing migration in connection with urbanisation is another important factor. According to available estimates, the level of internal migration in India is over 140 million, which may grow further and add to the demand for means of transport.

As in the past, the key factor that will determine the growth of the industry in the coming years is the role of the state and its possible intervention. Currently, various governments (at the centre and at state levels) view the automotive sector as a substantial segment for future growth. The recently launched flagship campaign of the central government, »Make in India« (MII), accords prime importance to the automotive sector. It takes the view that India's car market has the potential to grow to more than 6 million units annually by 2020. Likewise, several state governments are also working towards strengthening the automotive sector.⁴³

Notwithstanding these prospects, there are also many challenges for the auto-component industry. These include: uncertainties regarding future FDI flows, higher level of imports, growing competition from other countries, extremely volatile fuel prices, environmental considerations and constraints on account of accelerating urbanisation.

42 At present, there are only 16 cars per 1,000 persons. For two-wheelers and commercial vehicles, the corresponding figures are 85 and 5, respectively.

43 The Automobile and Auto Components Policy announced by the newly formed government of Andhra Pradesh (GoAP 2015) is the most recent example of this.



Retaining the current level of FDI flows into the automotive sector appears likely to be a tougher task in coming years, especially in view of the looming crisis in the developed countries. Even now, the automotive industry is still a net importer with expenditures on the import of auto components above export incomes. For instance, in 2014–2015, the import of auto components by India amounted to USD 13.58 billion (as against an export figure of USD 11.2 billion).⁴⁴ With import barriers largely removed, there is a credible threat of cheap imports from other competitors (especially from Asian countries such as Thailand, China and Japan). This sends a strong signal for India to further focus heavily on localisation.

Challenges also come from technological changes in the global automotive industry. Given the volatile scenario of petrol prices, there have been efforts to develop cars that run on alternative fuels and to design vehicles with better mileage. Initiatives include compressed natural gas (CNG) and liquid petroleum gas (LPG) vehicles and other forms of gaseous fuel (Lockstrom et al. 2011). In recent years, the promotion of CNG vehicles has been a priority in states such as Delhi.

Experiments are also going on in terms of strengthening the electric car segment in a big way. Developing capabilities for designing efficient hybrid and electric vehicles to meet performance and price expectations is a main objective of the National Mission for Electric Mobility 2020. The Mission aims at converting India into a world leader in the two-wheeler and four wheeler electric-vehicle markets. Currently, the use of electric vehicles is being promoted by central and state governments by offering tax exemptions and subsidies. The current central government tax subsidies to promote alternative vehicles include: concessional excise duty of 6 per cent to manufacturers supplying batteries to producers of electrically operated vehicles and exemption from basic customs duty on lithium-ion automatic batteries, which are used in the manufacture of hybrid and electric vehicles. There are also initiatives on the part of state governments. For example, in 2008, the government of Delhi announced a 29.5 per cent discount for the small electric car, the Reva. The government also recently altered its motor traffic regulations to allow battery-operated e-rickshaws to ply their trade as connecting vehicles near metro stations in Delhi. The Union Territory of Chandigarh provides a subsidy of 15 per cent on battery-operated vehicles,

44 According to the latest data from ACMA, the major countries of origin of imported auto-components are: China (23.94 per cent); Germany (14.57 per cent); Japan (11.53 per cent); South Korea (10.66 per cent); Thailand (8.27 per cent); the United States (6.96 per cent); Italy (3.75 per cent); the United Kingdom (2.67 per cent); and Spain (1.40 per cent).



whereas the government of Karnataka offers a 4 per cent VAT waiver for the first five years after the launch of such cars.⁴⁵

India still lags behind more mature economies such as the United States and the EU in terms of maintaining emission-control standards (Euro Standards) for vehicles. This is despite the fact that a formal emission-control regime has been in place since 1991 and a National Fuel Policy was announced in 2003. This leaves another major task in terms of upgrading vehicular technology, which is equally an opportunity for the industry for further expansion and the promotion of auto markets.

7 Conclusion

It is evident that the automotive industry continues to be a strategic sector for further growth and business expansion. From an initially domestic-market driven growth, the industry has moved to a new phase, where its future is equally propelled by global markets. Many Indian firms are currently in the process of upgrading, frequently changing their relative positions in the domestic as well as global supply chains. In the coming years, India is also going to become a major market for hybrid cars, electric vehicles and other vehicles with alternative fuel options. At this juncture, pro-active policies and interventions from central and state governments are crucial in ensuring stable growth of the auto industry, which has strong forward and backward linkages, as well as high potential for employment generation.

45 For a detailed account of the supportive roles of the Indian state vis-à-vis the promotion of electric vehicles, see Lockstrom et al. 2011.



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The Automotive Sector in Russia

Between Growth and Decline

Rudolf Traub-Merz

1 Introduction

Russia's automobile industry has been something of a rollercoaster ride from the very outset. Four major phases can be distinguished. In the Soviet Union the branch developed in a protected niche within a command economy, although it never came close to fulfilling its growth potential. With the end of controlled resource allocation it was plunged into the muddy waters of market competition which resulted in a deep transformation crisis. A policy of import substitution opened the door to investments by global automobile companies and set the sector on a growth path, sustained by the oil boom. Russia became one of the world's most thriving markets. The collapse of the oil price in 2014–2015 again changed the signal and wrenched the sector into a profound crisis. Russia's automobile sector is now fighting for its life with uncertain prospects.

2 The History of the Russian Automobile Branch¹

2.1 1931–1990:

Car Production in the Soviet Union

Russia's automobile industry had its beginning in the early years of the Soviet Union. The first cars were foreign reproductions. Primarily, small numbers of Ford Model A cars and trucks were assembled at a plant in Moscow. The first Five-Year Plan for 1928–1932 gave impetus

1 For a more detailed study see Traub-Merz (2015).



to domestic automobile production. The Soviet government concluded an agreement with Ford to build an assembly plant in Nizhniy Novgorod. The new plant opened in early 1931, but struggled from the beginning. The production plant, renamed the Gorkovski Avtomobilny Zavod (GAZ), produced fewer »than 24,000 models [in 1932] as against a production target of 140,000« (Serious Wheels n. d.). The cooperation with Ford was discontinued in 1935 and GAZ continued production without a foreign partner.

Even before the Second World War the focus was on lorries and tractors. During the War only utility vehicles were made for the army and the Soviet Union rose to become the second largest truck producer in the world, behind the United States.

Up until the 1970s vehicle production was geared towards the needs of national defence and large state enterprises. Private demand for passenger cars very much played second fiddle. Truck building was oriented towards strength, reliability and simple technologies to meet the requirements arising from bad roads, huge distances and harsh climatic conditions. In many regards they were built for self-repair by professional drivers.

It needed the ousting of Nikita Khrushchev in 1964 and the rise of Leonid Brezhnev to bring passenger cars into the focus of national planners. Russian car production at that time was characterised by the absence of fancy designs, technical devices unchanged over decades and safety and emissions standards far behind those of Western cars. But in particular, Soviet factories found it difficult to set up mass serial production and much of manufacturing remained bound to manual fabrication.

A huge project intended to modernise production methods and target private households as customers was launched in the mid-1960s. On the basis of a cooperation agreement with FIAT an auto-city was constructed from scratch in Togliatti – named after the leader of the Italian Communist Party for his efforts to get FIAT on board – on the Volga. The production halls of the new manufacturer AvtoVaz (Volga Automobile Plant) were designed for an annual production volume of 700,000 cars. The Lada, a modified FIAT 124 model (known in many countries as the Zhiguli), became the flagship project of the Soviet automobile sector. Subsequently, sales figures soared, AvtoVaz overtook GAZ and became the largest manufacturer by some distance. With market shares of 70–80 per cent AvtoVaz vehicles attained an almost monopoly position.

The socialist state-owned enterprise found itself at the centre of a competition-free production environment. It was protected against Western



manufacturers by insuperable import barriers and, domestically, allocation was dictated by annual plans. A total of 30–40 per cent of annual car production went for export to other Soviet republics and central and eastern Europe, while tens of thousands of the Lada Niva model were sold on Western markets. Given accumulated savings and lack of alternatives sales were virtually guaranteed. Soviet automobile production was afflicted only by supply bottlenecks – lack of quality or price were no obstacle to sales. By 1985 around 15 per cent of all private households owned a car, while millions hoped to be allocated one (Gatejel 2012).

The FIAT license to manufacture the Lada was a quantum leap for Soviet automobile production. But it remained a one-off investment. Even though demand for cars surpassed supply by at least three times and waiting lists were from three to six years, no further projects were initiated. AvtoVaz stagnated at around 800,000 cars annually, while total supplies from all Soviet factories stood at around 1.3 million. Building cars on license allowed the Soviet Union to close technological gaps with Western industries. But innovation was not forthcoming thereafter. By sticking to what they knew the quality gap in relation to Western car makes in terms of manufacturing and facilities opened up again and increased constantly. In 1991, when the Soviet Union collapsed, the domestic automobile industry was characterised by substantial underdevelopment.

2.2 1990–2005:

Transition Crisis – Privatisation – Renationalisation

The transition crisis from 1990 plunged the automobile industry – like all other branches of manufacturing industry – into a profound sales crisis (Traub-Merz 2015). Car exports to other former Soviet republics collapsed because of the newly established customs and currency barriers; on the domestic market Russian companies cut back on commercial vehicles for their vehicle fleets; and private households had to cope with real wage reductions of over 50 per cent. Despite opening up to automobile imports Russian manufacturers remained the main suppliers on the sharply contracted market. The low wage costs were the main protection factor and ensured Russian suppliers price advantages in most market segments. Vehicle purchases abroad were available only to the rich.

The transition crisis ended in 1999–2000 with the onset of the oil price boom. The automobile branch's production figures began to rise again due



to mounting demand. However, because real wages climbed more rapidly from this point on than gross national product and also the rouble dramatically appreciated, domestic producers lost their cost advantages. By 2005 automobile imports claimed a market share of 30 per cent with a clear tendency to eclipse domestic models. Largely stuck at the technological level of 1990, which in turn scarcely surpassed the level of 1975, Russian models were no longer competitive and the domestic automobile industry faced oblivion amidst the oil price boom.

The macroeconomic circumstances of the transition crisis were only one aspect of the automobile sector's adjustment difficulties. The other aspect emerged from »internal« enterprise policy problems. Privatisation from 1992 in the form of voucher distribution largely benefited managements and workers. Supported by the trade unions, who did not recognise the potential of company codetermination via workers' shareholdings and shunned business decision-making, managers and former party cadres were able to accumulate the shares and began to loot their own companies. AvtoVaz supplied cars to private trading companies controlled by their managers and received payment only later, massively devalued by inflation. The company produced billionaires, while its balance sheets were deeply in the red. Investment funds were not available, taxes could not be paid and the Russian state, which had only just privatised AvtoVaz, had no other option than to acquire a majority shareholding again in a debt-equity swap and to renationalise the manufacturing giant.

What is notable about this is that the state acquisition of the majority shareholding and its resumption of influence over decision-making did not change much. The management, which had not proved up to the job, was not dismissed and the company was not adapted to the needs of a market economy. One explanation for this is the Soviet concept of regional industrial development, which created several hundreds of so-called »mono-cities« (*monogorod*). AvtoVaz itself formed the economic centre of a »mono-city« and with a total workforce of 150,000 was the only major employer in the Samara region; employment policy and the prevention of social protests in the event of possible job cuts were the government's main concern. Thus while subsidies continued to flow to maintain jobs, investment for modernisation was not forthcoming.

In the end, external intervention was called for to turn the sector's fate around. Two »interventions« were intended to tackle the sector's backwardness and the long-term subsidisation of jobs from 2005. The new policy of



import substitution brought foreign manufacturers to Russia; furthermore, AvtoVaz was offered for sale to foreign investors.

2.3 2005–2014:

Import Substitution and the Car Sales Boom

Decrees No. 166 (29 March 2005) and No. 566 (16 September 2006), tightened with subsequent amendments, are classic instruments of import substitutional protection and expansion policy. Foreign carmakers obtained incentives such as reduced customs duties for production equipment and car components, tax rebates on profits and discounted prices for local inputs such as plant plots, water and electricity and other resources, if they gave up the importation of fully built-up vehicles and instead opted to establish assembly plants on Russian soil.

To avoid opening the domestic market only for CKD and SKD assembling, local content clauses were added. The share of imported vehicle components in local assembly had to be reduced and automotive production to be localised within 5–7 years to not less than 30 per cent. Later decrees raised this to 60 per cent.

Furthermore, a minimum of 25,000 cars annually was set to qualify for the tax and duty concessions. This threshold was augmented substantially by later decrees in 2010/2011 to 300,000 units.

Interestingly, Russia did not follow the principles of import substitution adhered to by China or other countries. The decrees contained no requirements on the need for foreign investors to enter into joint ventures with local producers; nor did they request in any form the transfer of technology. The import substitution regime followed liberal principles, discriminating only between importers and local producers and providing no protection to the Russian car industry.

The import substitution regime was established amidst a demand boom for passenger cars. Russia then possessed one of the fastest growing car markets worldwide, largely financed from growing revenues from energy exports, which through various mechanisms were translated into growing per capita income. All major international car makers responded to this improved market situation with FDI (more details in following section). The global financial crisis of 2008–2009 halted this growth but it proved to be a short intermezzo and thereafter the demand for cars returned to pre-crisis levels, making the Russian market the second largest in Europe, just behind Germany.



3 Structure of the Automotive Industry in Russia

3.1 Foreign Carmakers Take Over

By introducing an import substitution policy the government conceded the failure of previous efforts to increase production and satisfy domestic demand for automobiles with a purely Russian industry. Table 1 lists the international manufacturers that have invested in Russia. Not all of them are related to the import substitution decrees. Renault built a plant as early as 1998 as the first foreign investor in a joint venture with the City of Moscow, Ford (with Sollers) and GM (with AvtoVaz) in 2002. All later FDI, however, was enticed to the country by the import substitution decrees. There is no requirement to operate only within the framework of the import substitution decrees. Several foreign manufacturers, including BMW, have invested in CKD or SKD plants and have imported components assembled locally by a Russian firm. Straightforward licensed manufacturing is not listed in the table.

Figure 1 summarises the key development features of the Russian automotive market during the period 2005–2014:

- The total market doubled in the period 2005–2008 from 1.5 million cars to just under 3 million. After the enormous sales losses in the 2009 financial and economic crisis the market picked up again and growth returned to its pre-crisis level. Since 2013 low economic growth has also dampened automobile demand.
- The fluctuations in automobile demand are very volatile and are much sharper than changes in GDP.
- The share of imports, which by 2009 had leapt to 59 per cent, receded sharply within a few years (2013: 25.4 per cent).
- The share of vehicles from Russian manufacturers, still at 60 per cent in 2005, has also fallen sharply and in 2014 was only 18.5 per cent.
- The largest suppliers are now foreign firms with production plants in Russia. Their share rose from 12 per cent in 2004 to 71.2 per cent in 2014.

Three crowding-out processes are discernible:

- (i) Imports are crowded out by local manufacturing. Import substitution functions to localise production. This process is still a long way from completion, however. In 2014 imports still had a market share of 26 per cent, so that there is still room to take import substitution further.



Table 1: International automobile companies' manufacturing capacities in Russia

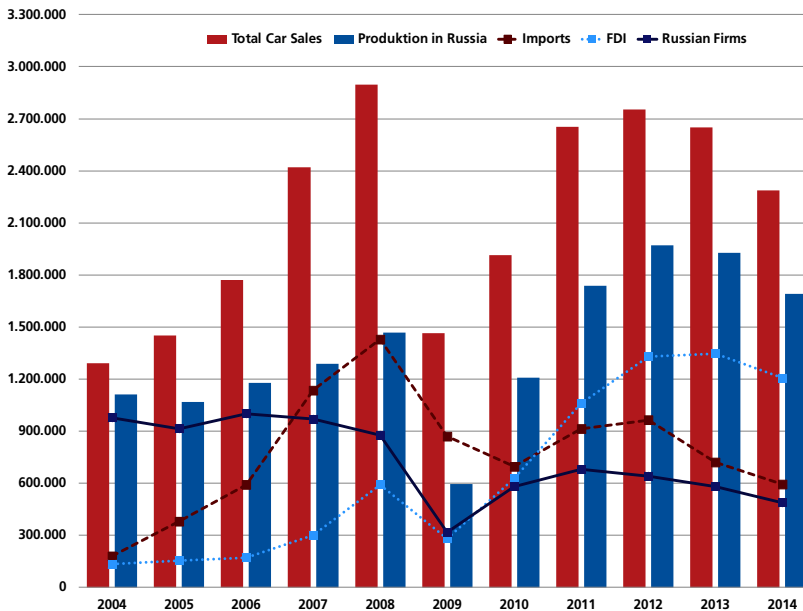
Company	Location	Since	Ownership	Capacity 2007	Capacity 2010	Capacity 2015
Renault-Avtoframos	Moscow	1998 / 2012	Joint venture / 100% FDI	80,000	100,000	160,000
Ford-Sollers	St Petersburg	2002	Joint venture	72,000	100,000	125,000
GM-Avtovaz	Togliatti	2002	Joint venture	60,000	60,000	110,000
VW	Kaluga	2007	100% FDI		115,000	300,000
Toyota	St Petersburg	2007	100% FDI		50,000	200,000
Nissan	St Petersburg	2007	100% FDI		50,000	100,000
GM	St Petersburg	2008	100% FDI		70,000	Closed
PSA Peugeot-Mitsubishi	Kaluga	2010	100% FDI		100,000	125,000
Hyundai-KIA	St Petersburg	2010	100% FDI		100,000	100,000
Ford-Sollers	Yelabuga (Tatarstan)	2011	Joint venture			200,000
Ford-Sollers	Naberezhnye Chelny (Tatarstan)	2011	Joint venture			200,000
VW-GAZ	Nizhny-Novgorod	2013	Joint venture			110,000
Renault-Nissan-Avtovaz	Togliatti	1966 / 2013	Russian / joint venture	800,000	800,000	1,150,000
Great Wall	Moscow-Tula	2017	100% FDI			(150,000)
Total capacity				932,000	1,445,000	2,880,000

Note: Capacity figures given by companies are calculated differently. By running a second or third shift, it may be possible to increase the production of a firm beyond the figure stated for capacity. Source: EBRD 2012; media reports; company websites.

- (ii) Foreign manufacturers are crowding out Russian companies. Import substitution favours only foreign car makers. This process has not yet reached completion, either. Russian firms supplied 487,000 vehicles in 2014 as against 1,205,000 by FDI firms.
- (iii) AvtoVaz's previous monopoly has been eliminated and the market has taken on a competitive structure. The market is fragmented, overall, so that AvtoVaz, despite a slump in production figures, remains the principal manufacturer on the market.



Figure 1: Russian car market, 2004–2014 (total sales, imports, domestic production)



Note: Figures from various sources differ, partly due to different consideration of stocks. In some years, figures differ by nearly 15 per cent. However, the overall trend of the five categories is not affected and all sources agree on the general course of the trend shown in the graphic.

Source: www.OICA.net; Ernst & Young 2013; Litvinenko (2015); author's calculations.

Unfortunately, no similarly clear-cut statistics are available on the development of the supply industry. It is clear that with the relocation of final assembly to Russia initially the import of components rose substantially.² Many international suppliers maintain long-term relationships with automobile companies and have held back from establishing their own production plants in Russia until market development for the relevant model became clearer. Under pressure to localise production automobile compa-

2 A study on the CIS overall asserts that the »Commonwealth of Independent States ... is marked by a very impressive progression of the far-distance share. Situated in 2000 at an intermediate level of 57%, it goes up to 94.5% in 2012. This sharp increase reflects the fact that carmakers from the »historical core« set up assembly plants in this zone, whose auto parts procurements are essentially provided by far-distant located mega-suppliers« (Frigant und Zumpe 2014: 23). Ditto a statement for 2008: »the value of the market for auto components for the assembly of foreign brand vehicles in Russia in 2008 was 7.18 billion roubles (estimated). Only 10 per cent of this originated from Russian production, while the bulk of it was imported« (GTAI 2010: 20).

nies, for their part, are interested in the arrival (»family reunion«) of international suppliers with whom they maintain globally well-established relations. In this second investment wave the major component producers, such as Magna, Siemens, Bosch and Schäffler, are building up their local affiliates. In individual cases they enter into joint ventures with Russian suppliers, but often they continue to go it alone. The growth in local content is now leading to a crowding-out process also among suppliers. Foreign firms are taking parts of the market away from domestic suppliers. Localisation brings growth to the market here, too, but only with the advance of foreign capital.³

3.2 Survival Strategies of Russian Car Makers

AvtoVaz

The government only exacerbated AvtoVaz's sales crisis with its import substitution intervention. However, it did not want to stand by and watch while the jewel of Soviet industry was finally driven into insolvency and sought a foreign partner. A first attempt to prop up AvtoVaz with foreign investors foundered in 2001 when the US automobile company GM rejected an offer of direct entry, although it was willing to agree to a separate joint venture. GM has since manufactured the new Chevrolet-Lada on a parallel production line in Togliatti.

During the boom years interest in the Russian market grew and Fiat, GM and Renault sought direct entry with AvtoVaz. The French company was awarded the contract and in 2008 came up with a capital contribution of 1 billion USD and acquired a shareholding of 25 per cent. When the global economic crisis hit shortly afterwards AvtoVaz was on the verge of collapse. Lada sales collapsed by 50 per cent to only 350,000 vehicles and over 150,000 were stockpiled.

The government, AvtoVaz's management, the municipal authorities in Samara and Renault wrangled over a rescue package. After heated arguments the parties agreed on a restructuring plan (Renault Press 2010):

3 »Local firms are seemingly caught by the fact that to become a supplier to Volkswagen Group, Renault-Nissan or PSA Peugeot Citroën, a long and expensive process of certification needs to take place. The problem for many Russian vendors is that they lack a strong track record of delivering high quality components in large volumes to existing foreign customers. To gain even a handful of such contracts takes years and requires very deep pockets« (Brooks 2013).



- the government paid a crisis contribution of 1.67 billion euros;
- the provincial government of Samara bore the wage costs of 14,600 employees, who were outsourced to two AvtoVaz affiliates;
- social amenities that had been linked to the company since the Soviet period were transferred to the central and municipal authorities;
- Renault provided, free of charge, technology, machinery and a production platform for its cheap Romanian model the Dacia at a value of 240 million euros.

Renault emerged the winner from this dispute. In light of what followed afterwards the 2009 rescue strategy can be considered a paradigm change.

- The company has been managed on commercial principles since that time and employment policy has been solely the management's concern.⁴ Already in 2009 AvtoVaz axed around 30,000 jobs, primarily in administration; further job cuts have been implemented in the meantime, in smaller increments.
- Renault has assumed the technological lead and is driving modernisation with the preparation of production plans for the B0 platform of the Dacia. This has expanded capacity at AvtoVaz by 350,000 to over 1 million cars a year. Of this production 70 per cent will benefit AvtoVaz and 30 per cent Renault-Nissan, whose own models also roll off the production line.
- Renault has assumed a majority shareholding with its Japanese partner Nissan. The Russian management is appointed under Franco-Japanese control.

A restructuring of interests took place in 2012. The newly established Alliance Rostec Auto (ARA), made up of Renault, Nissan and the Russian state received 74.51 per cent of the share capital. Renault, with a further capital injection of 742 million USD, increased its holding in ARA to 48.20 per cent, while Nissan invested 376 million USD and acquired 17.44 per cent; 36.36 per cent remain with ROSTEC, the collection point for state shareholdings (AvtoVaz Annual Report 2013: 9). The remaining 25.49 per cent held externally to ARA remain free float shares. With the alteration of the ownership structure Renault acquired a majority and was granted the right to occupy eight of the 15 seats on the supervisory board.

4 The government backed the restructuring package, however, by boosting sales of Russian vehicles through a scrappage premium in 2010. Russia was still not a member of the WTO at this time and thus did not violate any WTO trade conditions.



The acquisition of ownership control gave Renault-Nissan the right to appoint top management. Although the Russian state has a veto right it largely steers clear of enterprise management. Business policy is now determined abroad and AvtoVaz has become a regional affiliate of an international company. Integration also concerns purchasing and coordination with suppliers. AvtoVaz is part of the Renault-Nissan Purchasing Organisation (RNPO). By 2016, 80 per cent of purchases are to be effected via RNPO.

The direction that AvtoVaz was set to take was discernible as early as 2014 when the Russian automobile market collapsed again. There were another 14,000 job cuts. In an interview Bo Andersson, the first foreigner in the company's 48 year history to be appointed CEO (on 1 January 2014), set out developments for the coming years:

Productivity was 20 cars per employee per year in 2013. We should double it to 40 by year-end and 60 is our next target.

Interview Bo Anderson in Automotive News Europe, Oct. 7, 2014

AvtoVaz is not Renault-Nissan's only foothold in Russia. Since the late 1990s Renault has had a joint venture with Avtoframos, within the framework of which various models such as the Logan and the Megane are assembled. Nissan has been in St Petersburg since 2009 where its own models, such as the Teano and the X-Trail, roll off the production lines. Taking all the production plants together the aim is to capture 40 per cent of the Russian market. Renault-Nissan seeks to use its expansion strategy on the Russian market to climb from fourth to third largest automobile company in the world.

Russia is becoming a key strategic pillar in a global marketing strategy. In this way Renault-Nissan is going well beyond the commitment of other foreign manufacturers, which to date have planned output in the range of 250,000–350,000. For them the Russian market is less important in the parent company's scheme of things. With the acquisition of Lada and its expansion strategy Renault-Nissan is now trying to raise productivity in the main plant in Russia to the international level.

GAZ

The Gorky Automobile Works has pursued a different path. The first Russian car maker – and long the second Russian producer in terms of volume – struggled after 1990 and never managed to return even close to the pro-



duction figures it used to deliver under the national development plans. In 2000 it produced just 116,000 cars, which dropped to just 39,000 vehicles in 2007. In May 2009, the GAZ management tried to break out of this tail-spin by hooking up with a consortium comprising the Canadian-Austrian component supplier MAGNA International and the major Russian state-owned bank Sberbank. It presented General Motors with a takeover bid for its German affiliate Opel. It was hoped that up to 1 million Opel vehicles could be built for the Russian and foreign markets. In November 2009 GM decided against bringing into being another competitor and rejected the sale of Opel.

GAZ now changed tack completely. Instead of relaunching in a big way via access to foreign technology GAZ got out of manufacturing its own passenger cars completely and instead concentrated on vans. In 2012 it commenced cooperation with Mercedes-Benz at the plant in Nizhny Novgorod, where the Sprinter is assembled. Furthermore, GAZ leased free capacity to VW on license. These models are manufactured using the CKD process; the manufacture of Russian cars is not on the agenda. Although it cannot be ruled out that GAZ will get back into car production, in the current market situation planning is concentrated on the van segment.

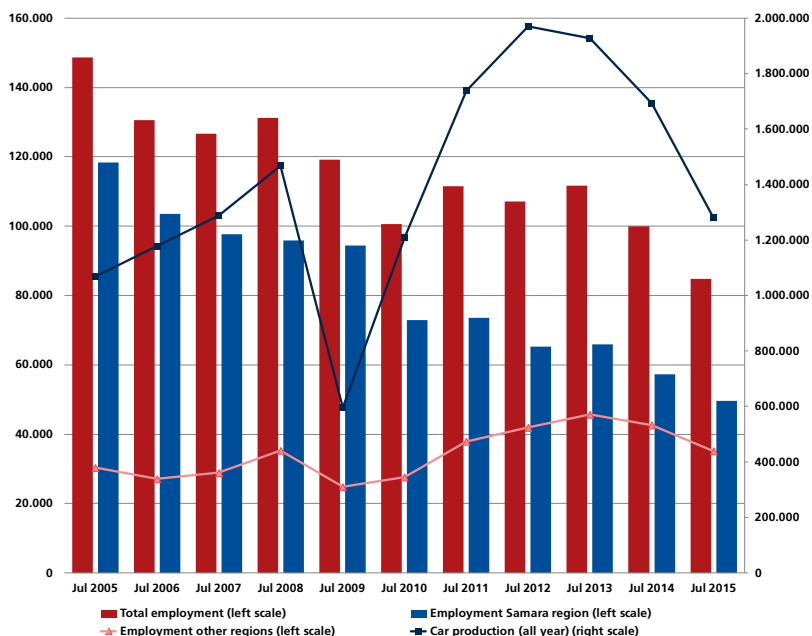
3.3 Employment and Car Production (2005–2015)

The import substitution-induced switch of automobile production from Russian to foreign firms went hand in hand with job cuts and productivity increases. Figure 2 shows the situation of the branch as a whole in the period 2005–2015. Although we have no separate figures for employment development in the different vehicle segments – lorries, vans, cars – lorry manufacturing in Russia is strictly subordinate and does not play much of a role here.

Between 2005 and 2012 – the previous peak year for passenger car production – the Russian market registered production growth from 1,068,000 vehicles to 1,979,000, while total employment fell from 149,000 to 107,000. Productivity during this period rose from 7.17 vehicles per worker to 18.5 or an enormous 158 per cent. This figure is a little too high because the import substitution policy replaces Russian cars with a high local content (80–90 per cent) with foreign models with a local content below 50 per cent, on average. But even if we count only half the calculated productivity increase it is still enormous.



Figure 2: Automotive industry – employment and production, Russia, 2005–2015



Source: www.Oica.net; Spark-Interfax system; author's calculations.

The enormous productivity reserves – the »labour hoarding« familiar from the Soviet Union – can be seen from a look at the production and employment situation in the Samara region. Here we have to do only with AvtoVaz as sole vendor. The job cuts more or less went hand in hand with declining sales, while productivity increases remained marginal overall (Table 2). The high productivity increases in the sector were due almost exclusively to FDI.

4 Into a Crisis, Again

The new crisis came unexpectedly and its magnitude is such as to challenge the very foundations of the automotive industry. It started slowly in 2013, when economic growth fell to a mere 1.3 per cent. This slow growth indicated an exhaustion of the growth factors of earlier years and the beginning of a period of stagnation. Forecast by no one, not even by doom-sayers, the



Table 2: AvtoVaz – Employment and car production, 2005–2015

	Car production	Employment	Cars / Employment
2005	721,492	118,283	6.10
2006	765,627	103,489	7.40
2007	735,897	97,710	7.53
2008	801,563	95,930	8.36
2009	294,737	94,343	3.12
2010	545,767	72,931	7.48
2011	562,347	73,574	7.64
2012	553,232	65,212	8.48
2013	495,013	65,946	7.51
2014	381,964	57,264	6.67
2015	269,100	44,000	6.12

Source: www.Oica.net; Spark-Interfax system; media reports for 2015.

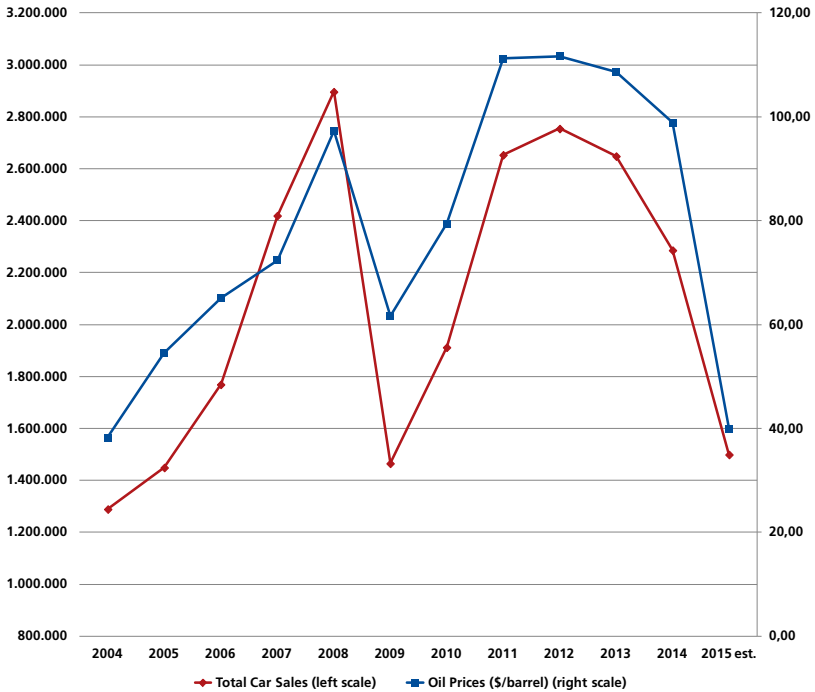
oil price in mid-2014 started its nosedive, gradually pulling down the demand for vehicles. It made clear to everybody once again that the Russian car miracle had been served on the platter of high oil prices and that as the latter fell demand for cars would follow suit (Figure 3).

Some of the shrinking car sales were shifted to imports but it was domestic production that had to bear the brunt. In 2015, sales of domestically produced cars fell to around 1.45 million, 25 per cent below the peak of 2012. In the expectation of increasing sales, total production capacity in the sector had been raised to nearly 3 million cars a year and the sector now suffers from unused capacity of 50 per cent or more.

While at the beginning of the new crisis, hopes were raised that the decline of commodity prices in global markets would be short-lived and would rise again to previous levels, in the second year of low oil prices it became clear that the low commodity price slump is here to stay for some time and car manufacturers must pursue survival strategies.



Figure 3: Car sales and oil prices, Russia, 2004–2015



Source: www.Oica.net; BP 2015.

4.1 Strategies for Survival

Car manufacturers in this demand crisis have to pick from one of three choices:

(i) Cutting costs and waiting for a market rebound

Current annual losses for many foreign car manufacturers are in the range of 100–200 million euros, if not higher. They are all cutting costs by reducing production and staff. This includes reductions in the number of shifts, temporary closures, monetary packages for voluntary termination of employment, short-time working and forced dismissals. Reductions, however, in many cases entail negative economies of scale, which eat up some of the costs saved elsewhere.



Going one step further could include cost cutting by more localisation. The rouble has depreciated substantially since 2014 and relative prices have turned in favour of local purchases. Replacing imported components with local ones could help to save costs, although it could also impact negatively on product quality. New foreign component suppliers are not likely to invest in Russia during a period of crisis and additional components may only be available from Russian suppliers. Calls on the government by VW, PSA and others to extend the running time on local content clauses and thereby reduce pressure to continue localisation during sluggish demand are indicators that going forward with more localisation may not be a favourable option for many.

In the end, this strategy entails waiting for the market to rebound and to be among those who can take advantage of rising demand.

(ii) Withdrawal from Russia

In 2015 GM shut down its factory in St Petersburg and ended the production of Opel cars. By holding on to its joint venture with AvtoVaz in Togliatti, however, it maintains a foothold in the Russian market.

There are good arguments for leaving. Russia signed a special WTO agreement for its automotive industry in 2012 that allows the application of a special import substitution regime only till 2018. Thereafter, customs duties have to be reduced⁵ and local content clauses abolished. The end of this regime will certainly reduce the comparative advantages of maintaining a presence in Russia. Withdrawing investment and supplying the Russian market from abroad and from international locations where productivity is higher is certainly an option most foreign car manufacturers are currently considering.

Withdrawal during the current crisis, however, might be seen by the Russian government as a breach if not of the legal then of the moral terms of the import substitution contract foreign companies signed. If the market subsequently recovers, the government may find ways to punish early withdrawers and prevent them from gaining a stake again.

(iii) Add turnover from exports

The significant depreciation of the Russian currency has reduced local production costs substantially and opened up opportunities for auto-

⁵ Import tariffs for built-up passenger cars in Russia: 2011: 30 per cent; 2012 (WTO entry): 25 per cent; 2015: 22.5 per cent; 2018: 15 per cent.



mobile exports. This reduction, however, applies only to that part of the value chain arising from local production. Companies that have localised rapidly possess an additional option to boost sales in the export sector. However, foreign car manufacturers originally did not select the Russian market as a location for exports. Some maintain production capacities in neighbouring countries and exporting from Russia may entail competing with their own models.

4.2 AvtoVaz – Forward with an Export Strategy or a Return to Employment Policies and Subsidies?

Domestically, the battle is over shares of a shrinking market and here AvtoVaz may appear to be on a winning path. The falling rouble entails punitive costs for importers and, with the exception of the high-priced segments for the rich, who care more for status loss than cost, the market seems to be assured for producers with high local content.

However, as the largest car manufacturer, AvtoVaz has been hardest hit by the crisis. Since 2011, its output has declined continuously, from 578,400 units to a mere 269,100 (2015), bringing its market share down from 22 per cent to 17 per cent. In 2014, its losses amounted to 25.4 billion roubles (686 million USD), rising steeply to 74 billion roubles (1 billion USD) in 2015. Dissatisfied with the financial results, the CEO of state-owned conglomerate ROSTEC, Sergei Chemezov – the main Russian shareholder in AvtoVaz and a close friend of Russian president Putin – announced the dismissal of Bo Andersson, who had taken up the position of AvtoVaz CEO just two years earlier, in March 2016.

The termination of the contract is an indicator of internal battles and the unclear direction of future company policy. Nobody appears to have challenged Andersson's success in bringing to the market new models such as the Vesta and X-ray and in putting »a system in place that made it possible to go from concept car to assembly line production in only 1.5–2 years — the world standard« (Moscow Times, 10 March 2016). Vehicle quality has improved substantially and the current range of models has been certified in accordance with European emissions standards and are intended to be sold in central and eastern Europe, but also in Germany and Austria. Export volume is set to rise from 97,000 (2015) to 150,000–200,000 by the end of 2016 (Russia beyond the Headlines, 29 February 2016).



Opposition to the new management approach stemmed largely from its radical personnel policy: during his two years at the helm, Andersson cut the number of employees from 70,000 to just 44,000 and »he gave walking papers to three company vice presidents and two dozen top managers last year alone« (Moscow Times, 10 March 2016). Above all, by linking AvtoVaz to RNPO (Renault-Nissan Purchasing Organisation) and signing contracts with foreign component producers, he reduced the level of local content and found himself locked into a war with Russian suppliers, many of which belong to United Automotive Technologies, itself a subsidiary of ROSTEC.

The fact that the CEO of ROSTEC and not Renault, the majority owner, announced the dismissal gives cause for speculation about whether Kremlin politics have returned and where the French concern stands. The replacement of the top management may be seen as prioritising social concerns about jobs and localisation interests over prices and quality considerations. This intervention may lead to an early exit for AvtoVaz's new export strategy. AvtoVaz needs a bail-out and while the Russian state may come in with a debt-for-equity swap, the French have to provide new capital. Making a success of exports with a high local content depends on Russian component manufacturers improving quality and productivity. If the Russian state-owned shareholder⁶ has its way and lower quality standards prevail for the sake of employment gains, AvtoVaz's future may be bleak.

Summary

The current sales crisis is the second major existential threat to the Russian automobile sector. Just as AvtoVaz, the pride of the Soviet Union, survived the collapse at the end of the 1990s only through renationalisation, so today the whole branch is in a fight for its life on a market shrunk by half in the absence of oil rents.

What are Russia's prospects as a location for international automobile companies? Russia's domestic market does not have the sheer volume of

6 The Russian Industry and Trade Minister Denis Manturov made clear the expectation of the government when he reminded the new head of AvtoVaz, Renault executive Nicolas Maure – who headed Romanian carmaker Dacia – that the key task for him should be to focus on domestic car part suppliers (Reuters, 15 March 2016).



either China or India and thus does not have the option of imposing an industrial policy on foreign investors with the prospect of high volumes. And the economic crisis only makes its prospects more remote.

Russia is insular both technologically and economically. Manufacturing plants for 100,000–200,000 vehicles – currently operating at barely half capacity – are not suitable for the high development costs of new platforms and models. Production remains oriented primarily towards local sales and does not use the latest technology. Neither political guidelines – for example, emissions limits – nor consumer wishes exert much pressure towards modernisation. Low energy prices also reduce the incentive to introduce fuel-saving innovations. Technical changes looming in the global market, such as the electrification of drivetrains or the development of networked cars, are happening elsewhere and enter Russia only as imports, if at all.

Car makers have to orient their sales strategies to several variables, of which only one parameter is known. The dismantling of trade barriers and the elimination of localisation requirements open up the market and from 2018 will make it more attractive to service Russian demand from abroad. Exchange rates and demand trends are uncertain, but are strongly influenced by crude oil prices and the government's approach to industrial policy. If the crude oil price remains depressed – in the region of 50 USD a barrel or less – the market is unlikely to recover much. Although most foreign car manufacturers can bear to finance Russian losses there is little reason to hold out in view of liberalisation in a few years' time. In light of this a substantial capacity reduction and the withdrawal of some foreign companies from manufacturing in Russia in the coming years are possible.

Renault-Nissan-AvtoVaz has not been swayed by these considerations. The French-Japanese company has invested four to five times as much as other automobile manufacturers. It regards AvtoVaz as a geostrategic pillar that will help it to climb further up the global rankings. With production capacities of over 1 million vehicles and value added of 70 per cent the local commitment is much deeper. If the oil price remains in the doldrums and the government gives the Russian automobile sector an added boost by actively keeping the rouble low then there are good prospects that the plant will export substantially more than the 100,000 vehicles already exported. Renault can already point to the successful transformation of a former socialist manufacturer in Dacia. Rostec, the voice of the Russian state at the shareholders' meeting, designated the



goal as exporting 50 per cent of production in the future. As in Soviet times Russian vehicle production would thus again be dominated by one major plant. But it would not be an independent national plant with a local monopoly, but the regional pillar of a global company whose headquarters are abroad. If, however, the Russian state were to put its stamp on the company once again and prioritise employment policy the export strategy may come to an early end and Renault would have to shelve its plans for AvtoVaz.



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Employment, Labour Relations and Trade Union Strategies in the Brazilian Automotive Sector

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1 Introduction

The automotive industry is one of the most important sectors of the Brazilian economy, accounting for nearly 10 per cent of manufacturing GDP. The industry is characterised by long product cycles that connect the mining sector with many branches of industry, commerce and services.

The automotive sector is also significant with regard to the role of trade unions. Brazil has trade union pluralism. The largest and best organised unions are found in the metalworking sector, in which six national trade union centres operate. Most metalworker trade unions participate actively in public policy decision-making in a number of tripartite forums that bring together workers, government and business to try to reach agreement on industrial and labour policies, including in the automotive industry.

Nevertheless, even though workers are involved in dialogue and negotiation, conflict between capital and labour has escalated. As the number of workers and manufacturing plants in the automotive industry has risen, so has the number of strikes.

In this chapter we look at the interplay between trade union representation and economic development in the automotive industry over the period 2002–2014.



2 Employment and Wages in Brazilian Assembly Plants¹

From 2002 to 2014, the number of workers in assembly plants rose from 78,400 workers to 121,600 (Figure 1). Over this period, 43,200 new jobs were generated. While some years witnessed job losses, overall job growth was 55.1 per cent.

The employment growth was the result of federal government policy intervention. In 2004, it launched a new industrial policy aimed at boosting economic growth.² The automotive industry had stagnated in the period 1996–2003, during which time it reported the manufacture of around 1.6 million auto units a year. New government measures that included concessionary corporate loans and subsidies for consumer loans boosted the auto market. Between 2003 and 2014, annual vehicle production soared from 1.6 million auto units to 3.1 million (Annex 1).

The growth period saw not only an increase in industrial output and employment, but also positive results with regard to wages (Table 1). Between 2002 and 2014, real wages increased by 17.3 per cent. The new economic growth policy was flanked by a new minimum wage policy. From a ridiculously low level³ the government raised the legal minimum wage, year by year, higher than average wages growth, thereby reducing the wage spread and inequality within the wage earner segment. In 2002, the real average wage was 23.5 times higher than the official minimum wage and 3.4 times higher than the minimum wage deemed appropriate to meet basic needs (see footnote 3), while in 2014 these ratios were 7.6 and 1.9.

Employment conditions in assembly plants are above the national average. One indicator of decent working conditions in vehicle manufacturing is the surprisingly low annual labour turnover. Whereas for the metalwork-

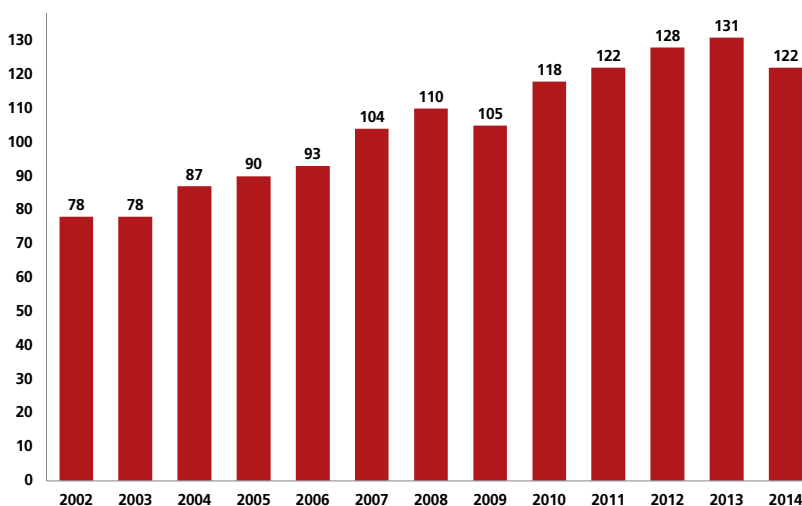
1 The automotive labour market data in this chapter were compiled from the databases of the Ministry of Labour and Employment (MTE), published in the Annual Report of Social Information (RAIS) and the General Record of Employed and Unemployed Workers (CAGED).

2 In 2004, the federal government launched its Industrial, Technological and Foreign Trade Policy (PITCE), aiming to strengthen and expand Brazil's industrial base by corporate innovation. But the cornerstones of this policy were already under discussion.

3 The statutory minimum wage is much lower than the subsistence minimum, as calculated by DIEESE. The subsistence minimum takes into consideration the constitutional precept that sets forth that the minimum wage must meet the basic needs of a worker and their family and must be worth the same all over the country. It uses as its legal basis Decree Law No. 399, which establishes that food expenditure by an adult worker shall not be lower than the cost of the Basic Food Basket. A household considered for this calculation is composed of two adults and two children who, hypothetically, consume as much as one adult.



Figure 1: Assembly plant workers in Brazil, 2002–2014 ('000)



Source: Ministério do Trabalho e Emprego, Relação Anual de Informações Sociais (Ministry of Labour and Employment, Annual Report of Social Information)

Table 1: Real wages in vehicle assembly and national minimum wage, 2002–2014

	Real average wage, vehicle assembly (R\$)	Minimum wage (Dec.; R\$)	Real average wage / Minimum wage
2002	4,704.02	200.00	23.5
2003	4,772.47	240.00	19.9
2004	5,032.59	260.00	19.4
2005	5,056.37	300.00	16.9
2006	5,444.10	350.00	15.6
2007	5,397.99	380.00	14.2
2008	5,591.15	415.00	13.5
2009	5,704.96	465.00	12.3
2010	5,725.20	510.00	11.2
2011	5,831.18	545.00	10.7
2012	5,623.55	622.00	9.0
2013	5,567.19	678.00	8.2
2014	5,519.29	724.00	7.6

Source: Same as Figure 1 above.



ing sector as a whole 43 per cent of its employees are either newly hired or leave the workplace,⁴ the figure is a mere 11.1 per cent in the automotive industry (2014).

The low labour turnover is related to the fact that, unlike most other sectors of the Brazilian economy, the auto sector is entirely formal, all workers are employed on the basis of written work contracts and protected by minimum standards (working week,⁵ overtime pay, vacations, social security contributions and so on) set by labour and social security legislation. Furthermore, assembly plant workers are also covered by local collective bargaining agreements that top up statutory provisions.

Additional factors that contribute to the low annual labour turnover and to decent working conditions include the application of job guarantee schemes during crises or in periods of fluctuating production and the relatively high number of skilled tasks that give workers a better bargaining position and prevent employers from easily replacing fired workers.

2 Work and Trade Union Relations

Today the Brazilian automotive sector consists of 45 plants where 27 automobile, pickup, truck and bus brands are manufactured. Automobile manufacturing is spread all over the territory in 36 municipalities.

The location of plants shows a concentration in the south-east (55.6 per cent), followed by the south (26.7 per cent), the north-east (11.1 per cent), the mid-west (4.4 per cent) and the north (2.2 per cent) (Annex 2).

The Brazilian trade union structure is based on the so-called union »unicity« principle, whereby only one union entity can represent workers in a given area, while a union's territorial base may comprise one or more municipalities. In light of this principle, workers in a single plant are represented by one union. In all, there are 29 unions of the metalworking sector that represent the workers of the aforementioned 45 manufacturing sites of the automotive industry.

Each city union can join a national trade union centre. CUT claims the largest membership in the automotive sector, with 42.2 per cent of unions

4 Excluding employees who died or retired for reasons of age.

5 By late 2014, 70.8 per cent of the 121,642 assembly plant workers were on a full working week of 40 hours, while 29.2 per cent had working weeks of over 40 hours, up to the legal limit of 44 weekly hours (Source: Ministério do Trabalho e Emprego, *Relação Anual de Informações Sociais* (Ministry of Labour and Employment, Annual Report of Social Information)).



Table 2: National trade union centres in the automotive industry (2015)

National union centre	Manufacturing plants	Affiliated unions	Distribution of members
CUT	19	42.2 %	33.5%
Força Sindical	13	28.9 %	29.3%
CTB	5	11.1 %	28.3%
INTERSINDICAL	5	11.1 %	4.7%
CSP-CONLUTAS	2	4.4 %	4.3%
UGT	1	2.2 %	?
Total	45	100.0	100.0

Source: DIEESE and CNM-CUT (2015).

affiliated, followed by Força Sindical, with 28.9 per cent (Table 2). In all, there are six national centres organising in the sector.

As of 2014 assembly plant workers were distributed across national union centres as follows: the CUT accounted for 33.5 per cent of the total, followed by Força Sindical with 29.3 per cent, CTB with 28.3 per cent, INTERSINDICAL with 4.7 per cent and CSP-CONLUTAS with 4.3 per cent.

On analysing the distribution of the national trade union central bodies across regions in Brazil, we notice that the CUT concentrates most of the workers in the south-east, with 46.9 per cent, and 100 per cent of those in the north, while CTB has the largest share of north-east region workers, with 61.1 per cent, and Força Sindical has 49.2 per cent of all workers in the south and 100 per cent of those in the mid-west (Annex 3).

Four metalworkers' trade unions concentrated 58.9 per cent of all workers working in the auto assembly companies operating in Brazil, two from the south-east and two from the southern region, with the ABC Metalworkers' Union (SP), affiliated with the CUT, accounting for 23.1 per cent of all auto assembly workers; the Betim Metalworkers' Union (MG), affiliated with CTB and with a 13.9 per cent share; the Caxias do Sul Metalworkers' Union (RS), also a CTB affiliated organisation, with 12.0 per cent; and the Curitiba Metalworkers Union (PR), affiliated with Força Sindical, with 9.8 per cent.

Concentration by municipality reveals that nearly 80 per cent of all workers are in 10 municipalities: São Bernardo do Campo/SP (25.6 per cent), Betim/MG (15.4 per cent), São José dos Pinhais/PR (7.6 per cent), São Caetano do Sul/SP (7.4 per cent), Taubaté/SP (5.3 per cent), São José dos



Campos/SP (4.3 per cent), Camaçari/BA (3.7 per cent), Curitiba/PR (3.4 per cent), Gravataí/RS (3.2 per cent) and Sumaré/SP (2.8 per cent).

A larger number of workers – about 25 per cent of the total – are in the municipality of São Bernardo do Campo, one of the first to receive automotive investments in Brazil and the one holding the most companies, with five big names (Volkswagen, Mercedes-Benz, Ford, Scania and Toyota) (Annex 4).

2.1 Trade Unions and Public Policies

In recent times, Brazil has developed a culture of public discussion and negotiation of industrial policy principles in tripartite rounds before final adoption. The participation of trade unions in public policymaking for the automotive sector goes back to the 1990s and antedates the election victory of Lula in 2002. In January 1993, under the auspices of the newly founded tripartite Automotive Sectoral Chamber, a historic deal was agreed.⁶

The agreement included a commitment to generate 91,000 new jobs and reduce auto prices by 10–15 per cent. Existing jobs were subject to a guarantee and the purchasing power of wages was to be maintained through automatic monthly rises indexed to inflation.⁷ The tripartite agreement was in place for two and a half years.

The success of the first agreement opened the door for union participation in later negotiations on the restructuring of the auto industry. Building on these experiences, in 2002 the metalworkers' unions, in a joint proposal, presented then presidential candidate Luiz Inácio Lula da Silva with the union's »Seven-Goal Plan for Brazil's Automotive Sector«, which was incorporated into his campaign platform and after his inauguration became part of debates on restructuring the industry.

The Seven-Goal Plan proposed the following guidelines for the sector:

- Goal 1: Setting up an Automotive Sector Chamber;
- Goal 2: Enlarging the domestic auto market and production;
- Goal 3: Improving the sector's exports and trade balance surplus;
- Goal 4: Renewing and recycling the national vehicle fleet;

6 The full agreement is available at <http://www.smabc.org.br/dieese>.

7 The consumer price index (INPC) has been measured by Brazil's national statistics office (IBGE) since September 1979. It is calculated on the basis of regional consumer price indices and aims to provide retail market price changes, thus showing cost of living increases or decreases.



- Goal 5: Supporting national engineering in designing and developing vehicles and components;
- Goal 6: Fostering production and sales of ethanol-powered vehicles;
- Goal 7: Implementing the sector's National Collective Bargaining and Labour Relations Agreement.

Lula da Silva's presidency greatly encouraged civil society participation in politics. On his first day in office, he established the Brazilian Council for Economic and Social Development (CDES).⁸ In the following years, the metalworkers unions, together with other unions, participated in the debates on two key industrial policies: the Industrial, Technological and Foreign Trade Policy (the PITCE, 2003–2007) and the Productive Development Policy (the PDP, 2008–2010).

The metalworkers unions also participated in the tripartite negotiations on fundamental socio-economic issues, which were successful after intense mobilisation and culminated in important decisions of the Lula government intended to boost the Brazilian domestic market, such as the minimum wage appreciation policy, the adoption of universal poverty reduction programmes and credit extension programmes.

Throughout the first term of office of President Dilma, the metalworkers unions were present in the various Sectoral Councils that formulated details of the new industrial policy, adopted in 2011 under the name *Plano Brasil Maior* (Greater Brazil Plan).⁹ In the Automotive Sectoral Council metalworkers unions were party to the tripartite negotiations on a new national automotive regime, which was adopted by the federal government in 2012 under the name of Inovar-Auto (*Programa de Incentivo à Inovação Tecnológica e Adensamento da Cadeia Produtiva de Veículos Automotores*) to push for technological innovation and productive chain clustering.

Inovar-Auto is a tax programme that provides benefits to companies if they increase manufacturing and engineering infrastructure activities, directly or by third parties; invest in research and development, as well

8 CDES became an advisory body for policy issues and was made up of representatives of civil society, including employers and unions but also organisations representing women, indigenous peoples, churches and the disabled.

9 The »Greater Brazil Plan« (*Plano Brasil Maior*), was the federal government's industrial, technological and foreign trade policy from 2011 through 2014. The plan's challenges were: (i) sustaining inclusive economic growth in an adverse economic context and (ii) coming out of the international crisis with a focus on innovation and the productive clustering of the Brazilian industrial park. The Plan adopted important measures that reduced investment- and export-related taxation, fostered credit and improved the innovation regulatory framework, strengthened trade protection, broadened fiscal incentives, eased funding for the purpose of increasing national value added and the competitiveness of production chains.



as in quality improvements in the supply chain, basic industrial technology and development; and adhere to the Brazilian Vehicle Labelling Programme (PBEV) of the industrial standards agency the National Institute of Metrology, Quality and Technology (INMETRO). Moreover, it demands an increase in the local content share in vehicle manufacturing.

Comparing the proposals of the unions and the content of Inovar-Auto, it becomes clear that union participation in formulating the new policy was not merely symbolic but substantial.

Proposals from trade unions	Content of Inovar-Auto
1 – Creation of the Automotive Sectoral Chamber	Creation of the Auto Industry Sectoral Council as the negotiating arena for sectoral policies
2 – Setting up a national vehicle recycling programme	Consensus was reached on a proposal to discuss a national recycling programme with the various state agencies linked to this debate
3 – Strengthening of national auto production	Proposal incorporated as one of the guidelines
4 – Stimulus for vehicles designed and developed by Brazilian engineering	Proposal to develop stimulus mechanisms to foster national auto engineering
5 – Change in the methodology for calculating national content in the auto sector	The entire local-content measurement system was discussed and changed, given the complexities of the production system
6 – Creation of the concept of national technological content	Inovar-Auto created mechanisms to foster investments by auto makers in R&D in Brazil
7 – Review of the Brazil-Mexico auto agreement	The agreement was reviewed to maintain import/export quotas and incorporate rules of origin
8 – Creation of differentiated rules for consumer credit extension for the purchase of new and used vehicles	From this discussion, the government moved forward by resorting to public banks to correct distortions in the extension of auto credit
9 – Introducing a social code of conduct for auto makers	Still being debated, strongly opposed by auto makers
10 – Development of auto production chain clusters	The automotive regime kept this proposal as one of its guidelines and a wide array of initiatives have been drafted to that end
11 – Creation of the national machine tool cluster	Still being debated, with significant breakthroughs in sector's corporate reorganisation
12 – Creation of the auto chain capacity- and skills-building programme	In response to this proposal, a specific form of vocational training was created to meet manufacturing industry's needs under the auspices of the Federal Government's National Programme for Access to Technical Education and Employment (PRONATEC)
13 – Compensating for tax breaks and special funding by providing labour-related benefits	Building on this discussion and fuelled by other demands of the labour movement, this claim changed the requirement criteria of the National Economic and Social Development Bank (BNDES)

Source: Prepared by DIEESE.



3 Trade Unions in the Auto Sector: Between Conflict and Negotiation

The history of the auto sector trade unions is intertwined with the country's struggle against the military dictatorship and for redemocratisation in the late 1970s and early 1980s. In important phases strikes occurred even when legally prohibited. Certainly, the recent period is most distinct, but strikes in vehicle manufacturing plants are still widely used as a conflict resolution tool.

Over the past ten years or so, strikes in auto assembly plants rose substantially, from nine in 2004 to 15 in 2013. This growth was not steady, however, and depends on the criterion chosen (for example, number of strikes or length), with 2010, 2011 and 2015 experiencing the highest strike activity (Table 3).

Table 3: Strikes in the auto industry, Brazil, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Strikes	9	8	7	6	6	7	14	10	11	15
Strike length (hours)	210	339	144	177	42	365	390	648	372	405
Average length (hours)	23.3	42.4	20.6	29.5	7	52.1	27.9	64.8	33.8	27

Source: Dieese, Trade Union Information System (SAIS).

Strikes are rarely based on a single demand but link various unions' and workers' claims together. Strike demands fall into the following categories: wages (19.5 per cent); profit-sharing schemes (11.5 per cent); wage bonuses (7.5 per cent); fewer working hours (5.3 per cent); dismissals (4.9 per cent); food vouchers and wage floor (4.4 per cent); and rejection of flexible working hours (2.7 per cent).

Overall, the use of the strike weapon pays off. According to data selected by DIESSE from a sample of cases, strikers' demands were met in 93.5 per cent of all incidences. Of this total, in 17.4 per cent of the cases demands were fully met, while in 76.1 per cent demands were only partially accepted (Table 4).



Table 4: Outcome of auto plant strikes, 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Demands met	2	2	3	3	2	6	7	7	5	6
Fully	0	0	0	0	0	0	2	1	2	3
Partially	2	2	3	3	2	6	5	6	3	3
Demands rejected	0	0	0	0	0	0	0	0	0	0
Continued bargaining process	0	1	1	1	1	0	0	1	1	0
Total	2	3	3	4	2	6	7	7	6	6

Source: Dieese, Trade Union Information System (SAIS).

4 Final Considerations

The automotive sector in Brazil has gone through major transformations over the past 15 years, with markets growing, production and the number of workers increasing and, above all, with the arrival of new brands and a rising number of industrial plants.

Under the unicity principle, Brazilian trade unions are embedded in a system of trade union pluralism, in which unions with an urban monopoly are affiliated to different central unions. Despite this pluralism, the majority of national trade union centres under the present configuration have successfully managed to link their struggles for improved working conditions in the automotive sector and able to come up with joint positions.

The participation of a majority of the trade unions representing assembly plant workers grew in public policymaking, thus enabling these unions to participate in several tripartite arenas and to influence sectoral policies, especially the current automotive regime, the *Inovar-Auto*. However, this form of political participation has not replaced capital/labour conflict, which can be measured by an increase in the number of strikes. Participation and conflict articulation pose a more complex setting for the Brazilian metalworking labour movement, particularly in times of economic depression, as experienced today by Brazil.

The automotive industry is spread across every region of a country of continental dimensions, embedded in different corporate cultures and producing for a market that is increasingly more competitive and globalised and poses huge challenges to today's metalworking labour movement.



The quest for unity in action that allows gains from one producing region to be extended to other regions is one of the unions' biggest challenges.

The struggle for equality of rights and wages in Brazil is the first step toward a broader-scale contest, in which Brazilian workers are linked to other workers in globally operating multinational companies. Coordination between the different unions, plus their efforts to overcome their political differences, will be essential in this struggle.

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Annexes

Annex 1: Total auto production in Brazil 1996/2014

Year	Units	Year	Units
1996	1,623,135	2005	2,357,172
1997	1,861,201	2006	2,403,680
1998	1,421,860	2007	2,825,276
1999	1,289,977	2008	3,050,631
2000	1,605,848	2009	3,076,000
2001	1,674,522	2010	3,382,143
2002	1,633,790	2011	3,417,782
2003	1,684,715	2012	3,402,963
2004	2,124,177	2013	3,712,736

Source: Anfavea.



Annex 2: Auto, truck and bus plants by region and state, Brazil, 2015

Region / State	Number of plants	% of total
Southeast	25	55.6
São Paulo	19	42.2
Minas Gerais	3	6.7
Rio de Janeiro	3	6.7
South	11	24.4
Rio Grande do South	5	11.1
Paraná	4	8.9
Santa Catarina	3	6.7
Northeast	5	11.1
Pernambuco	2	4.4
Bahia	2	4.4
Ceará	1	2.2
Centre West	2	4.4
Goiás	2	4.4
North	1	2.2
Amazonas	1	2.2
Total	45	100.0

Source: DIEESE.



Annex 3: Distribution of auto, truck and bus manufacturing workers by Trade Union National Centre, Brazil, 2014

Region/national union centre	Participation of national union centre by region (%)
Southeast	100.0
CUT	46.9
CTB	21.5
Força Sindical	17.8
INTERSINDICAL	7.2
CSP-CONLUTAS	6.6
Northeast	100.0
CTB	61.1
CUT	32.1
Força Sindical	6.8
South	100.0
Força Sindical	49.2
CTB	46.0
CUT	4.8
UGT	0.0
Centre West	100.0
Força Sindical	100.0
North	100.0
CUT	100.0

Source: RAIS 2013 and CAGED, January/December 2014 – MTE.
Prepared by DIEESE.



Annex 4: Car, truck and bus manufacturing plants in Brazil, 2015

	Plant (assembly)	Year com- menced operations	Municipality	State	Trade union	Trade union confederation
1	Marcopolo	1949	Caxias do Sul	RS	STIM* Caxias do South	CTB
2	Mercedes-Benz	1952	Sao Bernardo do Campo	SP	STIM ABC	CUT
3	Volkswagen	1956	Sao Bernardo do Campo	SP	STIM ABC	CUT
4	General Motors	1959	Sao Jose dos Campos	SP	STIM São José dos Campos	CSP-CONLUTAS
5	Toyota	1962	Sao Bernardo do Campo	SP	STIM ABC	CUT
6	Scania	1962	Sao Bernardo do Campo	SP	STIM ABC	CUT
7	Ford	1968	Sao Bernardo do Campo	SP	STIM ABC	CUT
8	General Motors	1968	Sao Caetano do Sul	SP	STIM São Caetano do Sul	Força Sindical
9	Ford	1974	Taubate	SP	STIM Taubaté	CUT
10	Fiat	1976	Betim	MG	STIM Betim	CTB
11	Volkswagen	1976	Taubate	SP	STIM Taubaté	CUT
12	Mercedes-Benz	1979	Campinas	SP	STIM Campi- nas	INTERSINDICAL
13	Volvo	1980	Curitiba	PR	STIM Curitiba	Força Sindical
14	Agrale	1990	Caxias do South	RS	STIM Caxias do South	CTB
15	Man	1996	Resende	RJ	STIM Sul Fluminense	Força Sindical
16	Volkswagen	1996	Sao Carlos	SP	STIM São Carlos	CUT
17	Troller (Ford)	1997	Horizonte	CE	STIM Acarape and region	Força Sindical
18	Honda	1997	Sumare	SP	STIM Campi- nas	INTERSINDICAL
19	Toyota	1998	Indaiatuba	SP	STIM Campi- nas	INTERSINDICAL
20	Renault	1998	Sao Jose dos Pinhais	PR	STIM Curitiba	Força Sindical
21	Mitsubishi	1998	Catalao	GO	STIM Catalão	Força Sindical
22	Mercedes-Benz	1999	Juiz de Fora	MG	STIM Juiz de Fora	CUT



23	Volkswagen	1999	Sao Jose dos Pinhais	PR	STIM Curitiba	Força Sindical
24	Iveco	2000	Sete Lagoas	MG	STIM Sete Lagoas	Força Sindical
25	General Motors	2000	Gravatá	RS	STIM Gravatá	Força Sindical
26	Ford	2001	Camacari	BA	STIM Camaçari	CTB
27	Peugeot	2001	Porto Real	RJ	STIM Sul Fluminense	Força Sindical
28	Bramont (Mahindra vehicles)	2007	Manaus	AM	STIM Amazonas	CUT
29	Hyundai CAO	2007	Anápolis	GO	STIM Anápolis	Força Sindical
30	Honda	2010	Jaboatão dos Guararapes	PE	STIM Pernambuco	CUT
31	Hyundai	2012	Piracicaba	SP	STIM Saltilho	Força Sindical
32	Toyota	2012	Sorocaba	SP	STIM de Sorocaba	CUT
33	DAF	2013	Ponta Grossa	PR	STIM Ponta Grossa	CUT
34	General Motors	2013	Joinville	SC	STIM Joinville	CUT
35	Internacional	2013	Canoas	RS	STIM Canoas	CUT
36	Fiat	2014	Goiana	PE	STIM Pernambuco	CUT
37	Nissan	2014	Resende	RJ	STIM Sul Fluminense	Força Sindical
38	Chery	2014	Jacarei	SP	STIM São José dos Campos	CSP-CONLUTAS
39	BMW	2014	Araquari	SC	STIM Mecanicos Joinville	CUT
40	JAC Motors	2016	Camacari	BA	STIM Camaçari	CTB
41	Mercedes-Benz	2016	Iracemópolis	SP	STIM Limeira	INTERSINDICAL
42	Honda	2016	Itirapina	SP	STIM Limeira	INTERSINDICAL
43	Toyota	2016	Porto Feliz	SP	STIM Itu	CUT
44	Sinotruk	2016	Lages	SC	STIM Lages	UGT
45	Foton	2016	Guaíba	RS	STIM Porto Alegre	CUT

Note: * STIM = Metalworkers' trade union.

Source: Prepared by DIEESE.



Employment and Trade Union Policies in the Auto Industry in Mexico

Alex Covarrubias V. and Alfonso Bouzas Ortiz¹

Introduction

The growth of the auto industry in the Mexican economy is unparalleled and one of the most dynamic worldwide. Today, all major automotive producers have invested in local production facilities and see their investment as of strategic importance for their global operations.

The automotive industry has become Mexico's primary source of foreign currency. In 2014, it obtained more foreign exchange from it than from oil, tourism and remittances put together. It has also become the number one generator of jobs in manufacturing. Whereas the overall economy has shown a poor performance in recent decades, with worker wages plummeting, automotive manufacturing has been beneficial with regard to the generation of skilled jobs and decent remuneration.

One of the great paradoxes of the growth of the automotive sector, however, has been the fact that, beyond wage increases for skilled labour, the general wage level in the industry has been kept down. Analysing the reason for this is the main purpose of this chapter. We will show that the wage bargaining system has been distorted by state intervention, which includes infringements of the law and labour standards, as well as extremely fragmented trade unions, which have been co-opted by powerful groups intent on perverting their role. This includes the signing of protection contracts, a novelty unique to Mexico, to fix wages behind workers' backs and without their consent even before a new factory opens.

1 The authors would like to thank Inés González, Trade Union Dialogue Coordinator of the Friedrich Ebert Foundation in Mexico, for her collaboration in the research process, as well as the research assistance provided by Santos Tapia Madrid, Germán Reyes Gaytán and Óscar Alan Ramírez Osorio.



The chapter is divided into five sections. Section 1 gives an overview of the importance of the automotive industry and describes the geographical pattern of automotive investment. Section 2 focuses on the paradox of rising employment and investment while wages remain low. Section 3 tries to explain the dissonance between growing production and low wages by looking at the distinctive features of trade unions and the prevailing labour relations. Section 4 delves more deeply into the characteristics of the labour relations system, its regulations and institutions. It describes the behaviour of its stakeholders (state, companies and unions) and notes that, with their acquiescence, wage caps are established and protection contracts are signed, even though this infringes the law, to keep wages low. Section 5 concludes.

1 Automotive Manufacturing and the Labour Market

Mexico has become one of the most dynamic pillars of the global automotive industry. In 2014, automobile manufacturing reached 3.2 million units, 76 per cent up on 12 years earlier. Mexico is now the leading producer in Latin America and number seven in the global rankings. The country is the fourth largest exporter worldwide, and number two in exporting to the United States.² Mexico is now the fifth producer and fifth exporter of auto parts and accessories worldwide. Adding automobiles, parts and accessories, Mexico has become the main US supplier.

With its strong focus on exports, the automotive industry is a key earner of foreign exchange. In 2013, the sector's exports were responsible for 23.5 per cent of Mexico's foreign currency earnings. In 2014, it obtained around 90 billion dollars, surpassing the sector's imports by 47.5 billion.³

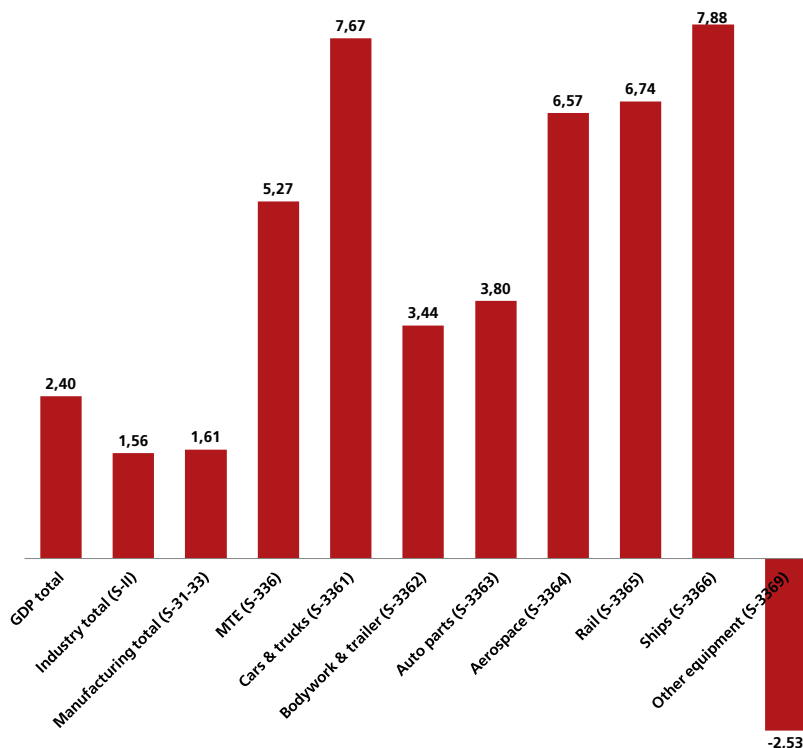
Automotive manufacturing is one of the few drivers of the Mexican economy. During the period 2000–2014 GDP grew at an annual rate of 2.4 per cent, with manufacturing lagging behind at 1.6 per cent (Figure 1). In stark contrast, the automotive sector moved ahead with an annual growth rate of almost 8 per cent.

2 In 2014, Mexico surpassed Brazil as the seventh worldwide producer and leading producer in Latin America. Likewise, Mexico surpassed Japan as the first exporter to the US market, with 1,875,575 automobiles versus 1,627,296 Japanese automobiles. See OICA (<http://www.oica.net/>) and AMIA (<http://www.amia.com.mx/>).

3 <http://eleconomista.com.mx/industrias/2015/01/12/industria-automotriz-supero-petroleo-como-generator-divisas-amia>. In June 2015, the surplus increased by 26.54 billion. See AMIA.



Figure 1: GDP and manufacturing branches: average growth rates 2000–2014 (%)



Note: MTE – manufacturing transport equipment.

Source: System of National Accounts, INEGI (2014).

Automotive manufacturing has become a key source for new jobs. Since the global financial crisis of 2008 10 new vehicle assembly plants have been established. Assembling of cars and trucks provided employment to 74,000 persons in 2014, up by 47 per cent from 2007. Whereas assembling is capital intensive, far more jobs are available in the production of vehicle components. The supply sector is made up of some 2,500 companies, structured from tier 1 to tier 4, depending on whether they supply assemblers directly (tier 1) or are further down the automotive value chain and provide supplies to other suppliers for further processing.⁴ In 2014 the

4 ProMéxico conservatively estimates that there are about 2,550 auto parts companies distributed in the different tiers: tier 1 has 511 companies, tier 2 has 725 and tiers 3 and 4 together have 1,320. Based on data from the last economic census, INEGI (2014) reported that there were 2,811 economic units in the MAI up to 2008. See: <https://www.promexico.gob.mx>.



Table 1: Employment in selected manufacturing sectors in Mexico 2007–2014*

	2007	2010	2013	2014	Growth 2007–2014
Cars & trucks	50,147	53,634	61,355	73,716	47.0 %
Bodies & trailers	12,838	10,444	11,501	11,744	–8.5 %
Parts f. motor vehicles	435,905	404,318	569,455	611,321	40.2 %
Automotive sector (all)	498,890	468,396	642,311	696,781	39.7 %
Food (all)	628,493	633,088	644,876	647,799	3.1 %
Total manufacturing	3,276,595	3,112,532	3,302,499	3,415,118	4.2 %

Note: * Data as of December each year.

Source: INEGI monthly survey of manufacturing industry

component sector employed some 611,000 persons, up by 40 per cent from 2007 (Table 1). The transport equipment subsector during these years has become the main employer in the manufacturing industry, surpassing the food industry.

2 The Great Decoupling of Wages

Economic growth in Mexico over recent decades has been modest, fluctuating between negative and low positive changes. In most years, the repercussions for workers' incomes were severe. A statutory minimum wage was supposed to provide a wage floor but between 1976 – when it stood highest – and 2013, in most years it did not keep up with consumer price increases. During the period as a whole, its purchasing power fell 72.4 per cent (Garavito 2013). As wages are often set at multiples of the minimum wage and changes strongly affect the mid-to-lower tail of the wage distribution, cuts in the minimum wage pulled the general wage level downwards and at the same time, increased the wage spread.

Even though the automotive sector has been a booming industry, with high increases in output and employment, it has shown the same tendency as the rest of the economy when it comes to wages. The deterioration of auto workers' wages can be summarised as follows (Covarrubias 2014):



- wage remuneration as a share of gross value added has been decreasing since 2006, falling from 30 per cent to 14.3 per cent,⁵ implying a large income transfer to gross profits;
- between 2008 and 2012, average compensation (wages plus benefits) for automobile workers (waged workers and employees) per hour dropped from 8.69 to 7.8 USD; the 10.3 per cent decrease is even greater than the decrease in compensation in manufacturing industry as a whole;
- remuneration (wages only) of workers on the production line – that is, excluding white-collar employees and managers – fell from 3.95 to 3.6 USD between 2007 and 2013;⁶
- labour costs in Mexico's automotive industry are the lowest among the twenty countries – both mature and emerging economies – that produce most automobiles worldwide.

Pressure on wages continued in 2014. A study of collective agreements at 19 assembly plants towards the end of 2014 found evidence of a further fall in wages (Table 2). Workers were then earning an average of 308 pesos a day, or 38.5 pesos an hour. At the official exchange rate in December 2014 (13.15 peso/1 USD), that makes 2.9 USD an hour. In other words, automobile workers' wages decreased by 1 USD an hour between the end of 2013 and the end of 2014.

Wages in parts manufacturing are lower than in vehicle assembling. Using the same format and calculating average daily wages from information available from collective agreements, the average daily wage paid by tier 1 suppliers was 230 pesos (Table 3). The wage gap in relation to assembly is thus 25 per cent.

The wage spread in the supplier industry is more marked than in assembling. Whereas in assembling the highest paying company outpays the lowest by a factor of 2.13 – that is, it pays roughly double – in parts production the ratio is 2.56:1. This is largely due to a single company (Hitachi) paying far more than the others. Otherwise, the wage spread in parts manufacturing is similar to that in assembling.

Overall, the figures confirm huge wage differentials between companies and sectors. As wage fixing takes place at plant level, there is not even wage

5 Data from INEGI, most recently from 2012. INEGI (2014).

6 Benefits of workers in the manufacturing sector in Mexico typically represent one-third of their wages, on average. Based on this estimate, labour costs – wages plus benefits – decreased from 5.27 USD in 2007 to 4.8 USD in 2013.



Table 2: Wages in the automotive industry (assembly) according to collective agreements (2012–2014)

Company	Average daily wage (pesos)	Average hourly wage (pesos)	Average hourly wage (USD)*
Nissan CIVAC (2014)	441.51	55.18	4.19
VW Puebla (2014)	418.85	52.35	3.98
Chrysler Saltillo (2014)	357.48	44.68	3.39
Chrysler Saltillo Van (2014)	357.48	44.68	3.39
Chrysler R. A. (2014)	357.48	44.68	3.39
GM Toluca (2014)	353.91	44.23	3.36
Ford HMO (2014)	336.08	42.01	3.19
Audi SJ Chiapa Puebla (2014)	334.37	41.79	3.17
Toyota BC (2014)	328.36	41.04	3.12
Ford Cuautitlan (2014)	319.36	39.92	3.03
Nissan Aguascalientes (2014)	299.45	37.43	2.84
GM Ramos Arispe (2014)	272.94	34.11	2.59
Nissan Ags. Plant II (2013)	259.28	32.41	2.46
Honda El Salto (2014)	245.78	30.72	2.33
GM San Luis Potosi (2014)	234.79	29.34	2.23
BMW San Luis P. (2014-17)	213.75	26.71	2.03
Honda Guanajuato (2014)	213.03	26.62	2.02
Mazda Guanajuato (2014)	207.05	25.88	1.96
Total average	308.39	38.54	2.93

Note: Calculated at the official exchange rate of 13.15 pesos/USD prevailing in December 2014.
Source: Created by the authors based on collective agreements 2012–2014.



Table 3: Daily average wages in auto component manufacturing, tier 1 suppliers , 2014–2015 (pesos)

Company	Collective agreement (year)	Central Region	Puebla Region	Bajío Region	Northern Border	Average daily wage
Hitachi	2015	375.60				375.60
Benteler	2014		364.82		240.24	302.56
Bosch	2015	298.25				298.25
Metalsa	2014–2015			272.70	282.45	279.20
Condumex	2015	279.20				279.20
Nemak	2015				262.05	262.05
Jatco	2015			251.27		251.27
Federal Mogul	2014–2015	219.73	276.03			247.88
Calsonic Kansei	2015			247.88		247.88
Flex and Gate	2014			238.55	188.65	213.60
Faurecia	2014–2015		213.97	211.35	207.75	211.02
Lear	2014–2015		242.57	197.09	220.91	220.19
HB PO	2015	199.75				199.75
Valeo	2015			193.45		193.45
Magna	2015	208.86		181.03		194.95
Denso	2014–2015			168.00	210.86	189.43
Antolini	2014–2015		167.67	173.96	173.96	171.86
Aisin	2014				163.79	163.79
Hyundai Dymos	2015				156.58	156.58
Autoliv	2014–2015	156.35			136.88	146.62
Average		247.82	253.01	213.53	204.01	230.26

Source: Compiled by the authors from collective agreements.



uniformity within companies. Indeed, pay in a single company may differ by between 10 and 25 per cent, depending on the location of plants.

In terms of regions, Puebla and the Central Region pay higher wages, while Bajío and the northern border regions lag behind by 20 per cent, or so.

3 Rising Productivity and Low Wages Explaining the Great Dissonance

3.1 Unionism and Labour Relations in Mexico under PRI corporatism

During the 70 years of Partido Revolucionario Institucional (PRI – Institutional Revolutionary Party) rule, trade unionism in Mexico can be characterised as a »strategic alliance with the state« and corporatism. The political authorities created union structures and installed the leadership as they saw fit in order to control and influence the workers' movement.

The evolution of corporatism in Mexico has had three main characteristics: (i) the creation of dominant, compulsory and non-competitive organisational structures to integrate and vertically control the workers' movement; (ii) the institutionalisation of the workers' movement by controlling trade union demands, leadership and internal functioning; and (iii) control over interest groups and their leadership via incentives (such as political positions and money) and by restrictions or repression if necessary (Collier and Collier 1991; Bensúsán et al. 2011; Bensusan and Middlebrook 2013; De la Garza 2003, 2012; Zapata 2005; Covarrubias 2009).

The Central de Trabajadores de México (CTM – Confederation of Mexican Workers), established in 1936, became the leading union structure, but the regime never conferred on it a monopoly of workers' representation. In order to ensure that the unions could not develop into a strong and potentially autonomous centre of power the PRI did not allow the CTM to organise public servants and peasants and there were always several regional and national confederations linked to the PRI through separate structures. A complex system developed involving the CTM, the Confederación Revolucionaria de Obrero y Campesinos (CROC – Revolutionary Confederation of Workers and Peasants), the Confederación Regional Obrera y Campesina (CROM – Regional Confederation of Workers and Peasants) and the



Central de Trabajadores y Campesinos (CTC – Confederation of Workers and Peasants) – among others – representing workers' and peasants' interests under state supervision.

Legally, independent unions were not banned but when the authorities saw fit or the unions ran counter to the interests of the regime, their leaders were harassed or jailed, their resources taken away and they were dissolved or merged with more pliant unions.

The organised workers' movement thus became a pillar of the old political regime,⁷ the one-party, antidemocratic and authoritarian system that ruled Mexico for over seven decades.

There were three major shifts that challenged the unions' role in the system of rule. When Mexico defaulted on its foreign loans in 1981, it was forced to accept a bail-out programme from the International Monetary Fund (IMF) which imposed on it a neoliberal macroeconomic policy geared towards the promotion of exports. This effectively ended its import substitution policy and set low wages as the new paradigm for economic success. This policy direction was further consolidated in the 1990s when Mexico joined NAFTA in a free trade zone. The new economic policy paradigm⁸ greatly weakened the alliance between unions and the state and the CTM began to lose influence within the ruling party.

The second shift affected the position of the CTM among the workers. In the 1990s, some new initiatives towards strengthening independent unions provided space for the establishment of new structures and by the beginning of 2000, the National Union of Workers (UNT) and the Mexican Union Front (FSM) had emerged as independent labour forums, challenging the dominant position of the CTM. To date, the main or-

7 The Institutional Revolutionary Party (PRI), the safeguard of this system, has a tripartite structure that reflects its social and political foundations, with sections for different interest groups.

8 The most important effects were: the privatisation and closure of public companies; the cancellation or flexibilisation of collective agreements that represented the hard core of labour victories in industries such as mining, railways, and electricity, among others; the growth of export-oriented »maquila« with no room for unions or with extreme constraints on union activities, and its expansion from the northern border to the interior of the country; changes in the production structure and labour markets, together with the incorporation of an increasing number of women into the workforce; companies' location strategies seeking advantages in new work sites or greenfield sites employing workers without industrial experience or a tradition of unionism; and changes in the institutional structure, including the modification of labour law, as well as cuts in the political resources of official corporate leaders, particularly in government and political positions (Bensusán and Middlebrook 2013; De la Garza 2003, 2012; Zapata 2005; Blanke 2007; Fairris and Levine 2004; Cook 2005).



ganisation bringing independent unions together is the Unión Nacional de Trabajadores (UNT – National Workers Union), that clusters unions with decades of experience, such as the Frente Auténtico del Trabajo (Authentic Labour Front), with industrial and services unions that have been through various restructuring experiences, such as the telephone workers, the miners and the nuclear industry unions, the aeronautic sector, and other services unions. Others come from universities, and the auto industry (VW Puebla, Malhe, Seglo), as well as peasant organisations and civic associations.

The third shift was the political eruption in 2000, when the PRI lost the general election to the conservative National Action Party (PAN) and Vicente Fox became president. This drastically reduced the CTM's influence in Mexican politics.⁹

3.2 The System of Protection Contracts

During the time of official unionism a practice developed whereby contractual relations were concluded between trade union representatives (usually the general secretary) and the employer without the workers knowing of the existence of the agreement or being aware of a union acting in their »interest«. The »ghost unions« with a legal existence but unknown to workers closed the space for self-organizing initiatives: when workers managed to get together and confront the management with their demands, they found themselves blocked at the Board of Conciliation and Arbitration because a recognised union and signed bargaining agreement was already on file (Robles 2009). These labour relations came to be called »*contratismo*« or »protection contracts«, the protection in question benefitting companies against real labour unions. They help employers by closing off independent unions' room to manoeuvre.

These protection contracts did not end with the coming of the neoliberal economic paradigm or the electoral defeat of the PRI. The new party in power, the PAN, allowed the practice to continue as it served as a convenient way of applying a low wage policy. Over the years, the employer protection contracts grew unchecked, coming to represent two-thirds or

9 The diminishing influence of unions in politics can be seen from the number of CTM representatives in the federal legislature. Its number dropped from 49 out of a total of 86 worker representatives in the 1979–1982 legislature to six out of 37 in 2006–2009 – Zepeda 2009).



more of the existing union registrations, work agreements and unions (see Bouzas and Reyes 2007, 2010; De Buen 2011).

At the International Labour Organization session in June 2015, the International Trade Union Confederation and IndustriAll denounced Mexico for its inactivity in preventing protection contracts:

Protection contracts presented the most serious obstacles to the exercise of freedom of association. A protection contract was a false collective agreement signed between an employer and a union, often established by the employer, and even subject to criminal elements, without the participation of the workers, and even without their knowledge. Its objective was to prevent any independent trade union representation and most afforded employers full discretion with respect to wages, working hours and employment conditions. Once the protection contract had been registered and was in force, it was extremely difficult to form another trade union within the enterprise to negotiate a new legitimate collective accord.

ILO 2015

A system with bogus unions of which workers were not even aware could not operate on a broad basis without support from the political authorities. The trade unions at the ILO's 2015 session continued their criticisms:

This corrupt system, unfortunately, did not appear to be restricted by the Secretariat of Labour and Social Welfare. At the local level, the protection contracts were registered with the full knowledge of the local conciliation and arbitration boards, on which the unions who were signatories to the protection contracts were represented. The Mexican system of conciliation and arbitration boards had been widely criticised for a lack of effectiveness, political partiality and corruption. Although they were nominally tripartite, in practice, these boards were controlled by the executive authorities. While workers benefited, in theory, from direct representation, the procedures for the election of workers' representatives were unclear. Several experts had proposed replacing the system of conciliation and arbitration boards with a system of labour tribunals, which would come under the judicial rather than the executive authorities. Experts estimated that approximately 90 per cent of all collective agreements in Mexico were protection contracts, and that the number had been rising over recent years.

ILO 2015



4 The Labour Relations System in the Mexican Auto Industry

The automotive industry is highly unionised; all assembly plants have a union (Arteaga 2003: 14). Many tier 1 and 2 suppliers are also unionised. Gabino Jiménez (2013) has looked into the registration of unions and collective agreements in the sector.¹⁰ He found 408 unions, of which only 29 operated in more than a single state. In all, 978 collective agreements were registered in 28 states. Of these, 927 (94.8 per cent) were restricted to a single state, while a mere 51 contracts covered companies with plants in several states. It is thus clear that the large majority of unions exist as a one-plant union.

The high number of unions and consequently the high number of collective agreements provides a vivid picture of the level of union fragmentation in the sector. Even though the level of trade union registration and the collective bargaining coverage in the automotive sector is high and far above the national average, a strong atomisation prevails (see Arteaga 2003: 15; Bensusán and Middlebrook 2013; Covarrubias 2009: 15). Unions have found it very difficult to organise in several locations and labour relations are usually established plant by plant.

However, plant unions do not exist in isolation. Many are affiliated to confederations and the CTM is the strongest body in the sector. It has affiliates in the auto industry in almost all states (see Appendix 1 for the assembly industry). It is followed by the CROM and the CTC, which are well established in some states, such as Aguascalientes and the State of Mexico.

The system of protection contracts also exists in the automotive sector. No studies have been carried out to establish the extent to which bogus unionism is the dominant factor in the automotive industry. But the principles of how it functions in a sector dominated by FDI are clear.

The establishment of labour relations in an FDI project that will end up in a protection agreement involves three phases. In the first phase, the government and the foreign corporation that wants to invest agree on the location. Alternative options are presented and local governments compete

10 It is only recently that the Mexican Department of Labour started to publicise collective agreements and trade union registrations. Previously, everything we knew about them came from case studies. The decision to divulge this information was brought about by international demands in response to the lack of transparency in Mexico concerning labour issues, made at the ILO and NAFTA's administrative office for labour affairs (Bensusán and Middlebrook 2013).



Table 4: Registration of trade unions and collective agreements in the automotive industry

State	Collective agreements	Unions registered	State	Collective agreements	Unions registered
Aguascalientes	47	20	Morelos	11	9
Baja California	8	5	Nuevo León	32	20
Campeche	1	1	Oaxaca	2	2
Chiapas	6	2	Puebla	42	24
Chihuahua	6	4	Querétaro	40	22
Coahuila	45	17	San Luis Potosí	63	17
Colima	1	1	Sinaloa	1	1
DF	150	80	Sonora	25	9
Durango	1	1	Tamaulipas	8	4
Guanajuato	131	18	Tlaxcala	14	11
Hidalgo	20	12	Veracruz	5	4
Jalisco	16	11	Yucatán	2	2
Edo Mex	242	75	Zacatecas	4	3
Affects more than one	51	29	Total all states	978	408
Michoacán	4	4			

Source: Jiménez 2013.

to be chosen as a site for the FDI project. During these political negotiations, an agreement is also reached on which union is to be selected and the principles and scope of the collective agreement to be concluded.

In the second phase the wage level is fixed, with guidance from the Minimum Wage Commission (MWC). Even though the Commission is tripartite in composition, the government controls the nomination and selection of union representatives and the MWC follows the government's annual economic policy.¹¹ Ultimately, it establishes the wage level and later

11 The Comisión Nacional de Salarios Mínimos (National Minimum Wage Commission) has become obsolete, with the power only to rubberstamp wage increases defined by the government in its annual General Economic Policy Criteria and budgets formulated by the Department of Finance (Garavito 2013).



the wage increases that the government has previously defined. The level is fixed independently of the specific sector but follows the economic policy direction which is geared towards export promotion.

The third phase occurs at the workplace level. Here, specific unions interact with workers and management in the factory with regard to workers' problems and aspirations. The union leaders at the plant handle day-to-day labour relations. Given that both the contractual provisions and the wage level have been pre-defined, only secondary issues are negotiated with human resource managers, such as internal regulations, individual conflicts that may emerge, work load and work intensity, medical care and other issues.

Overall, labour relations operate in such a way that wage determination at company or plant level is not linked to worker productivity or company profits. Wages are fixed in political negotiations between the government and foreign investors and the unions play no or only a marginal role. Annual negotiations on wages follow a pre-established principle: to reach an agreement that remains close to the politically established minimum wage increase floor.

Within this warp and weft of stakeholder exchanges and flows, and power relations between unions and business, the signing of employer protection contracts is encouraged without the workers' consent or knowledge, or even before a company commences operations. Mexican labour law enables this kind of agreement: the so-called »taking note« of the labour authorities (that is, recognition of the union's internal elections or registration) allows them to determine or reject a union's application for registration and to define the kind of union they consider suitable. Typically, in a protection contract, the company and the union immediately sign a collective agreement behind the workers' backs.

The contract signed between BMW and the National Union of Auto Industry Workers and Similar Related Organisations of the United Mexican States (Sindicato Nacional de Trabajadores de la Industria Automotriz, Similares y Conexos de los Estados Unidos Mexicanos) was signed and legalised on 1 July 2014, when the company was still under establishment.

4.1 Informality and Decline in Membership

In view of the factors weakening the role of independent unionism in labour relations, it is no surprise that union membership is on the decline. According to Bensusán and Middlebrook (2013), between 1978 and 1994



the unionisation rate of the economically active population in Mexico fell from 16.3 to 10.4 per cent. By 2012, it was down to 8.8 per cent. The number of unionised workers, however, has remained stable at around 4.4 million. The unionisation rate continued to fall, reaching 8.5 per cent in the first quarter of 2015 (data from ENOE-INEGI). There are 3.1 million unionised workers in trade and services, 1.3 million work in the secondary sector, of whom 85 per cent are in manufacturing.

The problem is even more serious, however. In a country in which formal employment is a privilege of a few, after three decades of neoliberal policies, not only has informal employment grown, but – as Zapata set forth (2005) – the consolidation of the neoliberal model has led to a proliferation of informal labour markets, some of whose characteristics have seeped into the formal market, such as outsourcing, part-time jobs, contracting and payment of the minimum wage or even below, jobs lacking social security, among other things. This indicates the destructuring and deregulation of the labour market, dismantling the labour regulations and relations that used to provide workers with protection and job stability (Covarrubias 2014).

4.2 Labour Law Reform and Trade Union Cooperation

To reduce the prevalence of protection contracts in Mexican labour relations, the organising space for independent unionism must be opened up. This includes legal provisions that ban the principles on which bogus unionism is based. As most such negotiations are done behind closed doors, the law must ensure that transparency is introduced in all matters regarding the registration of unions and collective agreements. One legal reform has been initiated that may impact on the operation of protection contracts. The reform of the Federal Labour Act in 2012 promises to end the conclusion of agreements by trade unions in secret by demanding the publication of trade union registrations and rules. While this has not yet been effectively implemented by the local boards in Mexico's 31 states, the law provides a three-year grace period. From 2016 we shall see whether some of the former practices have been brought to an end.

Cooperation between unions is a must for pushing back bad labour practices around prefabricated wage agreements. There have been some promising efforts to promote inter-union dialogue and action coordination independent of political and ideological affiliations. The most significant



effort today is the Red de Sindicatos de la Industria Automotriz (Network of Auto Industry Unions), which has been working to bring together and harmonise trade union organisations in the automotive industry, regardless of their affiliation.¹² Some of trade union joint actions that illustrate the Network's efforts can be seen in Annex 2. In the past three years, IndustriAll and IG Metall, together with UAW in the United States and Unifor in Canada (previously CAW) have joined this project, promoted by the Friedrich-Ebert-Stiftung. One of the goals of this collaboration is to analyse the extent to which Mexico has fulfilled the Global Framework Agreements (that establish a minimum floor for labour standards and agreements between one corporation and its affiliates worldwide) that they have been able to construct over decades of negotiations with multinational corporations.¹³

5 Conclusion

Although the Mexican auto industry is experiencing an unprecedented boom, no benefits have come to workers in the form of higher incomes. In Mexico, auto worker wages are negatively affected by the labour relations system. This system has been distorted by state intervention, political vicissitudes and violations of labour law and standards. The culmination of this distortion are the employer protection contracts, highly idiosyncratic agreements in which governments, employers and unions collude to determine wages and conditions behind workers' backs. The cases brought against Mexico before the ILO for violating the rights to freedom of association and collective bargaining are extreme and should not be ignored,

12 The Network of Auto Industry Unions recalls efforts made for a sectoral association promoted earlier on by the International Metalworkers' Federation (IMF), which opened an office in Mexico for this purpose. Initially conceived as the National Conference of Auto Industry Unions (Conferencia Nacional de Sindicatos de la IA/CONSTA), it operated from 2002 to 2005, the year in which it ceased to exist amidst deep discouragement due to the difficulties experienced in reaching agreements and making real progress. The effort re-emerged on the encouragement of the Friedrich-Ebert-Stiftung, which since 2010 has been leading the initiative and has been able to give it unprecedented continuity. See: <http://www.sindicato-sautomotrices.org/>.

13 According to the IndustriAll Global Union, the Global Framework Agreements (GFA) »serve to protect the interests of workers across a multinational company's operations. Global Framework Agreements are negotiated on a global level between trade unions and a multinational company. They put in place the very best standards of trade union rights, health, safety and environmental practices, and quality of work principles across a company's global operations, regardless of whether those standards exist in an individual country.« Retrieved from: <http://www.industrial-all-union.org/issues/pages/global-framework-agreements-gfa>



particularly because international and independent national unions are now converging in order to demand compliance with labour rights, starting with the ILO's basic conventions.

It will be very difficult to change this system. After decades of neoliberal policies that combined limited economic growth with precarious and informalised labour markets, and low and falling wages, Mexican unionism has been significantly diminished. The automotive industry with its high growth rates and acquired status as dominant manufacturing sector could provide the platform for a turnaround in labour relations. However, dominant power groups are still perverting union structures and extreme trade union fragmentation continues to underpin the status quo, which leaves workers with little representation and low wages.

National and cross-border efforts to establish trade union dialogue promoted by bodies such as the Friedrich-Ebert-Stiftung and the IndustriALL Global Unions are helpful in opening up avenues towards unity, learning and coordinated action within Mexican unions. Likewise, Global Framework Agreements proposed by the German IG Metall and IndustriALL, mainly in European corporations with affiliates in Mexico, should be used to promote independent union action. The greatest effort, however, must come from organised workers in Mexico themselves. The importance of the local work carried out by the Network of Auto Industry Unions must therefore be highlighted, as well as the importance of moving forward with the tasks and demands that they themselves have defined.



Annexes

Annex 1: Auto industry assembly and engine manufacturing plants in Mexico, by union confederation

Plant	Union	Union confederation
Chrysler Toluca	NUAIW	CTM
Chrysler Derramadero, Saltillo	NUAIW	CTM
Chrysler Ramos Arizpe	NUAIW	CTM
Ford Hermosillo	National Progressive Workers Union of the Ford Motor Company and the Automobile Industry (Sindicato Nacional Progresista de Trabajadores de Ford Motor Company y de la Industria Automotriz)	CTM
Ford Cuautitlán	NUAIW	CTM
General Motors Toluca	Union of Integrated Auto Industry Workers and Similar Related Organisations of the United Mexican States (Sindicato de Trabajadores de la Industria Automotriz Integrada, Similares y Conexos de la República Mexicana)	CTM
General Motors Silao	NUAIAPMMW	CTM
General Motors R. Arizpe	NUAIAPMMW	CTM
General Motor SLP Mazda Salamanca	NUAIW	CTM
Honda El Salto	Union of Workers and Employees in the Auto and Industrial Assembly Structure CTM (Sindicato de Empleados y Trabajadores en la Estructura Armadura Motriz e Industrial CTM)	CTM
Honda Celaya	Union of Workers of the Metal Mechanic and Auto Industries and Similar Related Organisations (Sindicato de Trabajadores de la Industria Metal – Mecánica, Automotriz, Similares y Conexos de la República Mexicana)	CTM



Nissan Civic	Mexican Nissan Independent Union (Sindicato Independiente de Nissan Mexicana)	Independent
Nissan Aguascalientes, plants 1 and 2	Unified Workers Union of Nissan Mexicana de Aguascalientes (Sindicato Único de Trabajadores de Nissan Mexicana de Aguascalientes)	CTM
Mercedes Benz, Toluca	NUAIW	CTM
Toyota Baja California	Benito Pablo Juárez National Union of Workers from the Metal Mechanic and Iron Industries and Similar Related Organisations (Sindicato Nacional de Trabajadores de la Industria Metal Mecánica y del Acero, Similares y Conexas Lic. Benito Pablo Juárez)	FSL
Volvo State of Mexico	Union of Workers of the Automobile Manufacturing Industry, Repairs, Purchase and Sale of Auto Parts (Sindicato de Trabajadores de la Manufactura, Reparación, compra y venta de Artículos de la Industria Automotriz)	CTC
VW Puebla	Independent Union of Auto Industry Workers and Similar Related Organisations, Volkswagen in Mexico (Sindicato Independiente de Trabajadores de la Industria Automotriz, Similares y Conexas, Volkswagen de México)	UNT
VW Silao (engine manufacturing plant)	NUAIW	CTM
BMW – San Luis Potosí	NUAIW	CTM
AUDI	Independent Union of AUDI workers (Sindicato Independiente de Trabajadores de AUDI)	Independent

Notes:

NUAIW = National Union of Auto Industry Workers and Similar Related Organisations of the United Mexican States (Sindicato Nacional de Trabajadores de la Industria Automotriz Intergrade, Similares y Conexas de la República Mexicana)

NUAIAPMMW = National Union of Auto Industry, Auto Parts and Metal Mechanic Workers (Sindicato Nacional de Trabajadores de la Industria Automotriz, de Autopartes y de la Industria Metal Mecánica).

Source. Created by the authors based on consultation of the union association records of the Mexican Department of Labour and Social Security (Secretaría del Trabajo y Previsión Social) <http://registrodeasociaciones.stps.gob.mx/regaso/consultaregasociaciones.asp>



Annex 2: Press Release of the Network of Auto Industry and Auto Parts Unions, 9 July 2015

To representatives of the mass media

We appear before you and through you before Mexican society, its authorities and companies in order to inform you about our activities as the Network of Auto Industry and Auto Parts Unions.

First: *We want to communicate that, as we agreed and publicly disseminated on 8 May of this year, we have already become formally constituted as the Network of Auto Industry and Auto Parts Unions AC (a non-profit organisation) with the Department of the Economy. We have thus acquired legal status and capacity of our own that will help us to promote the goals that we have set forth.*

With our formal constitution as a Network we are sending out a clear message regarding the seriousness of our actions and our irrevocable commitment to achieve every one of goals that we have established.

Second: *We want to emphasise that the Network's most important goal is to contribute to make the Mexican auto industry the most competitive industry in the world, with the best qualified and innovative jobs, as well as clear strategies and commitments to constantly improve the remuneration and labour conditions of all its workers.*

Third: *The auto industry is the most dynamic industry in Mexico. Having become the greatest generator of investment, employment, foreign exchange and value chains, it is today the greatest dynamo of the Mexican economy. As the »industry of industries« (as Peter Drucker called it), the Mexican auto industry is the greatest opportunity Mexico has to power its development and set up new foundations for growth.*

In view of this, the Network demands and proposes immediate efforts to achieve the following:

1. *the creation of a national development plan for the Mexican auto industry with the participation and joint efforts of all stakeholders (companies, government institutions, trade unions, and science and technology cen-*



tres and experts), aimed at bringing about the exploitation of its competitive potential, productive scale-up and a sustained increase in workers' remuneration and quality of life;

- 2. the creation of a national commission on productivity, innovation and qualifications for the Mexican auto industry with a tripartite nature and subject to ongoing improvement as prescribed by law;*
- 3. in order to make the above a reality, the development, agreement and implementation of training and education programmes region by region, state by state and company by company.*

Fourth: *Recently, at the 104th Session of the International Labour Conference, vis-à-vis the Committee for the Application of Standards of the International Labour Organization (ILO), held in Geneva, Switzerland, Mexico received harsh condemnation because it permits and promotes the practice of »false trade unions or »protection unions«, [...] [which] constituted a serious limitation of the right to freedom of association, particularly as collective agreements were concluded with these protection unions without the knowledge and consent of workers, often even before enterprises had opened.«*

In this respect, as the Network of Auto Industry Unions we wish to express the following:

- that we support the ILO's request to the Mexican government to put an end to these practices; we also support the concern expressed by the US government regarding this issue; we will be vigilant that the commitments adopted by President Peña Nieto in his response to ILO be specifically complied with;*
- that it be guaranteed that, like anywhere in the world, workers be consulted when collective agreements are signed;*
- that the Conciliation and Arbitration Boards be replaced by impartial and autonomous judges; and*
- that a sustained recovery in wage levels should be implemented.*



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Employment, Labour Relations and Trade Union Strategies in the Automotive Industry in China

Lu Zhang

1 Introduction

The Chinese automotive industry has grown at an exponential rate over the past two decades: annual output increased eighteen-fold, from 1,296,778 units in 1993 to 23,722,890 in 2014, accounting for over a quarter of total global automobile production (CATRC 2011; MIIT 2015; OICA 2015). Since 2009, China has become the world's largest automobile manufacturing nation and auto market. Over 23 million vehicles were sold in 2014 alone (MIIT 2015). Joint ventures between multinational corporations and large Chinese state-owned enterprises have been dominant players in China's auto industry boom. By the early 2000s, all of the world auto giants had established joint ventures with Chinese state-owned enterprises to manufacture and sell vehicles in China. In the wake of the 2008 global financial and economic crisis, China has emerged as the primary profit generator for automobile multinationals such as General Motors, Volkswagen and Nissan.

Achieving a better understanding of labour relations in the Chinese auto industry is important not only because of its crucial position in the global automobile production, but also because of the pivotal role of auto strikes in the post-2010 labour unrest in China. The widely reported auto strike wave in 2010 is considered by many to be a turning point in Chinese workers' ongoing struggles for higher pay, better working conditions and genuine union representation. The historic events unfolded when a nineteen-day strike at the Nanhai Honda transmission plant in Foshan, Guangdong Province, led to the shutdown of the Japanese automaker's four China-based assembly plants and brought Honda production in China to a dead halt. At the peak of the strike, over 1,800 workers walked out, de-



manding not only a significant pay increase but also the right to elect their own union officials inside the factory union, a branch of the state-controlled All-China Federation of Trade Unions (ACFTU). Like most strikes in China, the Nanhai Honda strike was organised and fought by the workers themselves. The factory union did not support or represent them in negotiations. The workers elected their own delegation of representatives from each department to negotiate with management. Eventually, management was forced to agree to a 33 per cent pay increase (500 yuan) for all workers to end the strike. The strike's success in winning concessions from employers inspired a wave of strikes in a dozen other auto parts plants, as well as in other manufacturing sectors and regions. Most were successful in bringing about wage rises and some also promoted trade union reforms at the enterprise level. The strike wave pressured the Guangdong government to promote trade union reforms to improve strike handling and to pass legislation in support of regularised collective bargaining at factory and industry levels (Liu 2010; Gray and Jang 2014).

This chapter analyses employment, labour relations and trade union strategies in the Chinese automotive industry, drawing evidence from the author's interviews and documentary research. The author conducted interviews with workers, managers and enterprise union and Party officials in seven auto assembly plants and three parts plants during multiple field trips between 2004 and 2015. The chapter begins with a brief overview of industrial and workforce restructuring, followed by a description of employment, wages and working conditions in the Chinese auto industry. It then examines the presence and the role of ACFTU in the assembly and parts sectors, respectively. It further analyses rising labour activism and trade union responses at the enterprise and industry levels. The chapter concludes with a discussion of the implications of autoworkers' growing activism for trade union strategies and labour relations in China.

2 Industrial and Labour Restructuring in the Chinese Automotive Industry

Although the first automobile plants were built in China in the 1950s, the industry did not begin to take off until the mid-1990s, when the central government pushed through a large-scale restructuring to prepare the auto industry to meet the challenge of China's pending WTO accession. More dramatic restructuring came with growing competition. The loosening of



entry barriers under the WTO agreement and the fast-growing domestic private auto markets ushered in another wave of foreign and domestic investment and new entrants in the auto assembly sector.¹ It was estimated that the average profit margin of a Chinese passenger carmaker was about 12–14 per cent in 2000, but this had fallen to a mere 4 per cent in 2005.² For low-end domestic carmakers such as Chery and Jeely, their average profit margins were even thinner, with an average of 2.5–4 per cent (Wang 2010). Notably, in the aftermath of the 2008 global financial and economic crisis, the average profitability in the Chinese auto assembly sector rebounded after a short downturn in 2008. Industry analysts attributed this largely to the government's stimulus policies, China's rapidly growing domestic auto market and the optimised production capacity and reduced manufacturing costs. What has often been left out, however, is the heightened exploitation of front-line workers through increased work intensity and excessive overtime, as well as the widespread use of low-paid, »flexible« temporary workers on production lines.

Faced with growing competition, major automakers in China have responded by moving toward leaner and more flexible workplaces. Joint ventures have had a major impact on the organisation of production by importing advanced machinery, technology and global standards. In the organisation of production, they have generally combined lean production techniques with the exiting Taylorist/Fordist mass assembly production system (Zhang 2015).

In labour and employment policy, they have reduced job security and sought more flexibility in hiring and firing. The pursuit for labour flexibility involved two processes: the replacement of permanent and long-term workers with contract-based, formal (regular) workers;³ and the introduction of labour force dualism by using temporary workers alongside formal workers on production lines. Among the seven major automobile factories

1 The first wave of foreign investment in the Chinese auto industry, from 1984 to 1996, was pioneered by AMC/Chrysler and VW in 1984 and 1985, respectively, followed by Peugeot (1985), Citroen (1992) and Daihatsu (1996). During this time period, due to tight state control and a relatively small domestic private auto market, foreign firms – with the exception of VW – were not profitable. Peugeot pulled out of the Chinese market, only to re-enter in 2003.

2 This estimate excluded luxury car brands, which generally have much higher profit margins. (Author's interview with an autoindustry researcher at Shanghai Social Science Academy, Shanghai, 20 March 2007.)

3 The processes reflect the profound change in the Chinese labour system under the market reforms, from a socialist »iron rice bowl« system based on permanent employment to a labour contract system based on individual employment contracts.



studied by the author, six used a large number of temporary workers, ranging between one-third and two-thirds of the total production workforce (as of May 2011).

The reasons for using temporary workers were straightforward: to cut labour costs and to increase staffing flexibility. For the cost of hiring a formal worker – including all the social insurance contributions and fringe benefits – three to four temporary workers could be hired.⁴ Most temporary workers are agency workers hired through labour agencies. Auto manufacturers can let them go by simply returning them to the labour hiring agencies. Another, less explicit reason was labour control: to divide workers, using temporary workers as a buffer, while maintaining a committed and cooperative core formal workforce. However, as detailed elsewhere, the management-constructed divisions among workers have become a continuing source of irritation and an impetus for the temporary workers to rebel against unequal treatment. Furthermore, to the extent that dualism and inequality exist and are ubiquitous between assembly workers and parts workers in the Chinese auto industry, it is not surprising that the main discontent and militancy is found among the temporary workers in assembly plants, as well as among parts workers in the lower tiers of the subcontracting system.⁵

The results of industrial restructuring were impressive. Total output increased from 1.4 million vehicles in 1994 to 2.3 million in 2001, and rocketed to 23.7 million in 2014. Meanwhile, the total number of manufacturing employees declined, from almost 2 million in 1994 to 1.5 million in 2001 (Figure 1). Employment had increased to 3.4 million by 2013 (CATRC 2002–2014).⁶ Unlike other cases of rapid expansion in the automobile industry, which were accompanied by an equally rapid growth in the number of employees, the full take-off of the Chinese automobile industry was simultaneously a process of weeding out inefficient state-owned enterprises and the older generation of state workers, along with the expansion of Sino-foreign joint ventures and the making of a new generation of industrial workers. As a result, the composition of the workforce was largely transformed after restructuring.

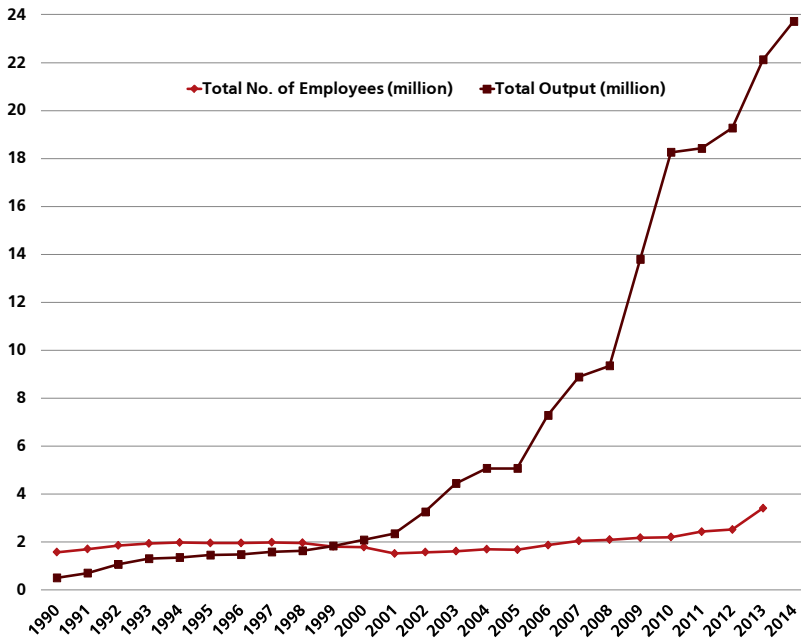
4 This estimate is based on the author's interviews with human resource managers at the case-study auto assembly enterprises.

5 For details, see Zhang (2015).

6 It should be noted that the statistics only include formal employees listed on companies' books and payrolls; temporary workers are not counted. Therefore, the actual size of the Chinese auto industry workforce is almost certainly larger. For a more detailed discussion of labour force dualism and the scale and social composition of temporary workers, see Zhang (2011).



Figure 1: Annual output and number of employees in the Chinese automobile industry, 1990–2014



Source: China Automotive Industry Yearbook, 1990–2014. Compiled by the author.

2 Working Conditions and Wages

Working conditions in the Chinese auto industry were commonly characterised by heavy workloads, intense work pace, long working hours (usually 10–12 hours per shift) and excessive overtime. More than 80 per cent of the workers interviewed by the author considered the current production pace »intense«. All the workers interviewed reported physical strains and exhaustion to different degrees. Workers also complained about arbitrary management decisions to speed up work and on overtime, as well as a lack of worker autonomy and representation over their daily work.

To be sure, Chinese autoworkers' hourly wages are about 30 per cent higher than the average for urban manufacturing workers in China (Table 1), even though they are very low by international standards (Table 2). Certainly, there are significant variations in autoworkers' earnings across segments, types of enterprise ownership, regions and skill levels. Except



Table 1: Average annual earnings in the manufacturing and transport equipment manufacturing sectors in China, 2004–2011 (yuan)

	2004	2005	2006	2007	2008	2009	2010	2011
Manufacturing (x)	14,251	15,934	18,225	21,144	24,404	26,810	30,916	36,665
Transport Equipment (y)	18,485	20,204	22,990	26,922	31,658	34,730	40,493	45,635
National Average	15,920	18,200	20,856	24,721	28,898	32,244	36,539	41,799
Ratio y/x	1.30	1.27	1.26	1.27	1.30	1.30	1.31	1.24

Source: Compiled from China Labour Statistics Yearbook, various years. Beijing: National Bureau of Statistics.

for a handful of large, first-tier parts suppliers, parts workers on average earn significantly lower wages than assembly workers, ranging between one- and two-thirds. When the auto assembly sector is separated from the general grouping of »manufacture of transport equipment«, the wage level can be even higher.

However, wage increases of front-line workers have not kept pace with the remarkable growth of China's auto industry in the past decade. As shown in Table 3, total output and labour productivity in the auto industry grew at a double-digit speed annually between 2002 and 2010 (except for 2008). However, average wage growth of production workers remained in single digits. In 2009, for example, the total vehicle output in China increased by 48.3 per cent, but the average wages of autoworkers increased by only 6.4 per cent. Even this moderate wage increase was achieved primarily through extensive overtime and a significant increase in work intensity. There was a strong sentiment among the workers interviewed that they were underpaid and that they did not receive fair reward and recognition for their work.

It is clear that the Chinese auto industry has not developed a long-term, normalised wage-increasing mechanism consistent with the rapid growth of the industry and labour productivity, a situation, indeed, that characterises Chinese workers in general.⁷

7 Between 1995 and 2004, the growth rate of average annual wages in the manufacturing sector was estimated to be 5 per cent lower than the average annual growth rate in labour productivity.



Table 2: Motor vehicles and other transport equipment hourly wage costs in selected countries, 2008–2011^a (US dollars)

Country	2008	2009	2010	2011
Germany	59.59	57.7	54.8	60.53
United States	41.97	45.19	45.34	46.11
Japan	32.82	35.66	37.21	42.37
South Korea	21.99	19.01	23.42	24.26
Brazil	14.62	13.88	17.22	19.88
Mexico	8.69	8.01	7.95	8.15
China (manufacturing, urban) (b)	2.58	2.85	n/a	n/a
China (Transport Equipment) (c)	3.35	3.71	n/a	n/a

Notes: (a) Compensation costs include direct pay, social insurance expenditures and labour-related taxes. For complete definitions, see the technical notes at www.bls.gov/ilc/ichcctn.pdf

(b) BLS, »Manufacturing in China,« Table 2: Average hourly compensation costs of manufacturing employees in China, 2002–2009, www.bls.gov/fls/china.htm.

(c) The hourly compensation cost in China (c) was estimated by multiplying hourly compensation in the manufacturing sector (b) by the ratio of average annual earnings in Table 2. Given the long working hours typical in the Chinese automobile industry, we can expect annual working hours to be close to the manufacturing average.

Source: US Bureau of Labor Statistics (BLS), »International Labor Comparisons«. April, 2013. (www.bls.gov/fls/ichccindustry.htm#29-30); US BLS, »Manufacturing in China«. 7 June 2013. (www.bls.gov/fls/china.htm); NBS (2009–2012).

3 The ACFTU and Union Presence in the Chinese Automotive Industry

In China, all unions belong to the ACFTU, the sole legal union under the leadership of the Chinese Communist Party (CCP). The ACFTU is the world's largest trade union with over 280 million members. It has 31 regional federations and 10 national industrial unions. Traditionally, trade unions in socialist countries are characterised by their dual function of delivering the state's instructions from the top to workers, and mobilising workers for production while submitting the demands of workers to the top, in an effort to protect workers' welfare and interests (Pravda and Ruble 1986). This »classical dualism«, however, is self-contradictory (Feng 2002). Tensions between the dual functions of Chinese trade unions have



Table 3: Average annual growth rates in vehicle output, labour productivity and remuneration in the Chinese automobile industry, 2006–2010 (%)

Year	2006	2007	2008	2009	2010
Vehicle output growth rate (a)	27.3	22.0	5.2	48.3	32.4
Productivity growth rate (output per capita) (b)	29.2	16.5	0	22.3	23.8
Remuneration growth rate in the auto industry (c)	9.0	9.0	8.6	6.4	10.6
National pay growth rate (d)	8.7	9.7	11.7	7.8	12.3
GDP growth rate (e)	11.6	13.0	8.9	9.1	10.3

Notes: (a), (b) Compiled from China Automotive Industry Yearbook, various years.

(c) The remuneration growth rates for 2006–2009 are drawn from figures published in First Financial Daily (2010), »Shoukun fenpei zhidu, qiche hangye gongren xinchou diwei paihuai« (Restricted by the Distribution System, Auto Industry Workers' Wages Remain Low), 7 September (<http://auto.ifeng.com/news/domesticindustry/20100907/415831.shtml>); the growth rate for 2010 is drawn from a report on an HRM Auto Industry Survey conducted by one of China's largest recruitment services websites, 51job.com (2011), »2011 Renli ziyuan dianfan qiye hangye baogao – qiche/lingpeijian hangye« (2011 Human Resources Management Model Enterprises Report – Automotive/Parts Industry) (http://my.51job.com/careerpost/2010/mkt_awards10/FileDownload/2011hrmAUTO%20SurveyReport.pdf)

(d), (e) National Bureau of Statistics.

become more apparent under market reforms, as the state has retreated from its socialist social contract and from its commitment to protecting workers' interests. Meanwhile, the divisions and conflicts between workers and capitalists/managers have increased significantly with the rapid development of a capitalist economy and rampant violations of workers' rights and interests (Chan 2001). Some critics view the ACFTU as merely a state apparatus whose priority is to serve the state's goals of maintaining social stability and upholding political authority, rather than to protect workers' rights (CLB 2009: 3). A more nuanced view recognises the »double institutional identity« of the ACFTU and its regional branches as both state apparatus and labour organisation, whose power in »representing, mediating and pre-empting« labour conflicts derives from their formal government status (Chen 2003: 1006–7; 2009).

At the enterprise level, however, branches of the ACFTU are generally incapable of representing workers and negotiating with employers because they are both financially and organisationally dependent on, and

indeed part of, management.⁸ Indeed, union officials in state-owned and state-controlled enterprises (including joint ventures) are appointed by the CCP, and an enterprise Party Secretary often holds a concurrent position as a union chairperson. The union is expected to cooperate with management to promote production and control workers rather than to bargain with management over wages and benefits on behalf of workers.⁹ The lack of genuine union representation and collective bargaining often drives workers to turn directly to industrial action and other forms of grassroots resistance to demand higher pay and better working conditions.

In the automobile industry, while no systematic official statistics on union membership and collective bargaining agreement coverage are available, the piecemeal data I collected suggest a wide variation across sectors, enterprise ownership types and localities. The overall structure of the Chinese auto industry is highly stratified, with a concentrated, capital-intensive, core assembly sector and a fragmented parts sector consisting of multiple tiers of suppliers, including hundreds of small, labour-intensive parts suppliers. While the auto industry is designated a pillar industry of strategic importance, it is the auto assembly sector that has received the most attention and support from the central government.

In the auto assembly sector, where the central government has played a more interventionist role, joint ventures between multinational corporations and large Chinese state-owned enterprises have been dominant players. The main purpose of the Chinese central government in supporting joint ventures between multinationals and large state-owned enterprises is to obtain quick technology transfers and industrial upgrading, and eventually to develop China's own »national champions« that can compete globally. Therefore, Beijing's use of FDI in the auto assembly sector is prudent: the establishment of new assembly joint ventures must be approved by the central government, and foreign automakers are not allowed to build wholly owned assembly plants nor are they able to hold a majority share in joint ventures. Moreover, by controlling the personnel decisions of senior Chinese managers at joint ventures the central government can ensure that they implement an economic, political and social agenda that is concordant with the goals of the party state. Given the more interventionist role of the

8 The majority of funding for the union's operational expenses comes from a 2 per cent payroll tax on employers and from the state (Chen 2009).

9 China's trade unions have seven administrative levels: central, provincial, municipal, district, street, community and enterprise. Only enterprise-level union staff members are employees. At other levels, union cadres are officials recruited by the CCP.



state, it is no coincidence that a number of characteristics of state-owned enterprises are also characteristic of China's major auto joint ventures, including the presence and role of the ACFTU.

For instance, at the seven large auto assembly plants I visited, there were a Communist Party committee and a union branch of the ACF-TU. They played an active role in mobilising workers to promote production and build harmonious labour relations through campaign-style production mobilisation, »thought-work« and heart-to-heart talks with workers, regular group study meetings among party members and worker activists. The factory union mainly organises various employee »care projects«, such as distributing holiday gifts, giving employees birthday presents, visiting sick employees, assisting workers and their families during times of hardship and organising cultural and recreation activities. Labour control in those enterprises tends to be more sophisticated and hegemonic in nature.

The unionisation rate is generally high and collective wage agreement coverage among formal employees is common in the auto assembly sector. For instance, Dongfeng Motor Corporation (Dongfeng), one of the »Big Four« Chinese automakers, boasted a 100 per cent unionisation rate among its over 132,000 formal employees as of 2011. Among its 82 subsidiary companies, 98 per cent had established collective wage consultation system and 95 per cent had signed collective labour contracts with their formal employees as of 2011 (ACFTU 2011). However, a large number of temporary agency workers had been excluded from the automobile factory unions until recently.

In the auto parts sector, by contrast, the government has no restrictions on the ownership structure. Domestic private-owned and wholly foreign-owned suppliers proliferate. Many parts suppliers are small- and medium-sized companies, where the unionisation rate is much lower than in the assembly sector. For instance, there were 160 parts suppliers located in Beijing and its suburban areas to supply parts for the assembly plants of the Beijing Automotive Group (BAG) in 2011. Together, those parts suppliers employed over 36,000 workers. Among them, 139 were foreign-invested and private companies, employing 31,000 workers. The rest were state-owned and state-controlled enterprises belonging to BAG. Whereas BAG's assembly plants boasted a 100 per cent unionisation rate and collective wage bargaining coverage, 25 per cent of its parts suppliers did not have unions, 57 per cent did not sign collective labour contracts and 59 per cent were not covered by collective wage bargaining agreements (Chen 2012). As



already noted, parts workers' wages on average are also significantly lower than those of assembly workers. As a result, the auto parts sector tends to have more worker grievances and unrest than the assembly sector.

4 Rising Labour Activism and Trade Union Reform in the Chinese Automotive Industry

Historically, autoworkers are known for their strong workplace bargaining power and militancy in translating local struggles into major victories in the broader labour movement. More specifically, because of the scale and capital intensity of automobile production, as well as the complexity of the division of labour, localised stoppages by a small group of workers can disrupt the output of an entire plant or even an entire corporation, and cause large losses. Meanwhile, the nature of assembly line production in the auto industry tends to create strong grievances among workers, for example, over the monotony of work, intense production pace and the arbitrary exercise of authority by management (Silver 2003).

My evidence suggests that a similar combination of strong workplace bargaining power and major grievances is evident among Chinese autoworkers and has led to rising labour unrest in the Chinese auto industry. For one thing, the central government policy in favour of large state-owned auto groups, combined with massive foreign investment through joint ventures has increased the scale and concentration of automobile production in China since the late 1990s. Chinese autoworkers are concentrated in enormous factories. The production base of Shanghai Volkswagen in the suburb of Shanghai has approximately 22,000 employees. More impressive still is the concentration of around 120,000 autoworkers employed by the centrally-controlled FAW Auto Group in its various subsidiary firms and plants in »FAW auto city«, a 12 square-kilometre district in the city of Changchun, where over 300,000 FAW employees and their families work and live.

Moreover, the widely adopted JIT techniques have increased the vulnerability of production to any interruptions in the flow of parts to the assembly lines by eliminating the buffers, and thus have boosted the potential workplace bargaining power of Chinese autoworkers. For example, at one of the Sino-Japanese assembly plant I studied, management introduced JIT production methods despite a very poor labour-management relationship, reflected in widespread acts of petty sabotage by workers. In



the end, in order to keep production flowing smoothly, management felt obliged to eliminate its experiment and return to a system with greater built-in supply buffers. Similarly, auto parts workers have gained substantial workplace bargaining power, as they are enmeshed in the just-in-time production system and the global sourcing of auto parts production. This point was illustrated in the 2010 Honda parts worker strikes, as a stoppage at one transmission plant was able to shut down Honda's four assembly plants in China.

Chinese autoworkers have also been gaining marketplace bargaining power from a labour shortage, especially among skilled workers and technicians. As a result, autoworkers in China have become increasingly assertive in demanding higher wages and better working conditions. Over the course of my fieldwork, I documented various hidden and open forms of resistance by autoworkers in the form of sabotage, slowdowns, pilferage, effort bargaining, filing labour dispute cases, collective acts of defiance and wildcat strikes. In particular, I witnessed rising activism among a growing number of temporary workers against unequal treatment at work. Despite the lack of independent unions, workers' localised, grassroots resistance has won specific management concessions, including increased wages and benefits for both formal and temporary workers.

Furthermore, in the wake of the 2010 auto strike wave, the government, due to its concerns about social stability, pressured the ACFTU to carry out reform initiatives on the development and reorganisation of enterprise unions, direct election of »professional« union chairmen and promotion of collective wage negotiations. The Guangdong Provincial Federation of Trade Unions, for example, made Nanhai Honda a pilot site for direct union elections and collective bargaining in 2011. The workers directly elected union team leaders, union committee members and a union vice chairman after the strike. In March 2011, with guidance from the Guangdong Federation of Trade Unions, workers and management at Nanhai Honda signed a new collective contract which raised workers' combined wages and bonuses by an average of 611 *yuan*, a 33 per cent increase (CLB 2011: 41).

Another example is the establishment of industry unions and the promotion of collective wage negotiations in the Guangzhou Economic and Technology Development District (GZETD) in Guangzhou, Guangdong Province. The GZETD has been at the forefront of China's reform and opening up since its inception in 1984. The district has developed six major industrial clusters with complete supply chains, including the auto parts sector. There were over 100 auto parts suppliers in the GZETD, mainly sup-



plying parts for Guangzhou Honda, Dongfeng Nissan, Guangzhou Toyota and other Sino-Japanese auto assemblers. In 2011 the GZETD Federation of Trade Unions established six industry unions in the six major industry clusters. The main tasks of the industry unions are to form enterprise unions and to lead and facilitate regularised collective wage negotiations by their member enterprise unions (ACFTU 2012). The Federation of Trade Unions in the Auto Parts Sector (FTUAP) is one of the six industry unions. It organises collective wage bargaining forums among its member unions at the beginning of each year, helping them to gather and exchange information on sectoral pay growth, company profitability and wage negotiation strategies. The FTUAP also holds regular meetings, workshops and social events for the grassroots union leaders of its member enterprises to communicate and to learn from each other's experience in collective wage negotiations. In addition, the FTUAP has actively supported enterprise union elections, which allow workers to nominate candidates and to vote for their union chairs and representatives.

To be sure, the enterprise union elections and collective wage negotiations are still within the existing framework of the state-controlled ACFTU. No independent unions are allowed, nor are the nomination and election of union leadership free from management intervention and manipulation (Wen 2014). Despite the structural limitations, however, my interviews with workers at two auto parts enterprises in GZETD suggest that wide participation in grassroots union elections has raised workers' awareness of rights and of unions, putting pressure on the elected union leaders to be more responsive to workers' demands and interests. As an elected union chairman of an automotive electronics manufacturer in GZETD commented:

In the past, most workers would view the union as a social welfare organisation, merely distributing gifts and organising recreation activities among workers. Since we began union elections in 2011, workers' views have changed. They now know that the union can actually negotiate higher wages for them and that they can turn to the union for help and protection if their rights are violated. Many workers pay attention to the union's work, and new employees would enthusiastically ask us when they can join the union. We can feel the pressure from workers, demanding that the union do more for them, especially during the collective wage negotiations.¹⁰

10 Interview with the author, Guangzhou, 26 June 2015.



Such pressure from below, in turn, has led to more effective collective wage negotiations between the union and management and has improved wages and working conditions for workers at the enterprise level. Between 2011 and 2014 auto parts workers' wages almost doubled in GZETD through annual collective wage negotiations between elected enterprise unions and management with guidance from the FTUAP.¹¹

Since the establishment of the six industry unions in 2011, 226 enterprises in the district formed new unions and 86,000 workers joined unions within one year. The unionisation rate reached 93 per cent in the six major industries. Furthermore, the industry unions recruited over 50,000 temporary workers (hired by labour agencies) to join the unions of the companies at which they were working. By unionising temporary agency workers, labour rights violations such as unequal pay for equal work and differential treatment of temporary agency workers have been largely reduced in the six major industries. Through regularised collective wage negotiations, workers' wages grew by an annual average of 16.5 per cent and the number of collective labour disputes fell by 35 per cent in the six major industries during the first half of 2012 (ACFTU 2012). Through direct action, Chinese workers have been able to put pressure on the official trade union ACF-TU to reform and to become more responsive in promoting and protecting workers' rights and interests at the grassroots level.

5 Conclusion

This chapter has explored labour relations and trade union reform in the Chinese automotive industry. Massive foreign investment and the increased scale and concentration of automobile production in China in the past two decades have created and strengthened a new generation of autoworkers with growing workplace bargaining power and grievances, giving rise to labour activism among autoworkers in China. Concordant with Clarke and Pringle's findings that »the form and extent of independent worker activism, and the response of the state to such activism, are a much more significant determinant of trade union development than is the legal and institutional framework of industrial relations« (2009: 85), my evidence suggests that grassroots worker activism and the state's concerns about stability are the real forces driving ACFTU reforms at the local and enterprise levels.

11 The author's interview with a union official of FTUAP, Guangzhou, June 24, 2015.



Contrary to the prevailing view in the social science literature that asserts the structural weakness of Chinese workers and discounts their localised and apolitical struggles (see, for example, Lee 2007), my study shows that even though labour unrest in China has not led to the formation of independent trade unions or competitive political parties to challenge the authoritarian party-state, widespread grassroots protests have been able to gain substantial wage increases and improved conditions for workers on the shop floor. Moreover, rising labour unrest, despite being localised and apolitical, has induced the central government to introduce new national labour laws and policy changes that extend new rights and improve conditions for workers as part of an effort to stabilise labour relations and maintain social stability.

A directly related question is where Chinese workers' localised and apolitical labour unrest will lead and whether it can push for the establishment of independent unions and collective bargaining. My field research has led me to a dynamic view that workers' grassroots protests will continue to push for higher wages, better working conditions and more union organising and pro-labour reforms from the official union ACFTU. But the labour movement in China will not follow the schema of the »master narrative« from working class formation to trade union organisation to political party and to state power, which is still alive in many discussions about the labour unrest in China today. First of all, faced with mounting labour unrest and concerned with maintaining social and political stability, the ruling Communist Party has explicitly urged the ACFTU to »further protect workers' legitimate rights and interests«, to »improve labour protection mechanisms«, to »achieve decent work for the labouring masses« and to promote »harmonious labour relations and social harmony«. Recent empirical studies suggest that the ACFTU, especially its branches at the local, municipal and district levels, has been taking a more active role in organising workers and negotiating with employers to improve conditions for workers (Chan 2006; Liu 2010). While the CCP is unlikely to allow any independent unions to exist out of its control, the ACFTU is likely to become more active in organising workers and responding to their grievances and demands, under the threat that it could become totally irrelevant to workers and state bureaucrats if it cannot deliver any meaningful gains for workers and thereby mediate labour–capital conflicts and pre-empt strikes.

Looking forward, given the broader context of China's demographic changes and Beijing's rebalancing strategy to shift from an export-led growth model to a more balanced one based on domestic consumption,



and thereby higher wages, we can expect labour costs in the Chinese auto industry to continue rising in the years to come. The effects of rising labour costs vary by industry. On one hand, some labour-intensive, low-cost manufacturers have moved to western China or to other low-wage countries, such as Vietnam and Bangladesh. On the other hand, market-seeking and high-end manufacturers continue to expand in China, because they focus more on accessing China's domestic market and command higher profit margins and depend more on a sophisticated infrastructure, supplier networks and quality-control system. In fact, higher wages also means more purchasing power. As wages go up the country's domestic market will become more attractive to market-seeking investment.

In the auto industry, more specifically, rising labour costs have a different impact on the assembly and the parts sectors. In the auto assembly sector, total manufacturing cost structure and domestic market expansion are still the two most important factors when it comes to investment decision-making. According to a 2010 report by McKinsey, despite rising manufacturing costs, automakers in China still enjoy a 35 per cent cost advantage over those in developed markets (Barbosa et al. 2010). All the multinational automakers currently in China have focused on expansion in central and western China. New auto assembly plants are springing up in inland China, where production costs are much lower and access to local markets – especially to the third and fourth tier cities – is faster. New assemblers are also bringing their supplier networks to the new production bases. Cities such as Chongqing, Chengdu and Changsha have emerged as China's new automobile production hubs.

In the auto parts sector, rising labour costs have put more pressure on domestic parts suppliers whose profit margins have been much thinner and low-cost manufacturing has been the winning edge. Industry experts predict that it is in the auto parts sector that countries such as Mexico will benefit directly from rising manufacturing and transportation costs in China, as many North American suppliers head to Mexico due to its proximity to the US market. But it is not at all clear that the path to »development« in the twenty-first century is through a single-minded pursuit of low-cost manufacturing activities in the last stage of the product cycle.

In fact, the Chinese central government has been actively promoting industrial upgrading and seeking to build a greener and cleaner car industry. It has been able to utilise China's huge domestic market as leverage to negotiate terms and conditions on joint ventures and technology transfers with global auto giants, in its efforts to gain a better position in the international



division of labour and to jump up in the global value-added hierarchy. Beijing has also been making a conscious effort to build a greener and cleaner car industry. China's 12th five-year plan identified seven strategic emerging industries: energy efficiency and environmental protection, new generation information technology, bio-technology, high-end equipment manufacturing, alternative energy, new materials and electric vehicles. This effort can also be seen from Beijing's massive investments in the expansion of tertiary education and in R&D in new energy and energy-saving vehicles and related infrastructure and technologies. However, without a paradigm shift and reorientation toward more balanced development focusing on peoples' livelihoods, social equity and ecological sustainability that goes beyond state developmentalism, the prospects for China that will escape the pitfalls of the energy-intensive, mass-consumption model remain dim. To end on a positive note, however, if China does make it onto a more sustainable and equitable developmental path, the ongoing struggles by Chinese workers for dignity and justice will no doubt have played a critical role in taking it there.



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Trade Unions and Industrial Relations in the Car Industry in India

Pravin Sinha

1 Introduction

The liberalisation of the Indian economy has led to economic growth and modernisation in manufacturing. It has also brought an influx of foreign companies in the automotive industry.

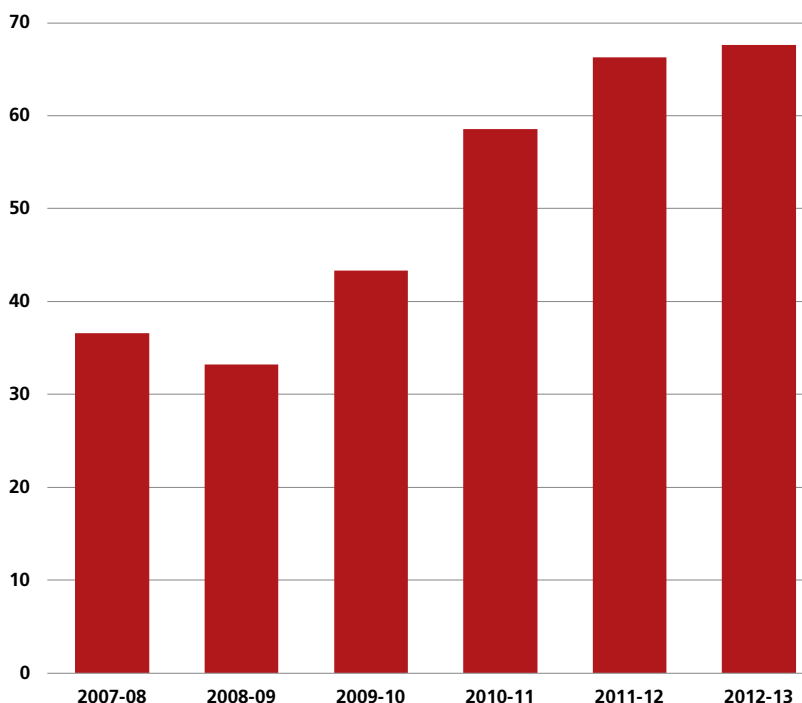
The automotive sector is dominated by the two-wheeler segment, which accounts for over 76 per cent of total vehicles manufactured in India. The passenger vehicle segment follows behind, with 16 per cent. The quality of vehicles manufactured in India is now on a par with those manufactured elsewhere. India has moved away from *jugaad*¹ to *jhaakas*² by adopting the concept of zero defect production. Indian automobile manufacturing companies are also venturing abroad to establish plants on their own or as a joint venture. Vehicles of Tata Motors Limited (TATA) are being marketed in several countries in Europe, Africa, the Middle East, South East Asia, South Asia, South America, Australia, CIS and Russia. It has joint venture assembly operations in Bangladesh, Ukraine and Senegal. The auto component sector is engaged in export as well and has become a major supplier of components to automobile companies throughout the globe.

1 Jugaad is a colloquial Hindi and Punjabi word used to describe enterprising street mechanics. This meaning is often used to signify a creative ability to make existing things work or to create new things with meagre resources.

2 This word means 'superb' in Mumbai Hindi.



Figure 1: Gross turnover of automobile manufacturing in India, 2007–2008 to 2012–2013



Source: Society of Indian Automobile Manufacturers [<http://www.siamindia.com/statistics.aspx?mpgid=8&pgidtrail=10>]

During the accounting year April 2014–March 2015, the industry produced a total of 23.36 million vehicles (passenger and commercial vehicles and two-wheelers). The year saw growth in the sale of passenger vehicles in the domestic market, as well as in exports. Nevertheless, the automobile industry is set to miss the target set in the Automobile Mission Plan for 2006–2016 by a significant margin.

1.1 Auto Component Sector

There are over 12,000 auto component manufacturers in India, most of which are small. Only 5 per cent of them are registered units and can be grouped as formal sector enterprises. The auto component suppli-



ers form part of the global value chain and represent one of the fastest growing segments of the Indian automotive industry. The expansion of the component sector has been a prerequisite for foreign auto producers to increase local value, while at the same time allowing auto components to go into exports. In 2004, its exports crossed the USD 1 billion sales mark.

1.2 Jobless Growth

India's economic development has been characterised by jobless growth. While real net value added in the manufacturing sector has grown the absolute number of workers employed has declined.³ These tendencies are also visible in other sectors and can be considered an economy-wide phenomenon.

India has vowed to bring the automotive sector to the centre of its manufacturing activities. It also aims to improve governance in the sector and to establish a conducive environment for the creation of much needed jobs to service global markets with its products.

2 Characteristic Features of Labour Relations in the Automotive Sector in India

The Indian economy is dominated by small companies; 97 per cent of enterprises employ fewer than 10 workers. Because the Factory Act and other protective legislation do not cover such small enterprises, the workforce is concentrated overwhelmingly in the informal economy, which provides no legal status for workers. Thus, informality is the primary characteristic of the Indian labour market. According to a national survey published in 2015,⁴ only 17.9 per cent of the Indian workforce has regular employment; 29.9 per cent are casual/temporary workers and the remaining 52.2 per cent are self-employed.

3 Annual survey of Industries for various years.

4 National Sample Survey Organisation of the Government of India, report of the 68th Round of the NSSO.



Industrial relations in India are governed by the Trade Unions Act 1926 (amended in 2001)⁵; the Industrial Disputes Act 1947⁶; the Industrial Employment (Standing Orders) Act, 1946⁷; and the Workmen's Compensation Act 1923.⁸ The government's labour inspection machinery is supposed to ensure that employers adhere to the law. However, the multiplicity of laws with conflicting provisions has hindered their effective enforcement. There are large-scale violations of labour laws, including in the automotive sector.

Wage Development

The Annual Surveys of Industries data on wages paid to various worker groups reveal wide disparities between branches in the manufacturing sector and groups of workers.

Formal sector workers earn between two and three times more than informal sector workers. There is also a huge wage gap between branches, with tobacco and textile enterprises paying the lowest and energy producers and office machinery manufacturers the highest wages. Overall, wage disparities between the branches are lower within the informal economy and higher in the formal economy. Many of these disparities between formal and informal employment, as well as between branches can be explained by skills that can be acquired on the job or formal training and education.

In general, working conditions in the auto sector are above average. However, this is true only in terms of the distinction between formal and informal employment. In the 21 branches listed in the NSSO's survey (Table 1) formal sector automotive workers rank seventh, while the earnings of workers in the informal automotive sector come third in the national ranking.

5 The Act provides for registration of trade unions, which include associations of employers. The Act also contains certain restrictions, protections and privileges with regard to trade union registration. Under the Act 10 per cent or 100 workers (with a minimum of seven persons) are required in an establishment to form a trade union.

6 The Act concerns settling industrial disputes and securing industrial peace. However, the Act contains no procedure to determine a representative union with which to enter into collective bargaining. The employer is not obliged to recognise and enter into bargaining with a particular trade union; units employing more than 100 workers must seek government approval for layoffs or retrenchment.

7 The Act defines the conditions under which an individual can be employed.

8 The Act provides for payment of compensation in case of employment injury.



Table 1 Median wages in the Indian manufacturing sector, 2009–2010
(15–64 years of age)

Manufacturing branches	Informal sector (rupees)	Formal sector (rupees)	Premium formal / informal (%)
Food products and beverages	750	1,500	200
Tobacco products	750	875	117
Textiles	825	1,072	130
Wearing apparel, dressing and dyeing of fur	800	1,300	163
Tanning and dressing of leather; luggage	840	1,125	134
Wood and products of wood and cork	800	2,000	250
Paper and paper products	900	2000	222
Publishing, printing, reproduction of recorded media	902	2,071	230
Coke, refined petroleum products and nuclear fuel	875	4,800	549
Chemicals and chemical products	1,000	2,375	238
Rubber and plastic products	875	1,700	194
Other non-metallic mineral products	750	1,550	207
Basic metal	785	3,400	433
Fabricated metal products except machinery and equipment	875	1,800	206
Machinery and equipment	945	2,500	265
of which: motor vehicles, trailers and semi-trailers	1,050	2,470	235
of which: other transport equipment	893	3,750	420
Office, accounting and computing machinery	1,025	4,000	390
Electric machinery and apparatus	1,050	3,015	287
Radio, television, communication equipment	850	2,500	294
Medical, precision and optical instruments, watches	1,550	1,530	99
Furniture	1,000	1,338	134
Recycling	1,125	2,100	187

Note: Wages are per worker per week.

Source: Bino 2014: 97, Table 4.



Table 2: Employment in the automotive sector, 2012–2013

Category	Motor vehicle assembling	Vehicle bodies and trailers	Component suppliers	All automotive sector
Blue-collar directly employed	91,361	19,088	245,773	356,222
Blue-collar employed through contractors	18,913	22,855	193,608	235,406
White collar and management	38,225	12,512	121,439	172,176
Unpaid family members, etc.	26	102	585	713
Total persons engaged	148,523	54,587	561,405	764,515
Number of factories (in operation)	181	534	4,053	4,768
Average persons engaged per factory	820,6	102,2	138,5	160,3

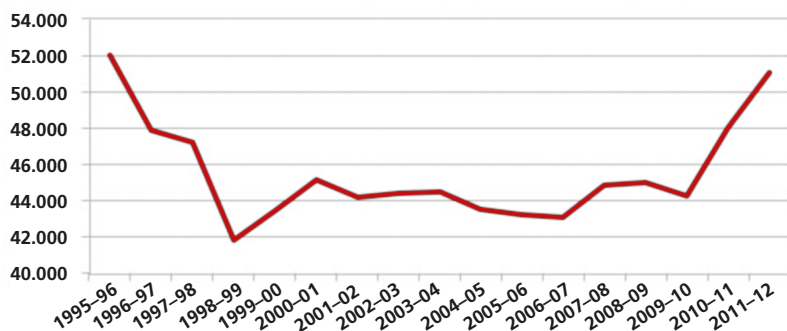
Note: The Annual Survey of Industries covers only establishments with 100 employees or more.
Source: Annual Survey of Industries, 2012–2013, CSO, Ministry of Statistics and Program Implementation, GOI. Factory Sector, Table 3.

Car assembly usually takes place in larger factories and the annual survey is likely to fully cover this segment. By contrast, tier 3 and tier 4 component suppliers are usually small units and the majority of them (if not all) are not included in the survey, while a large proportion of tier 1 and tier 2 suppliers may be covered. Bearing this in mind, the annual surveys still indicate expansion of non-regular employment, even in larger units. Car assemblers hire some 13 per cent of workers from labour contractors, whereas for component suppliers the figure is as high as 44 per cent (Table 2).

Regular wage labour has been depressed for many years. While India's economy has experienced strong GDP growth since liberal policies were applied, real wages in the manufacturing sector in general and in the automotive industry in particular have stagnated or fallen (Figures 2 and 3). The factors depressing wages have been much stronger in the automotive industry. While in 2000–2001, automotive workers still earned 77 per cent more than employees in other manufacturing branches, this wage advantage had been halved to 37 per cent by 2011–2012.



Figure 2: Real wages of factory workers, (in 2000/2001 rupees)



Source: Annual Survey of Industries, 2013–14, CSO, Ministry of Statistics and Program Implementation, GOI, New Delhi.

3 Labour Relations and Trade Unions

The Constitution of India grants workers the right to belong to a union. But so far there has been no legal obligation on employers to recognise unions or engage in collective bargaining.⁹

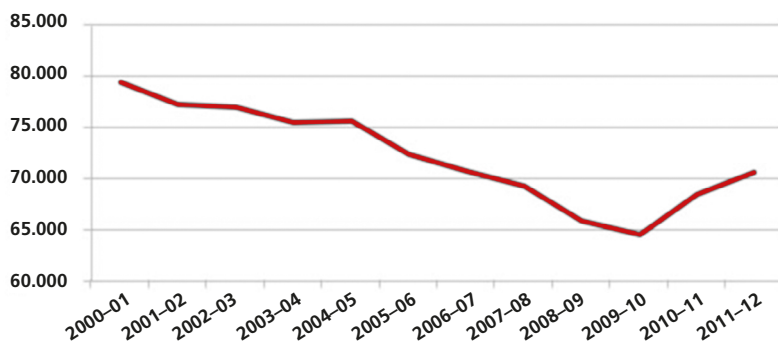
Trade unions in India have registered some growth since independence in 1947. According to the Ministry of Labour and Employment, by 2008 the number of registered trade unions had reached 84,642, but usually only around 10 per cent of the unions file mandatory annual returns. Most of these unions are affiliated to one of 23 Central Trade Union Organisations (CTUOs).¹⁰ Bhartiya Majdoor Sangh (BMS) has the largest membership and workers' delegate status at the ILO.

Organising by trade unions has traditionally been confined to workers employed in the formal sector, while non-regular workers, such as those hired from labour agencies and those concentrated in the informal sector, are mostly neglected by mainstream trade unions. There are other forms of labour organisations in the informal sector but they have limited influence. The trade union movement is divided on political lines. According to

9 The statutes of only a few states of India, such as Maharashtra, Gujarat, Madhya Pradesh and Rajasthan, have made some provisions for recognition of trade unions.

10 The six leading CTUOs include: All India Trade Union Congress (AITUC), Bhartiya Majdoor Sangh (BMS), Indian National Trade Union Congress (INTUC), Hind Majdoor Sabha (HMS), Centre of Indian Trade Unions (CITU) and the Self-Employed Women's Association (SEWA).

Figure 3: Real wages of industry workers, (in 2000/2001 rupees)



Source: Annual Survey of Industries, 2013–14, CSO, Ministry of Statistics and Program Implementation, GOI, New Delhi.

the Ministry of Labour, the trade unions had a combined membership of 5,097,366 in 2010; about 70 per cent of the members are drawn from public sector undertakings.

The degree of unionisation varies from industry to industry. Among the most unionised industries are tobacco (75 per cent), iron and steel (63 per cent), coal (61 per cent), banking (51 per cent), insurance (33 per cent) and railways (33 per cent). In manufacturing, unionisation averages about 30 per cent. As in other countries, trade unions in India have a significant presence in the public sector and large private sector establishments.

In the automobile sector there are trade unions in Tata Motors Limited (TATA); Mahindra & Mahindra (M&M); Maruti Suzuki India Limited (MSIL); Suzuki; Honda; Hyundai; PAL; Bajaj; Hero; Ford; Fiat; and VW. While most of these enterprise unions are not affiliated to CTUOs, many have come together and federated themselves at industry level. Union presence in car assembly is widespread, but overall coverage in the automobile industry remains limited as the large branch of component suppliers remains practically union-free.

Most government enterprises and large private enterprises have established consultative mechanisms to involve trade unions in the affairs of the enterprise. TATA, for example, has an active joint management council (JMC) that enables the workers to forward their views to management. Similar structures have been established in other large



automotive companies, such as M&M, MUIL, Ford and VW. Their effectiveness is marginal, however, because neither employer nor trade unions are willing to engage each other in the management of the company.

Neither international car producers nor Indian companies have placed much emphasis on adherence to globally agreed labour standards. While they have been very aggressive in conforming with international quality standards in the production of vehicles, they have turned a blind eye to labour norms. Issues such as corporate social responsibility and ISO norms are being used more for corporate image building and as a marketing strategy. The provision in the Companies Act regarding the earmarking of 2 per cent of the company's revenue for CRS activities are being utilised with the market in view.

4 Trade Unions in the Automotive Sector: Between Conflict and Codetermination?

The automobile industry has, in recent years, experienced several strikes and periods of unrest. In the four automotive manufacturing hubs in India – Chennai in the south, Gurgaon in the north, Pune in the west and Kolkata in the east – the causes of industrial unrest were rights violations, engagement of contract/casual workers, harsh work schedules and non-payment of wages.

Some of the prominent cases of industrial unrest in the automobile industry include the following:

- A strike at the M&M plant in Nashik in May 2009 causing disruption in production. It was related to differences in wages between regular and contract workers.
- The Hyundai Motors India Ltd. (HMIL) plant near Chennai had repeated strikes during 2009 that seriously affected their best selling product the i20.
- In April, 2010 Honda had a work slowdown which caused loss of sales of its top models the Honda City and the Honda Civic.
- In November 2010 about 800 workers went on strike at the General Motors plant in Halol in Gujarat, demanding wage rise. The strike raised questions about the company's plan to start production in three shifts from the current two shifts. The company had given assurances about a wage rise, but no action was taken.



- Again in March–April, 2011 the GM plant faced another strike. GM India employs 1,600 people at its Halol plant, of whom 1,000 are permanent workers. The striking workers had formed a new union under INTUC and had alleged that they were subjected to an excessive workload. The workers alleged they were facing health hazards and the company had violated the Provident Fund (PF) Act, gratuity norms and rules of the Industrial Safety and Health Act. On the other hand, the company had declared the strike illegal. The employees also protested the transfer of some employees to dealerships from the plant. They also opposed a long-term wage agreement which the management wanted.
- In March 2011, over 4,600 employees at the Ford factory at Chennai gave 15 days' notice of strike action. Their demands included recognition of the union, discontinuing the system of sending workers home whenever there is a maintenance shutdown and a demand that there be no extra working time to make up for the 10 minute tea break.

Protests against expanding the employment of contract workers on lower pay are one of the reasons for labour unrest in the automobile industry. The share of short-term contract employees in the industry stands at more than 45 per cent and the wage disparity between the two groups varies anywhere between 70 and more than 130 per cent. The management claim that contract workers are engaged to cope with market fluctuations, but the trade union regards this policy as a means of cutting wages and depriving workers of legitimate benefits.

One further issue behind the industrial unrest is management reluctance to let workers form unions. Many worker protests in car assembling and component production have been in response to management opposition to unionisation. The most talked about took place in June 2011 at the Manesar plant of Maruti Suzuki India Limited (MSIL). The workers were demanding the recognition of a new union – the Maruti Suzuki Employees Union – along with retention of casual labourers. The company responded by sacking 11 employees (including eight officials of the unrecognised union). The industrial action at MSIL turned violent, resulting in the death of the HR manager and subsequent arrest of over 200 workmen. The arrested workers were held in prison for over three years without being charged. Earlier in 2015 they were released but not reinstated.

These cases of industrial unrest have prompted companies across the country to enter into negotiations with trade unions and also to gradually lower the proportion of contract workers. MSIL, for instance, has done



away with contract workers altogether and instead is opting for temporary workers hired directly from their industrial training institutes. Other automobile companies too have reduced the number of contract workers and replaced them either by casual workers or automation. MSIL, for example has over 400 robots working at its plant in Haryana.

5 Conclusion

Currently, there is a drive to improve working conditions in existing establishments and to create a suitable environment for new entrants, especially in the manufacturing sector. The government's »Make in India« project, under its Manufacturing Policy 2011, is a major initiative to turn the country into a global manufacturing hub. Having uninterrupted quality production is at the core of this new policy.

To achieve this, workers and their trade unions must be effectively engaged. There is, however, still reluctance on the part of employers, workers and government officials to actively engage in social dialogue. There is also a cultural problem among multinational companies and further barriers stemming from problems such as ill-equipped trade union leaders, unsupportive or biased state administration and management, nepotism, politicisation, politicians as negotiators, a time consuming judicial system, conflicting laws and inadequate resources. However, Indian trade unions remain the undisputed representatives of workers, in particular industrial workers.

In a politically and socially charged environment with obsolete governing tools, only social dialogue can work. To bridge the trust deficit between industrial relations actors opportunities need to be created for not only trade unionists but also employers and workers to meet and discuss issues of common interest. TATA has benefited immensely from such consultation and some foreign plants – including those of VW and Daimler – are engaged in consultative processes to avoid further labour friction. There is a proposal to revive workers' participation in management by reintroducing a Bill in the Parliament.

We must acknowledge that globally agreed norms are basic parameters for the promotion of social relations within national boundaries. The present automotive industry is globalised and success depends on the extent to which a production unit is able to merge local concerns with global norms.



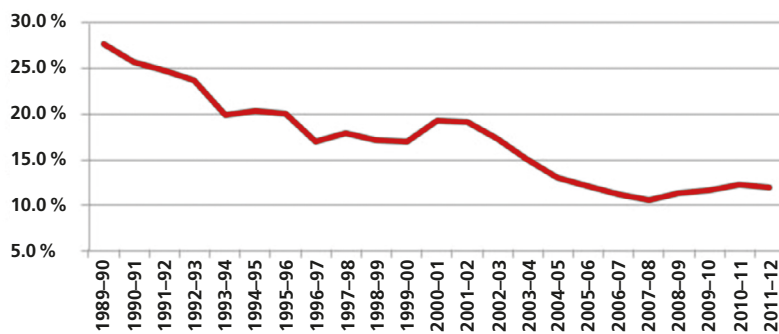
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Annex

Annex 1: Wages as percentage of net value added in factory sector, 1989–1990 to 2011–2012



Source: Computed from Table 1 – Annual Series for Principal Character, Annual Survey of Industries, 2012–2013.

Annex 2: Registered trade unions, 1996–2010

Year	Registered unions	Unions filing returns (%)	Unions submitting returns	
			Members ('000)	Members per unions
1996	58,988	12.3	5,601	773
1997	60,660	14.6	7,409	835
1998	61,002	11.9	7,249	979
1999	64,817	12.6	6,408	786
2000	66,056	11.00	5,420	747
2001	66,624	9.8	5,873	899
2002	66,544	11.4	6,973	893
2003	74,649	9.7	6,277	867
2004	74,403	7.1	3,397	647
2005	78,465	10.6	8,715	1048
2006	88,440	9.6	8,960	1058
2007	95,783	7.7	7,877	1068
2008	84,642	9.709	9,574	986
2009	22,284*	17.3	6,480	1678
2010	18,605*	15.8	5,097	1535

Source: Trade Unions in India, 2010, Labour Bureau, Ministry of Labour and Employment, GOI, Shimla.



Annex 3: Workers involved in strikes and lockouts

	Strikes and lockouts	Workers involved	Person-days lost ('000)
2007	389	724,574	27,167
2008	421	1,579,298	17,433
2009	345	1,867,204	17,622
2010	371	1,074,473	23,131
2011	370	734,763	14,458
2012	447	1,307,505	12,876
2013	198	1,057,887	3,665
2014	143	1,008,275	3,636
2015*	40	NA	446

Note: *January–April 2015.

Source: Labour Bureau, Ministry of Labour and Employment, GOI. Published in LiveMint, 2 September 2015.



Let's Talk about What We Have in Common rather than about What Divides Us

Employee Representation in the Globalised Automobile Industry: Trade Unions and Works Councils

Georg Leutert

Introduction

The representation of employees' interests in the automobile industry is a complex affair with different kinds of actors that apply varying strategies at national and international level.

In terms of actors we have to distinguish between trade unions and works councils. Both have national and international structures. In the case of trade unions we can distinguish between the international activities of national trade unions and the activities of European and international trade union federations. In the case of works councils European works councils or world works councils operate as international actors. Although trade unions and works councils engage in different kinds of interest representation there are various forms of cooperation between them.

With regard to the automobile sector in emerging economies the question arises of why talk about works councils here at all given that in the legal systems of these countries interest representation by way of works councils is either not provided for or rarely implemented. The answer lies in the fact that automobile groups with concern-wide employee interest representation act as importers of works councils and involve the workforces of these countries in them. Having no system for national works council in place, the position of a national representative in a concern-wide structure may fall to a trade unionist. In contrast to countries with dualistic systems in which trade unions and works councils are clearly demarcated both legal-



ly and organisationally trade unionists here can also be works councillors and take on a representative role in European or world works councils or in other global forms of employee representation.

In this chapter we examine, on the basis of seven theses, the extent to which works councils and »social dialogue« are suitable for asserting workers' interests in relation to global automobile manufacturers.

We should not foster any illusions, the task of asserting interests in global companies with transnational employee bodies is gigantic. However, the chances for success of initiatives on cross-border cooperation of national employee representations are much higher when priority is not given to existing differences arising from organisational characteristics and country-specific conditions but to jointly defined goals used as a basis for aligned strategies and common areas of action.

1 Transnational trade union strategies are important but in their present form they are (largely) insufficient regarding effective interest representation along entire value chains

The globalisation of the automobile industry – in other words, the complex worldwide division of labour in this sector and the ongoing relocation of production and development from the countries of the Triad (North America, Europe and Japan) to new growth regions – has for some time posed major and in this dimension unprecedented challenges for Triad trade unions and works councils. Effective employee representation encompassing an entire corporation can no longer be achieved solely by trade unions/works councils operating at the company's headquarters. For this reason and already for some time trade unions in a whole series of companies have established transnational structures and instruments in order to be able to react more adequately. The aim of such cross-border interventions is to offset the vacuum in company codetermination arising from the establishments in other countries by networking and thus counteracting corporate power.

Experience shows that this approach can be successful although to date it has not been able to get capital and labour onto an equal footing. If interest representation is pursued primarily in relation to individual companies it does not tackle the whole dynamic of exploitation in a value chain to which many other companies belong. Some therefore are calling for greater efforts in transnational cooperation and therefore promote trade union or-



ganisation along entire – that generally means world-encompassing – value chains (cf. for example, Hübner 2015 and Fichter 2015).

This requires the establishment of three conditions above all: (i) an increase in trade union organisation; (ii) a major boost in material resources in order to ensure the required coordination and (iii) finally the willingness and ability of flexible cooperation between employee representatives from different countries and companies.

The first condition is virtually self-explanatory and requires no detailed exposition. At most it needs to be clarified that in the end it is not only a matter of an increase in membership but of the ability to mobilise. Trade union systems such as the one in France show that trade unions' clout does not always depend on the number of members if they have a substantial capacity for mobilisation.

With regard to the second condition it has to be borne in mind that to date personnel resources have been limited. Usually only a single person – only in exceptional cases are there a few more – coordinates transnational trade union or works council activities at enterprise level. Even at the IndustriALL Global Union there is only one desk officer for the entire automotive sector and at the IndustriALL European Trade Union there is not even a dedicated coordinator post to handle the sector. Although other trade unions and works councils partially participate in coordinating measures they often have other tasks to perform – for example, at national level – or they have responsibility for a whole region or group of countries in which they look after several industrial sectors. If one compares such meagre human resources on the employee side with those that multinational companies are able to mobilise to represent their interests it rapidly becomes clear that employee representation bodies are chronically understaffed.

The third condition arises from the high degree of vertical integration in the automobile industry, which is well advanced and is only likely to become more so. This relates to joint ventures, cooperation, contract manufacturing and the whole supply sector with its vertical structure of sub-suppliers and sub-contractors. In order that enterprise employee representations be able to engage in monitoring and get more involved, transnational cooperation is required far beyond the confines of individual enterprises. The scope of the relevant bodies, such as European and world works councils, usually ends at the boundaries of a company group and cooperation structures beyond that are insufficiently developed. Flexible structures have to be built up that bring together employee representatives from different companies depending on topic and problem. The required coordination could/should



be carried out on the trade union side. Given the abovementioned lack of resources, however, this can rarely be found in reality.

Cooperation encompassing company groups would have a further positive effect, namely a serious attempt to address precarious employment. There are numerous cases where trade unions and works councils remain rather silent when jobs are relocated, for example, when pre-assembly works are outsourced to suppliers and sub-contractors. With the aim of safeguarding plants and permanent jobs management and employee representatives form alliances which in most cases tend to neglect the interests of precarious workers. A uniform, comprehensive approach along entire value chains would make this more difficult.

2 Works councils are very close to the company – perhaps sometimes too close – but to date a more successful model has not been forthcoming

The debate on whether members of works councils often play the role of »co-managers« because they primarily have the company's interests in view is quite a common debate.

Occasionally, the dichotomy of »boxing and dancing« is used in this context to describe the relations between trade unions and employers, on one side, and between works councils and employers on the other. While works councils encourage the social partners to dance, trade unions are assumed to seize opportunities for confrontation.

What is more effective in practice: A little dance in which people tread on another's toes now and again or a good boxing match that can end in a victory on points or a knockout? In my experience the works council model works better in the transnational field. There are a number of reasons for this. Workplace employee representatives from dualistic interest representation systems generally find it easier to reach agreement about specific common issues than trade union representatives without much of a presence, if any, in a workplace. Second, belonging to a company which often goes hand in hand with a more pronounced identification with it, establishes common ground, while trade unions tend to focus on the differences between national trade union systems. Third, works councils – both nationally and within the EU – can count on statutory provisions or binding regulations negotiated with the top management, which generally makes their work easier. Finally, another important argument is the estab-



lished practice of works councils in reaching sustainable compromises with the employer.

No doubt, some of these arguments also apply to workplace or company trade unions but only when the last point applies. Some examples:

- The focus of IndustriALL Global Union's work in the automobile sector in recent years has been the establishment of global enterprise networks which has led to a remarkable increase and intensification of cross-border cooperation. The fact that workplace employee representatives played a decisive role in this process was one of the major success factors.
- The recent expansion of relations between Germany's IG Metall and the US UAW with regard to trade union organisation of production locations of German companies in the United States represents a new and far-reaching approach to cross-border cooperation. Also in this instance it was clear from the outset that the project can be successful only if workplace employee representatives are afforded some prominence. The UAW has also invested a lot of time and energy in getting to know the German works council system and the model of social dialogue in Germany.
- The Global Framework Agreements signed so far within the sphere of operations of IndustriALL Global Union reinforce the importance of works councils: a majority of enterprises where agreements were concluded have a strong presence and tradition of works councils and it was often the European works councils that put negotiations on such agreements on the agenda.

In order to prevent misunderstandings the examples given here emphasise the importance of the interaction between workplace and non-workplace employee and trade union representatives. The deliberate transfer of much responsibility to workplace employee representatives and the expertise that works councils bring to bear represent a considerable success factor.

3 Works councils are the sole possibility for agreeing globally binding regulations with individual groups of companies in an area marked by a lack of legislative regulations

In a globalised world, in which there are no or no significant cross-border collective agreements and laws – except for the ILO's important, but fairly general core labour standards – works council initiatives nevertheless



have the potential to develop into binding regulations across the company. In this context works councils use rights and customs to conclude so-called company-wide agreements and transfer them – with the agreement of the group management – to all units of the company. There are now numerous examples of this (cf. Müller/Platzter/Rüb 2012) and the European Commission is even looking at how these transnational agreements can be legally secured. Besides numerous European company-wide agreements concluded by European works councils within the framework of company restructurings and Global Framework Agreements, VW's »Charter of Labour Relations« is an outstanding example. Even though this agreement refers to the national legislation of the countries concerned it opens up the possibility of referencing the standards and mechanisms of German co-determination. While *de jure* the legal basis continues to apply in these countries additional employee rights can come into play by drawing on the codetermination and corporate culture of the headquarters in Germany (see also thesis 6).

4 The »strong« chairman of a works council who really bothers about his or her colleagues from the periphery is a good start but not a sustainable model

An early study on European works councils (Lecher et al. 1999) analysing their functions and subsequently dividing them into a typology of four groups emphasises the role of the chairmen. It concludes, especially for European works councils whose chair is a German works councillor, that they have a key influence on the body's *modus operandi* and often use their strong position in the company to assume the role of an advocate for subsidiaries in countries that – for various reasons – do not have direct access to information from the firm's upper echelons and whose influence on company decision-making ranges from minor to negligible. A strong chair is perceived positively in the development of a transnational body and receives recognition for his or her activities from company workforces in countries on the periphery.

What is the medium- to long-term significance of the figure of the »almighty chair« in the development of a – to stick with the terminology of the study – participation-oriented European works council that is supposed to pool and represent the interests of the workforce towards the company?



There is a considerable danger that over time the role of a *dominant* chair will wear out and hinder – consciously or not – the development of the works council into a transnational actor. Workforce representatives from other countries could try to strengthen their own position and hence establish a counter-force to the chair. A dominant leader can also provoke a situation in which members will lose interest in the transnational body as such. In my view, some European works councils in the automobile industry that – explicitly or implicitly – have expanded into world works councils through the involvement of trade union representatives from other continents have not solely done so in order to establish a structure that is more adequate against the background of globalisation but because the European works councils in these companies have lost importance and energy. In case the extended European works council applies again the above-mentioned model of the *»almighty chair«* the body will sooner or later find itself in an existential crisis. By contrast, the elaboration of genuine common principles and strategies and the creation of a body in which the responsibility is distributed across several shoulders constitutes a sustainable concept and requires a different approach.

5 Cooperation is of limited help against competition between locations – there is no guarantee against plant closures

Transnational trade union cooperation and company-wide works councils are not an act of pure international solidarity but also a way of pursuing interests. The interests of employees vary substantially between the old and the new industrialised countries. Colleagues from the Triad rather pursue a strategy to reduce competition in order to safeguard their own jobs and plants. From their point of view transnational cooperation shall also contribute to a rise in labour costs in emerging economies as this will reduce the cost disadvantages at home. Although some wage cost convergence is discernible worldwide the trend has by no means developed to such an extent that lower wage costs no longer play a role in investment decision-making. Wage differences continue to be a main factor leading to restructuring and plant closures in particular in countries of the Triad. Companies generally attempt to justify such moves on the grounds of overcapacity or a lack of competitiveness. It is often very difficult to evaluate the validity of such arguments for employee representatives with the exception



of some well-positioned works council members at company headquarters who have access to relevant information and decision-makers. This leads to a key task for bodies of group-wide employee representation: they have to develop and implement strategies that address the issue of overcapacities and plant closures by ensuring a rather fair distribution of the overall production volume between locations. Nevertheless, plant closures can hardly be prevented in cases of extensive excess capacity. The best known example is the »share-the-pain-strategy« of the European works council of General Motors in 2004 and the following years which created a high level of solidarity but could not avoid a plant closure in Belgium.

6 Cars from some countries are »stained with blood«. Can anything be done about this within the framework of transnational cooperation?

Examples of unacceptable working conditions among employees in the automobile industry are less frequent than in, for example, the textile industry but they do exist. The most severe cases are related to the large number of agency workers, fixed-term employment and wage levels that do not suffice to provide decent living standards. On top of that there are legal and authoritarian systems that do not permit free and democratic trade union representation in the automotive sector.

The numerous instruments established to eliminate, among other things, such drawbacks – particularly Global Compact, OECD Guidelines, ILO standards and recommendations, Global Framework Agreements – have had little to no success so far. India's labour and remuneration system is a prominent example: the average wage of an automobile worker amounts to only six per cent of the average wage in the United States. Often almost half the workforce comprises so-called »trainees« who earn less than a quarter of the wage of workers on fixed contracts. Moreover, there is no guarantee whatsoever that a permanent job will be offered after completion of the in-house training. Many are made redundant during or after the training period of normally three years and simply replaced by new trainees. Such an approach in a country where labour costs in the automotive sector are among the lowest in the world is scandalous.

There are other countries with significant automobile activities in which worker and trade union rights are regularly violated. In Mexico and



Turkey this is usually the result of a close interrelationship between state institutions, companies, yellow trade unions and other actors.

The outlined cases represent a form of capitalism and a conduct of the multinational enterprises that pay little heed to human dignity. Therefore it would be more than justified to call for a campaign that makes consumers aware of the fact that cars from such countries are »*stained with blood*«.

Is it still appropriate when employee and employer representatives keep »dancing« even in view of countries where labour standards are unacceptably low? Can Global Framework Agreements provide a solid »dance floor« in such circumstances? Considering the fact that Global Framework Agreements always make reference to national legislation and do not foresee a mechanism to go beyond even when standards are poor suggest that the answer should be »No«. However, VW's Charter of Labour Relations, mentioned above, points in the right direction: the *export* of high code-termination standards to countries with lower standards. Furthermore, transnational representation bodies increasingly discuss – directly or indirectly – the matter of equal cross-border remuneration standards. But can collective bargaining systems be harmonised at global scale without undermining national collective bargaining systems?

Finally, the enormous issues with regard to democracy and freedom of association in some countries require broad alliances and major campaigns. The success of such campaigns will depend on the willingness and ability of employee representatives/trade unions and companies to form cooperation.

7 Only new alliances can curb the power gains of multinational companies and the international financial sector

The globalisation of the economy is progressing apace, the power of multinational companies is unbroken and the ability of national institutions to control MNCs is still limited. At the same time, the power of international financial markets is growing dramatically and multinational companies are adapting their strategies to the rules of the financial sector. This also applies to investment decision-making which is now dictated primarily by the majority of shareholders who only look after their own interests but don't care about the company as such.

If nation-states are doing less and less to curb multinational companies and the financial markets then employee representatives and trade unions



have to increase their engagement at the global level. That requires new alliances and the expansion of comprehensive networks.

The most numerous partners by far are consumers. Research confirms that in particular middle class groups with relatively high purchasing power are becoming more and more sensitive to ethical standards regarding the manufacturing and marketing of products they consider to purchase. The continuing growth of the global middle class could make this consumer orientation an even more important factor to be considered in trade union strategies.

There are opportunities for new networks that could include companies – for example, in the automotive sector – and institutions that investigate and evaluate the sustainability of companies and their production chains.

In order to help cultivate the influence of a new network culture employee representatives must appraise, pragmatically and in a targeted way, which NGOs it would be possible to cooperate with.

Conclusion

This chapter represents a clear plea for the continuation and strengthening of a pragmatic and specific transnational cooperation that puts company employee representatives at the heart of the strategy. Nevertheless a close cooperation between works councils and national and international trade unions is indispensable. Works councils that are well experienced in social dialogue can contribute decisively to the further development of this cross-border cooperation. The further development of concern-wide interest representation is needed as a platform for organizing along entire value chains. We are currently witnessing an ambivalent period: Although little has been achieved and there are shortcomings everywhere we are also seeing a rebirth of international solidarity.



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Hopeless or Hopeful

Can Global Framework Agreements Reconfigure Global Labour Relations?

Indira Gartenberg

Introduction

In the past decade, Global Framework Agreements (GFA)¹ have emerged as a new tool for corporate governance, in the face of internationalisation and increasing mobility of capital. GFAs are contractual agreements signed between large transnational corporations (TNCs) and global union federations (GUF). These agreements take a holistic view of global companies' production networks to include subsidiaries and suppliers. They provide a »framework« for setting minimum standards for employment and labour relations in TNCs and their supply chains with particular focus on adherence to the core labour standards of the International Labour Organisation (ILO). GFAs are a tool for TNC managements and trade unions worldwide to develop consultation mechanisms to influence issues concerning labour standards as well as industrial relations. As such, GFAs are characterised by a non-binding mutual understanding between TNCs and GUFs, with an inbuilt conflict resolution mechanism (Fichter and McCallum 2015).

Currently, there are 116 GFAs.² Most of them have been concluded for European TNCs. The content of all GFAs is based on the ILO's Core Labour Standards to include:

- freedom of association (the right to form and join a trade union);
- the right to collective bargaining;
- the prohibition of discrimination;
- the prohibition of forced labour and child labour.

1 Also known as International Framework Agreements (IFAs).

2 Global Unions website: <http://www.global-unions.org/+framework-agreements-+.html> (accessed on 6 November 2015).



In addition to the above, GFAs may include other principles particular to a TNC's social responsibility agenda. Each GFA, to some extent, is therefore unique and may include other aspects of work and working conditions, such as occupational safety, the rights of physically challenged people, equal pay for equal work and so on. Some GFAs also include an implementation procedure, suggesting a general framework wherein the local senior managers are responsible for its implementation, periodic evaluation and regular reporting.

GFAs in the Automotive Industry

Within the automotive industry, eleven TNCs have signed GFAs. Of these, six GFAs cover original equipment manufacturers (OEMs), namely, BMW, Daimler, Ford, PSA Peugeot Citroen, Renault, Volkswagen; and five cover auto-component makers, namely Bosch, Freudenberg, Leoni, Röchling and ZF. As charters of social responsibility, the GFAs of these corporations aspire to provide a »human face« to the TNCs' operations worldwide. In a global economy that lacks any substantial regulations on labour applicable across national boundaries GFAs, at least in theory, seem to have the potential for creating a global foundation for labour relations, integrating various levels of stakeholders in the production and supply chain. But how far and how well have the GFAs been implemented? Let us find out from the Indian case.

GFA Implementation: Some Insights from India

The core findings presented in this chapter are informed by my work as the principal country investigator in a cross-country study in 2009–2011, examining the implementation of GFAs in four countries, Brazil, India, Turkey and the USA.³ Within the metal sector, the study focused on two

3 This multi-country study entitled »Organization and Regulation of Employment Relations in Transnational Production and Supply Networks: Ensuring Core Labour Standards through International Framework Agreements?« was conducted during the period October 2009 to March 2011. It was headquartered in the Freie Universität, Berlin and directed by Dr Michael Fichter, Dr Jörg Sydow and Dr Markus Helfen. In India, the study focused on eight transnational companies operating in India; two in each of four sectors, namely, chemicals, construction, metal and services. A total of 25 interviews were conducted with 36



German automotive TNCs with operations in India; one, an OEM making luxury cars, and the other, an auto-component maker. At the end of the study, a workshop was conducted with the respondents to present the findings of the study and to get their inputs before finalising the country reports. The workshop also proved to be a useful tool in bringing together various stakeholders from a diverse range of corporations, different types of trade union organisation (local, regional, national, global), academics, labour lawyers and HR/industrial relations consultants, facilitating a first-of-its-kind dialogue among them.

The German OEM and the German auto-component maker – referred to here as Metalcorp1 and Metalcorp2 – have subsidiaries in Chakan auto cluster (located on the outskirts of Pune city in Maharashtra⁴). It was found that neither corporate subsidiary was aware of the existence of the GFA. Neither the trade unions nor the human resources managers were aware of the GFA signed at their respective headquarters. Obviously, both the management and the trade union at headquarters had put no effort into informing the corporation's subsidiaries about the GFA, nor had they provided copies of the document. Our research provided first-time knowledge of the existence and content of the GFA to the trade union and HR management. Consequently, what was originally planned as mere information collection also became the occasion for disseminating information pertaining to the GFA.

Before discussing the implementation of the GFAs – or the lack of it – it is important to provide some background of the work and working conditions in which the GFAs are to be examined. For the purposes of this chapter, we shall delve only into the findings from Metalcorp1.

people, including trade union members and officials, HR managers, small ancillary suppliers, labour lawyers, HR/industrial relations consultants, representatives of national trade union federations in India and representatives of Global Union Federations in India. The interviews were semi-structured and we did not have a questionnaire to be filled out by any of the participants. Rather, we had an interview guide which helped us to look for emerging themes from responses to semi-structured interviews. At the end of the data collection and data analysis phase, a workshop was organised to share the findings with the respondents, as well as to get their inputs before finalising the country report. In October 2015, I interviewed one of the trade unionists from Metalcorp1, and a trade union activist implementing the GFA in another German TNC (non-auto), and got a statement on the GFA implementation from IndustriALL. In this chapter we present findings from data collection in both of these phases.

4 Maharashtra is a state on the west coast of India. We interacted with Metalcorp1 trade unionists only in Chakan, whereas in Metalcorp2, we were able to interact with trade unionists in both the Chakan and the Jalgaon plants.



Issues at Metalcorp1

The Metalcorp1 factory at Chakan assembles luxury cars. Out of a total of 22 product offerings, eight are locally produced, according to one media report, which implies that a substantial proportion of materials and parts are sourced from local manufacturers rather than being imported. The company employs some 1,300 employees in a wide range of labour categories. There are 255 permanent workers in the blue-collar category and approximately 665 non-permanent workers who perform the same tasks on the assembly line alongside their permanent counterparts. These non-permanent workers on the assembly line can be sub-contracted, trainees or »EPP« (in an Employment Promotion Programme). Furthermore, a second group of sub-contracted workers is in the service category,⁵ made up of 125 security personnel, 50 gardening staff, 115 house-keeping staff and 50 canteen workers. There are no data for the number of management staff. Interestingly, the company website mentions a total of 300 employees only.⁶

Wage differentials are enormous. The wage of a permanent shop-floor worker in Metalcorp1 is approximately Rs 35,000 (€493) plus benefits, while that of the non-permanent contract workers is only about half that. These workers are on the payroll of smaller private companies, with its set of permanent and non-permanent workers. Sub-contracted work therefore has an additional benefit for the company in that these workers are not eligible for the benefits paid to permanent workers. According to the company's HR managers, Metalcorp1 wages are perhaps the highest in the field, and their labour standards and benefits much better than those of other auto companies in the auto cluster.

The »EPP« workers are recruited through a state-government-run apprentice programme called the Maharashtra Employment Promotion Programme (MEPP), which exempts employers from four of the existing labour laws, namely, the Minimum Wages Act, 1948, the Employees' State Insurance Act, 1948, the Employees' Provident Fund Act, 1952 and the Workmen Compensation Act, 1923. Metalcorp1 relies heavily on the MEPP for its shop-floor recruitments. The state-government provides the company a nominal reimbursement of stipends for the EPPs. For instance,

5 Like the ones on the production line, the sub-contracted service workers too are on the payroll of private companies, which have Metalcorp1 as their client.

6 The trade union activist also mentioned that due to the expansion of the current production facility, there were also (approximately) 250 construction workers on-site.



Table 1: Employment and remuneration at Metalcorp 1

Category of worker	No. of workers	Wage / remuneration	Benefits	Union membership
Permanent workers	255	Rs 35,000 (€479)	Plus benefits	250
Non-permanent workers for production				
• of which: Sub-contracted for assembly line	200	Senior workers: Rs 15,000–17,000 (€205–233) Junior workers: Rs 10,000–12,000 (€137–164)	No additional benefits	Nil
• of which: Trainees	265	Rs 11,500 (€158)	No additional benefits	Nil
• of which: EPPs	200	Rs 9,500 (€130) stipend – labour law not applicable, no payslip	Rs 300 stipend from state (paid to company)	Nil
Non-permanent for services (sub-contracted)	~340	Not known	Not known	Nil

Data provided by the trade unionist in Metalcorp1; figures are not exact. The amounts have not been cross-checked with the HR managers.

Source: Author's research

a Class 10-passed ITI⁷ EPP is eligible for a monthly stipend of Rs 300 (€4) from the state, whereas Metalcorp1 pays the same trainee a monthly stipend of Rs 9500 (€130).⁸

The EPPs in Metalcorp1 are trained for a period of six months. They usually get an extension for another six months, which is renewed again for a period of one year. At the end of this process, there is no guarantee of a job and most have to leave the company, only to be replaced by a new batch of EPPs. However, the EPPs that show promise and a good grasp of skilled work are retained and taken on as trainees. Hence, it appears that after one or two years of working as EPP, workers finally make it to the »trainee« category, even though they are clearly not an entry-level

7 A diploma from the Industrial Training Institute (ITI), a government-run polytechnic providing subsidised technical training. The ITIs were established by the Directorate General of Employment and Training (DGET), Ministry of Labour and Employment, Union Government of India. The entry into most programmes at ITI is easier for young people who have education level of Class 10 (national or state board exam after 10 years of schooling, after kindergarten) and above.

8 Data from an interview with Metalcorp1 trade unionists during the first round of data collection (in 2010).



employee by this time. The EPPs and trainees are differentiated by their remuneration and uniform. The EPPs also do not get a pay-slip, whereas the trainees do. From the trade union narratives, it is clear that the EPPs and trainees perform all the tasks that their permanent/contract counterparts undertake, for a lot less in terms of remuneration and nothing by way of benefits.

Status in labour contracts is reflected in trade union affiliation. Only the 250 permanent employees of the company are members of the factory-level trade union, which is independent of any political affiliation. The contract workers, trainees and EPPs are not members. Most unions focus on safeguarding their members' interests, and at the level of the factory, this invariably means the interests of the permanent workers. The creation of this in-group means the exclusion of the non-permanent workers on-site, whose role as employees is supposed to be of a temporary nature.

Recent media reports (2015) indicate that the company is planning a further expansion with the creation of a large new production facility. Also, the new managing director has stated that the company is now focused on increasing localised production and sourcing of components. Going by the employment trends in Metalcorp1 thus far, the majority of these new recruits are likely to be non-permanent workers.

Workers in my interviews repeatedly talked of constant »mental harassment« in addition to the heavy workload, which caused them physical strain. If there were complaints with regard to their work on the assembly line, foul language, public humiliation at morning briefings and punishments would be hurled at them. One way of punishing workers, mentioned by the trade union members, was to make them stand outside the HR office all day long. Workers found these punishments humiliating. The trade union members also mentioned that those workers who were more assertive in voicing their grievances would invariably be transferred to other departments requiring more strenuous work. Information that came to the management from headquarters almost never percolated to the union or the shopfloor, and the clearest evidence of this lay in the fact that hardly any of the company-wide announcements of the headquarters were ever translated into Marathi⁹ or communicated to the trade union or employees.

9 Marathi is the regional language of Maharashtra state. In Pune, Marathi is widely used in business, as well as in informal settings as the main language of communication.



The »After Effect«

It seems that merely by asking questions our study had triggered interest in the »unusual phenomenon« of a GFA. The workshop that followed a few months after the interviews proved to be a catalyst in keeping this interest alive, especially among trade unionists. From my interactions with Metalcorp1 following the workshop, it was clear that some never-before-seen changes had occurred. The trade unionists could hardly believe that these positive changes were taking place, especially those related to the humiliating treatment of workers. According to the Metalcorp1 trade unionist, the immediate »after-effect« of the study and the workshop could be seen in the much-reduced incidence of expletives and foul language towards shop-floor workers; the first Marathi translation of the corporation's »Code of Conduct« document sent by HQ; and most important of all, a permanent end to certain methods of disciplinary action, such as forced standing. Subsequently, the trade unionist also mentioned the distribution of a bonus granted by the TNC headquarters to all its employees worldwide, in celebration of a corporate anniversary. The trade union members and activists of Metalcorp1 were elated by these developments and firmly believed that they were a direct result of the information and interest generated by our study and the workshop on the GFA. Even before these concrete changes took place, the HR managers' behaviour towards one of the trade union activists of Metalcorp1 (who attended the workshop) had improved considerably. Momentum was building up and it gathered further steam due to the workshop.¹⁰

However, from a later inquiry it turned out that these positive changes were »one-off gains« handed out by the management. In the absence of an active forum to educate, discuss and reflect on the situation of workers to build on these wins, or channel the trade unionists' inquisitiveness regarding the GFA, the initial optimism generated by the positive changes at Metalcorp1 faded over time.

10 In one of my telephone interactions with the Metalcorp1 trade unionist who attended the workshop, I was told that when the official invitations for the workshop were emailed to all the participants, the HR manager was surprised to see the trade unionist's name so high up the list (at No. 5), whereas his name was towards the bottom (No. 16). While on our part, the numbering of respondents was related only to the dates on which we interviewed them, the HR manager assumed that because his blue-collar shop-floor worker was higher up the list, he was somehow »more important« to us than the HR manager himself. Through the workshop, the trade unionist was in turn surprised at the congeniality of the HR manager towards him, sitting beside him during the workshop, offering to bring food to his table during lunchtime and slipping in his requests to uphold the company's reputation at a forum of this sort.



Hopeless or Hopeful?

Metalcorp1 is a good representation of the situation of workers in Chakan's auto cluster. The emerging question, however, is, does the situation need to be this grim in the future? How could trade unions articulate their concerns and assert their collective rights despite an environment that thwarts the healthy development of trade unions?

The case of another German TNC with plants in India to some extent presents an inspiring example.¹¹

The German TNC provides engineering solutions worldwide for electrification, automation and digitalisation. The secretary of the trade union in one of its plants in India participated in a diploma programme of the Global Labour University (GLU) called »ENGAGE«, designed to help labour activists and trade unionists to acquire additional knowledge for trade union work.¹² In the programme he learned about Global Framework Agreements and found out that the German TNC where he worked had signed a GFA. On his return to India in 2014, he conducted several capacity-building sessions for some 60 union members, using visual tools and modern instructional methods, which helped participants to better grasp the wider picture of labour relations of global enterprises. Similarly, the trainer went on to handle concepts such as globalisation and the ways in which it affected people's lives, including their own. Following this, the trainer delved into the specific contents of the GFA at the German TNC, laying stress on building a »push« from below and thinking beyond local issues. The workshop also emphasised that the implementation of the ILO's core labour standards enshrined in the company's GFA was »not only necessary but also obligatory«. In a paper he later wrote about his experiences in conducting these workshops, »At the end of the workshop, participants were given the task of making a report on the implementation of various clauses of GFA in their respective units, and also creating databases of contract and agency workers, and workers in the supply chain. They were instructed to identify the areas of non-compliance with GFAs on the shop-floor and communicate them to the central union leadership«.¹³

11 The names of the TNC, the union and the trade union general secretary have not been mentioned to protect the latter's identity.

12 See <http://www.global-labour-university.org/216.html>

13 Excerpt from the trade union activist's paper presented at the X Global Labour University conference entitled »Sharing the Gains – Containing Corporate Power« held in Washington DC from 30 September to 2 October 2015.



The workshops had triggered wide interest among the participants, especially the younger ones. One area of improvement he noted was to chart out a course of action for the near future. However, when he suggested that training on the GFA should include non-permanent workers as well, management refused to cooperate.

It is important to note that the GFA as an instrument is only as good as the actors make it. Strong trade unions are at the core of successful GFA implementation. The encouraging examples from the German TNC cited above and from the Brazilian trade unions in the automotive sector prove this to be the case.¹⁴ Learning, awareness, subsequent dissemination of knowledge and regular follow-up facilitate vibrant union activity and maintain the rhythm of unionisation.

What Is to Be Done?

Stakeholders operating in various arenas supporting the GFAs; in the automotive sector, actors such as TNC works councils at the headquarters level; IndustriALL; national unions such as IG Metall; and other actors in the respective subsidiary countries need to be united on a singular outlook as far as GFA implementation is concerned. Factionalism in the labour movement creates a distraction, and isolation of company-level unions dilutes the collective strength of workers. The need of the hour is to prioritise awareness and knowledge of trade union activists, especially those who will take on the responsibility of educating others. Evans notes that »effective tools for transnational contestation are being developed, but it is even clearer that the organisational resources of all types, that are being devoted to the global campaigns would need to expand exponentially if labour is to succeed at the global level« (2010: 365).

However, as is evident from the GFA workshop held at the German TNC in India, merely educating is not enough. Interview respondents and workshop participants get energised and curious to know more about various aspects of their work and company, and want to discuss various thoughts

14 The FES workshop in Sao Paulo (2015) highlighted several examples of successful use of the GFA in Brazil. In one case, the GFA was used at one of the German automobile plants to pressurise the company management to allow the non-permanent workers to get a 30-minute lunch-break (the same as the permanent workers) instead of a 15-minute one. Several such demands, especially relating to working conditions, are frequently made by the strong unions. In most of these cases, the GFA is used as a leveraging tool to further push for these demands.



triggered in their minds after the awareness workshops. In the absence of a forum to promote such a dialogue and channel the ideas that emerge from it, a golden opportunity to build on this enthusiasm is lost. Hence, while education and awareness are essential, without a solid inbuilt follow-up plan, the efforts will always produce suboptimal results. The creation of a space for frequent discussion of the possibilities of creatively using the GFAs, along with a certain amount of initial »hand-holding« to channel the participants' thoughts will prove to be useful in this process. So far as the GFA goes, implementation must rely strongly on the local trade unions in the subsidiaries (and suppliers, wherever possible). Waiting for a primarily management-driven process might be a hope in vain. To this end, the trade union should become the basic »unit« for focused inputs on education, follow-up action and reporting on the GFA. Dedicated personnel are also needed, such as project officers at the level of the global unions, to facilitate GFA implementation.

Secondly, workshops on GFAs could be an arena for capacity-building modules. Audio-visual methods, as well as modern communication apps (which are used widely by most workers in the subsidiaries of auto companies) could further optimise the efficacy of these efforts. The workshop itself could »unpack« or deconstruct seemingly complicated concepts through an interactive-discussion model, so as to help participants to think and jointly »workshop« their ideas together, instead of a lecture-model, within the framework of which the trainer talks most of the time and the audience listens. Workers do have a sense of their work, their colleagues and their collective situation, and given the right environment, they are able to articulate their concerns. Any educational efforts must respect this.

It must also be noted that there is a need to educate HR managers in the local subsidiaries about GFAs.

A GFA forum could also act as a platform for facilitating discussions among various actors, but more specifically among workers from different companies in the same auto cluster. This would also promote »social learning« as they would learn from each other's experiences. Hence, a continuous circle of education, action and reflection is the need of the hour. The mode is: Workshop Learning and awareness → discussing → goal-setting → action-plan → implementation → follow-up reflection workshop → sharing of experiences → re-learning + social learning + knowing about successful examples of GFA implementation → discussing challenges → updated action-plan. And repeat.



Too Ambitious? Not Really!

At this point, it would be good to state that the above ideas should not be regarded as too ambitious or complicated. Trade union organisers could engineer plans that continuously gather momentum, with periodic coming-together of individuals who have obtained knowledge and the requisite skills to implement GFAs.

Merely signing a GFA is not enough, because it is only as good as the actors make it. Company works councils, GUFs and local stakeholders can play a key role in invigorating the trade unions to take ownership of GFA implementation. Thus far, there are few examples of successful use of GFAs in local conflicts. The question is, should GFAs be used only when there is a conflict, or should they be tools to strengthen the unions at every level by empowering the trade unionists and enhancing the quality of their union participation? Both are needed. The former will still be counted as »successful implementation«, and the latter will ensure more sustained progress in the course of GFA implementation trajectories. The GFAs could be used as a tool for making demands whenever a conflict arises, and could also be used to get the more fundamental processes in place, such as providing union membership across employment categories, pressurising employers to follow through with their commitment to »equal pay for equal work« and so on. Small incremental changes will build the momentum of the union, and with the right support and resources, the positive effects have the potential to snowball.

Conclusions

The 2015 FES workshop in Brazil not only brought to the fore trends and perspectives in the automotive sector in the emerging economies, it also highlighted the perils of global value chains in the face of intense competition among all countries of the world, and the states within those countries. So far as India is concerned, the government's newest »Make in India« campaign promotes localised production across 25 sectors (including the automotive sector), by inducing competition among state-governments to attract FDI. The state-governments have no choice but to reduce or drop some of their legal requirements and reduce or completely eliminate protective legislation on labour and land in order to secure these deals with large TNCs. For instance, in India, the state of Maharashtra has reduced the number of procedures and time involved in getting electricity connec-



tions for corporations, while Punjab has exempted 131 types of industry from pollution-consent requirements.¹⁵ Each state is in the race to position itself as a better location for doing business and tempted to make unbridled compromises, which could have disastrous impacts on the land, labour and environment. Not only India, but most countries, in both the Global North and the Global South are now looking to localise their production and become exporters. Against this heated competition around the world, the GFA as a tool for global governance stands at an evolutionary crossroads, especially as far as labour is concerned.

The Metalcorp1 case provides a glimpse of the conditions in which workers and their unions in TNC subsidiaries operate in India. It is evident that the state-government is willing to bend over backwards to support industry, often at the cost of workers' wages and safety. For the benefit of Metalcorp1, not only did the state-government provide dismally low stipends to the EPPs, but it also released the employer from its responsibilities by exempting the company from important protective labour legislation. The constitution of India guarantees fundamental rights to every Indian citizen, but the state-government systematically undermines this by introducing schemes and programmes such as the MEPP.

The situation is just as grim in subsidiaries of other TNCs in the auto cluster, whether they have signed a GFA or not. Workers in large Indian companies that are not TNCs also find themselves in similar situations, or worse.¹⁶ It is important to appreciate that trade unions do not have an enabling environment in which they could attempt to articulate their concerns and assert their collective rights. Perhaps the trade unionists in TNCs also need to look at innovative ways to organise all kinds of workers, rather than maintain an exclusive »in-group« for a privileged minority of permanent workers. Inclusive approaches by unions in the informal sector, which emphasise community-based mobilisation, could provide suitable road-maps in this direction (Gartenberg, forthcoming).

Even as the crisis deepens for labour worldwide, there is hope for solidarity-networks of trade unions at local, national, regional and transnational levels. GFAs open up space for dialogue and exchange among various actors within the global production arena, provided trade unions start acknowledging their existence and utilise them effectively for their collective futures.

15 See: http://articles.economictimes.indiatimes.com/2015-04-29/news/61652780_1_world-bank-s-land-bank-business-ranking (accessed on 5 November 2015).

16 For instance, see the case of workers and trade unions in Maruti-Suzuki in Manesar, Gurgaon, India.



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Building National Alliances for the Future of Industry

Armin Schild and Inge Lippert

1 Introduction

Industrial policy is becoming increasingly important. In the BRIC countries (Brazil, Russia, India and China), which are in the centre of this book, industrial-policy measures are widespread. In particular, countries such as Brazil and China have in the past pursued active industrial policies, which in large part formed the foundations of their economic rise (Schüller 2012). In Europe, active industrial policy has long been in the doldrums. Since the international economic and financial crisis, however, this has started to change: the focus has shifted and industrial policy has returned to the political agenda. In the current economic policy debate there is even talk of a »European Industrial Renaissance«.

The turnaround is due to the crisis driven insight that a high industrial share of gross value added (GVA) is good for economic development. In the meantime, many efforts have been made to strengthen industry in Europe. One of the driving forces in this direction is the European Commission, which launched a new industrial policy initiative in 2010 with the aim of increasing the industrial share in Europe to 20 per cent of gross value added by the year 2020 (European Commission 2014). Many EU Member States nonetheless continue to suffer from the effects of the crisis, first and foremost those states that have allowed their industrial production to be undermined and have struck out on a path of »de-industrialisation«.

But even states that have maintained a strong industrial base, such as Germany, face new challenges. They are confronted by far-reaching structural transformation due to globalisation, digitalisation, demographic change, weak growth rates in the European single market and, not least, climate change. They must ensure that their productive industry undergoes



the necessary adaptation and modernisation and integrate the dynamically changing framework conditions in a fiscal matrix industrial companies can cope with. In practice, this means that both private and public investment rates have to be increased, in particular investments in the modernisation of infrastructure, as well as in research and development. The different starting points in this respect have made the call for a more modern and sustainable industrial policy in Europe even louder.

In the search for solutions tripartite alliances have once again come to the fore. The Alliance for the Future of Industry, founded in 2014, is one such alliance in Germany. The goal of the alliance, in a triad comprising politics, trade unions and business associations, is to make concrete arrangements and develop priority measures to ensure the future viability of the German economy. In this framework the concerns of companies and employees are to be at the forefront on an equal footing. The new alliance thus takes up the tradition of »concerted action« that goes back to Karl Schiller's »new economic policy« in the 1950s (Besenthal 2004).

2 Deindustrialisation in Europe, Impacts and New Industrial Policy

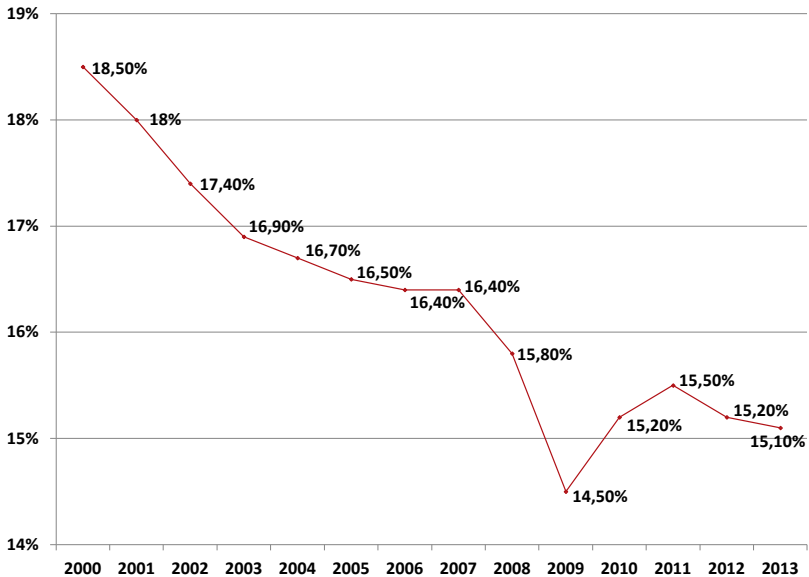
Not only individual states, but Europe as a whole has undergone a creeping deindustrialisation in recent years. The reasons for this are manifold. They include technological changes, but also outsourcing, the shifting of production to other countries – especially the BRIC states – and economic structural change. Additionally, notions of modernity in Europe have overwhelmingly – and often with wild exaggeration – been tied to the service sector over the past 20 years, while industrial branches have taken a backseat.

Against this background the significance of industry in Europe has declined continuously. In 1970 the share of the manufacturing sector was still a high 27.8 per cent. Since then it has fallen relentlessly and now – despite a slight increase after the crisis – has settled at a low level of just over 15 per cent (see Figure 1).

Due to this loss of significance large parts of the European value creation chain are gone and whole sectors threaten to disappear from the European area in the foreseeable future. This development has led to a major loss of industrial jobs. Overall Europe has lost well over 4 million jobs in the industrial sector in the past 15 years. In the EU15 countries the number



Figure 1: Development of manufacturing in Europe
(as a percentage of GVA)



Source: Eurostat

of industrial workers fell by 17.6 per cent between 2000 and 2012. The biggest falls in employment occurred in the United Kingdom (34.9 per cent), Portugal (32.9 per cent), Ireland (29.4 per cent), Spain (22.8 per cent) and France (22 per cent) (Heymann/Vetter 2013).

These downsizing processes are particularly worrying because good jobs lost in industry cannot easily be replaced by jobs of equal value in other sectors. In Europe wages in manufacturing industry are well above European average earnings. Thus the economic and social situation of European workers is in jeopardy in a number of respects. For this reason, too, deindustrialisation is now regarded as an increasing problem.

The industrial policy initiative of the EU Commission is supposed to halt the downward trend in industrial value creation and reverse the process. The cornerstones of this new industrial policy are higher investment in companies, research and qualifications, as well as easier access to capital and markets – in particular for SMEs and start-ups – and the promotion of the European single market (EU Commission 2014).

The goal of kick-starting a »renaissance of industry« in Europe has political rather than economic significance. But the effects are already visible.



Many EU Member States have also undergone a change of course and are working on boosting their manufacturing sectors. Countries such as the United Kingdom, Italy and Spain have put in place new industrial-policy programmes and instruments over which the trade unions also have increasing influence (Gerlach et al. 2015). In some instances, new alliances between employers, employees and national governments have emerged, such as the »Productive pact for competitiveness« in France (Bertrand/Gauron 2015).

3 The German Economy – From Dinosaur to a Lead Model

Germany is an example of a developed industrialised country that, in contrast to many of its neighbours, has not taken the path of deindustrialisation, or at any rate to the same extent as comparable European industrialised countries. The maintenance of industrial value creation and its constant modernisation and further development have been on the agenda of successive German governments in recent years. Although their ideas have differed in the details – and in some respects also fundamentally – the goal of a strong industry was not in question. Accordingly, in Germany the share of manufacturing industry in the gross value creation of all economic sectors has remained constant over the past 10 years.

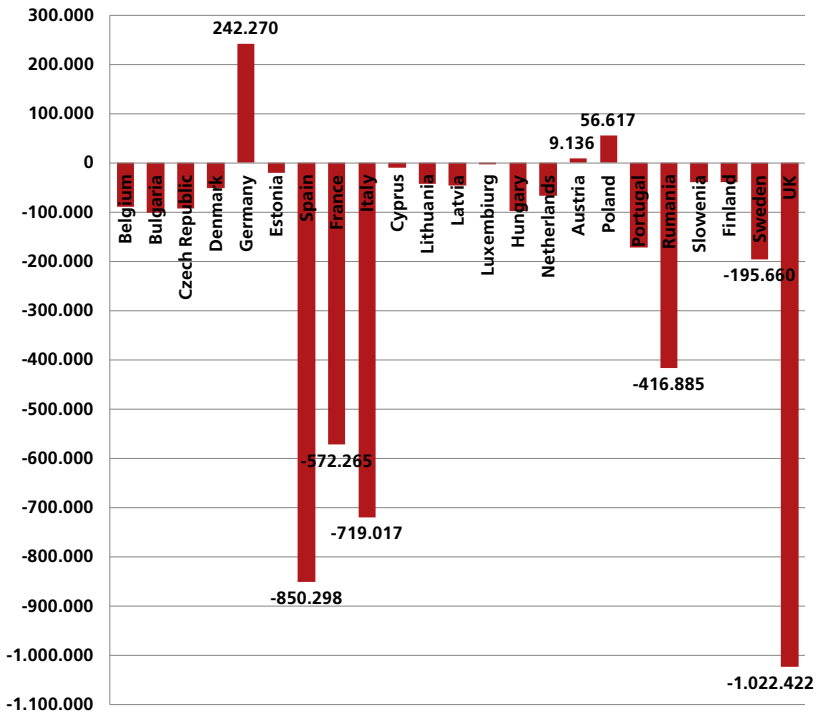
By international comparison the German economic model has a number of key features:

- (i) a strong industrial base with an above average contribution on the part of industry to gross value creation (22.3 as against 17.5 per cent worldwide);
- (ii) a high export orientation on the part of industry with rising export surpluses;
- (iii) a pronounced »hub function« on the part of industry in the value creation chain;
- (iv) a link between high competitiveness and innovation with qualified workers, good working conditions and social innovations.

Thus among the European industrialised nations Germany was not only one of the few in which jobs increased in industry between 2005 and 2014, but the country that created by far the most jobs in the industrial sector during this period (242,270 new jobs as compared with 56,617 in Poland and 9,136 in Austria) (see Figure 2).



Figure 2: Net job losses/job creation in selected countries (2005–2014)



Source: Eurostat.

Up until a few years ago Germany's industry-oriented economic model was still considered to be outdated. In the meantime, it has come to be regarded as a paragon by many countries. The main reason for this is that, after the collapse in growth due to the international crisis that commenced in 2008, the German economy, borne up by its export industries, was able to recover rapidly.

The success of the German model was in part due, of course, to the boom in the large developing countries, such as China. The investment goods in demand in these countries largely matched the specialisation profile of the traditional core branches in Germany – machines, electronics and vehicles – and thus boosted the export of these products. On top of that, the well-functioning social partnership and cooperative relations in German companies contributed to the fact that industry was modernised permanently, which is the ultimate reason for success. On this basis it was also possible to avoid high unemployment as a consequence of the crisis.



Against this background the whole industrial sector has remained a key innovation cluster and growth driver in Germany. High value creation and dynamic innovations go hand in hand with qualified and secure labour. The strength of Germany's economic base is not founded on its traditional industries alone, however. It is crucial that in particular knowledge-intensive industry has gained ground there. Between 1995 and 2010 value creation by knowledge-intensive industry grew by over 50 per cent (BDI 2013).

The close links between the industrial goods sector and business-related services have led to a highly competitive network of economic structures. Industry and services are today finely intermeshed and together are responsible for a burgeoning value creation. Thus service providers are to a considerable degree providers for industrial branches, so that a large proportion of services have become central components of industrial products. In this input network the industrial sector drives the development of services and is thus a key motor for the development of business-related services. Thus the growth of such services is derived to a not inconsiderable extent from the growth of the industrial goods sector.

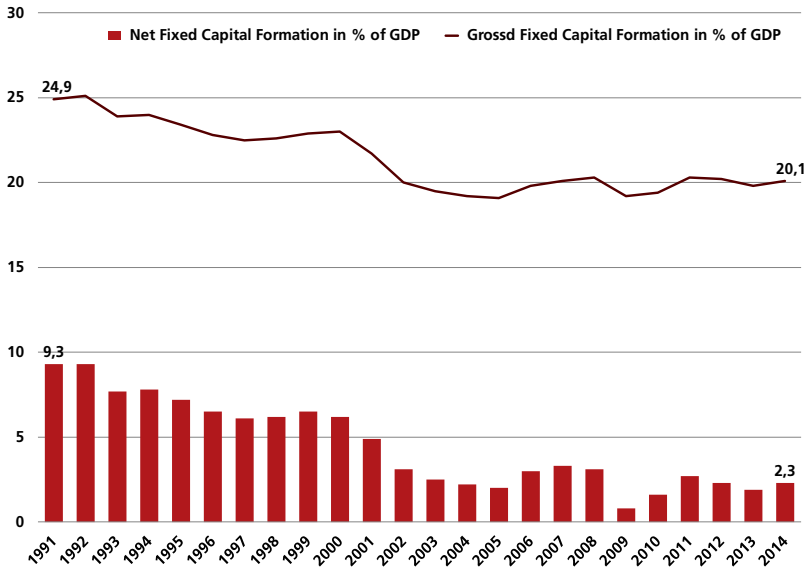
4 Clouds Ahead: Challenges to the German Model

Germany's industry-based model undoubtedly displays great strengths. Although no longer »world export champion« Germany is still a leading export nation, which together with some other states is highly competitive in global markets. Other strengths include highly trained engineers and other employees who make a substantial contribution to Germany's status as strongest national economy and industry in Europe, characterised still by complete value creation chains and a mix of large, global companies and highly productive and specialised small and medium-sized enterprises.

However, these strengths face development tendencies that threaten long-term competitiveness. One particularly worrying development is the weak investment dynamic in recent years. As shown by Figure 3, the proportion of gross fixed asset investment in Germany between 1991 and 2014 fell from 24.9 to 20.1 per cent. Even more dramatic was the development of net fixed asset investment, which fell during the same period from 9.3 to only 2.3 per cent of GDP.



Figure 3: Development of investment in Germany



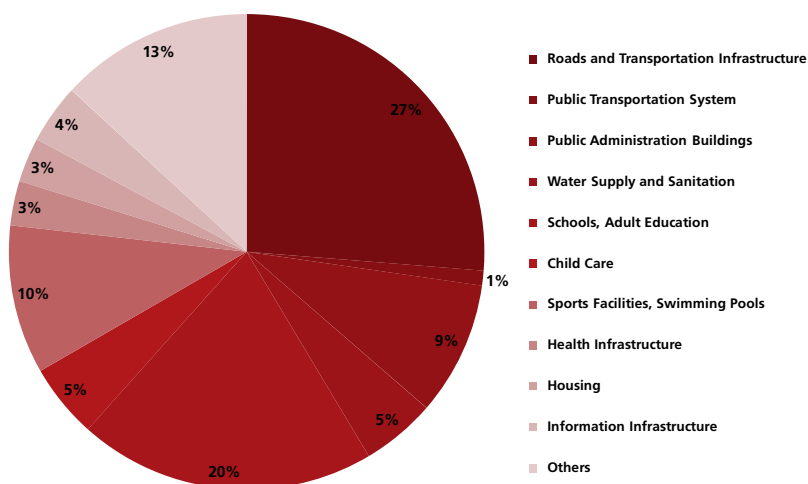
Source: Destatis.

A dual trend can be seen in this development: companies are barely investing in renewal of the capital stock and the state with a long registered negative investment in infrastructure is neglecting one of its core tasks. In particular, there is a strong need for remedial action in the transport sector in Germany. As recent studies have shown, there has been an annual shortfall of around 4 billion euros merely for maintaining the substance of transport infrastructure (Kunert/Link 2013). As a result, infrastructure is crumbling in broad swathes of the country: the German state is »squandering its inheritance«, weakening itself as an industrial location and calling into question its future viability.

Most glaring is the investment backlog in the municipalities. According to the calculations of the Association of German Cities and Towns (*Deutscher Städtetag*) the current municipal investment gap stands at 118 billion euros (Deutscher Städtetag 2014). Besides transport, education and social infrastructure are in particularly dire straits. Because many German municipalities are short of the cash they need to invest in infrastructure a »national investment pact for municipalities« is required to halt any further decline of municipal infrastructure.



Figure 4: Investment needs of municipalities



Source: KfW Kommunalpanel 2014.

But investment is needed in Germany not only to maintain infrastructure. It is also important for the development of future key areas and technologies, which will create the jobs of tomorrow. The energy transition in particular will require enormous investment. New financial resources must be directed towards new power lines, but also new power stations and storage technologies, as well as innovations to boost energy efficiency. Digitalisation is another area requiring investment for the future. This goes beyond technological innovations in new approaches, such as »Industry 4.0« or broadband expansion. If Industry 4.0 is to represent an opportunity for employees there must also be massive investment in education and training; in other words, in human capital.

Besides the state, private investors also have a part to play in these key areas. But here too the figures are worrying. The report by the expert commission »Investment in Germany« shows that net fixed asset investment (not including housing) by the non-state sector has fallen from over 80 billion euros a year in the early 1990s to a mere 13 billion or so in 2013. This creates a problem in particular for capital stock in manufacturing industry, which has fallen by 3 per cent since 2009 and risks obsolescence (Expert Commission 2015).



These developments put in jeopardy the future viability and competitiveness of Germany's industrial base. On top of that there are unfavourable prognoses concerning structural changes due to so-called social megatrends. The implications here range from an expected lack of skilled workers through disruptive technological changes due to the digital revolution and the energy transition to issues of energy efficiency and CO₂ reduction.

Far-reaching processes of transformation and adaptation thus loom over German industry over the medium and long term. They call for solutions in every dimension: economic, social and environmental. Future viability thus requires more than the development of new approaches to nurture a modern and innovative industry. Such approaches must also be shaped in a way that takes due account of employees' knowledge and know how, secures jobs and creates new employment. This is because the strength and thus also the future of German industry lies in outstanding, innovative quality products produced by motivated, well qualified employees and specialists in decent jobs within the framework of robust collective agreements.

5 The Tripartite Alliance for the Future of Industry in Germany

Given the new challenges, even in Germany the strengths of industry have to be re-established on a daily basis. This was the aim of the tripartite Alliance for the Future of Industry founded on 14 November 2014 by Minister for the Economy and Energy Sigmar Gabriel, together with the then first chairman of IG Metall Detlef Wetzels and the president of the Federation of German Industries (BDI) Ulrich Grillo.

5.1 Members of the Alliance

The Alliance for the Future of Industry in the meanwhile consists of 17 partners. Besides the three initiators the BMWi, IG Metall and the BDI there are 14 other alliance partners: the Chemical Industry Association (VCI), the Automobile Industry Association (VDA), the Machinery and Plant Manufacturing Association (VDMA), the Central Association of the Electrical Engineering and Electronics Industry (ZVEI), the Central



Federation of the Construction Industry (HDB), the Federation of German Steel Industry (Wirtschaftsvereinigung Stahl), the Association of German Chambers of Commerce and Industry (DIHK), the Confederation of German Employers' Associations (BDA), the employers' association Gesamtmetall, the Employers' Federation for the Chemical Industry (BAVC) and on the trade union side the German Trade Union Confederation (DGB), the Union of the Mining, Chemical and Energy Industries (IG BCE), the Union for Construction, Agriculture and the Environment (IG BAU) and the Food, Beverages and Catering Union (NGG).

The alliance as a tripartite initiative made up of the government, industry associations and industrial trade unions is supported by the »Future of Industry network«, which as a »two-party institution« with a proper office with the participation of the industrial associations and trade unions coordinates and supports the work of the alliance and ensures that its resolutions are implemented.

5.2 Topics of Negotiation

The substantive core of the alliance comprises five working groups composed of representatives of the social partners and tasked with working out new compromises on key issues for the future. The working groups are thematically oriented towards central problems and fields of activity that are crucial for the future of industry in Germany. The topics being addressed are as follows:

Working Group 1: Acceptance – Attractive Industry

In Germany there is sometimes very low acceptance of major technological projects. Working Group 1 deals with this issue. It is concerned with breaking down existing prejudices and conveying a positive image of industry as motor of social and economic advance, as well as of individual quality of life. In order to build new bridges the Working Group favours the development of an infrastructural consensus that uses new forms of conceptual civic dialogue. This appeals to an enhanced citizens' participation – especially in relation to major projects – that goes beyond mere information and transparency, by offering genuine opportunities for involvement at an early stage.



Working Group 2: Industry Based on Strong Investment

A further aim of the alliance is to ensure competitiveness by more investment and innovation. Investments are key to economic growth, employment and prosperity. That applies both to private and public investments. In both areas Germany has fallen well short for many years. The Working Group discusses new approaches to boost private and public investments and in doing so makes it clear that investment must also include investment in infrastructure, research and development and further training for employees.

Working Group 3: Future of Work in Industry and Industry-related Services

Working Group 3 deals with the future of work, which is an increasingly important field for industrial policy, too. It deals, on one hand, with the question of how qualification and (further) training needs are changing in a world of work undergoing digitalisation and demographic change. On the other hand, it discusses how new forms of working and workplace arrangements can be handled and how technological change must be designed to make use of the opportunities in the labour market of the future and to minimise risks. Good working conditions, participation and codetermination options, as well as decent wages are thus key levers for safeguarding skilled labour.

Working Group 4: Value Creation Structures of the Future

Due to digitalisation and globalisation, company value creation structures have changed substantially in recent years. Value creation chains are being internationalised and are increasingly becoming dissociated from the structures of individual companies or industrial locations. At the same time, information technology is pervading all sectors and redefining value creation processes, with the result that IT and internet companies are increasingly working their way into the operations and value creation chains of traditional branches, such as metal working and chemicals. Working Group 4 analyses these changes and examines whether and to what extent the opportunities for digital networking are being sufficiently exploited in Germany and what innovation models are forming as a result of these changes.



Working Group 5: International Competitiveness

But industry is undergoing worldwide transformation not only because of structural changes in value creation chains. Changes in global markets due to the rise of the BRIC countries are posing new challenges to the traditional industrial countries. Against this background, Working Group 5 addresses a broad spectrum of issues: the European framework conditions for international competitiveness (EU industrial policy, EU single market, investment policy, for example, the Juncker Plan), trade policy, foreign trade policy, research, innovation and technology policy, economic, social and labour policy conditions and energy, climate and environmental policy conditions in Germany.

5.3 Work Programme and Actions

In order to generate a public debate on these issues the Alliance for the Future of Industry has come up with a comprehensive work programme. Within the framework of this programme over hundreds of individual activities are to be held in 2016 and 2017 with the participation of numerous actors. The Future of Industry Network has been tasked with implementation.

The planned activities include:

- a »national conference on industry« in spring 2016;
- an »action week« with more than 370 individual activities by industrial companies, business associations, trade unions and works councils in June 2016;
- a »European conference on industry« in October 2016;
- an »international symposium on industry conference« in February 2017; and
- many other activities, such as conferences on special topics, industrial dialogues on the future of industry in different regions and municipalities, meetings with regional industrial initiatives and reports and studies.

5 Conclusions

Worldwide, industry currently faces new challenges. This applies both to the emerging economies, which after a period of major economic growth are currently experiencing a slowdown, but also to the developed industrial



countries, which have to rebuild or modernise their industries and improve their infrastructures.

Even in a country such as Germany the strength of its industrial base must be continually reinforced and established as a strategic task of active economic and industrial policy. This increases the need for a modern industrial policy, which lays down the guidelines for key issues of the future. Such a policy is required in order to take advantage of the opportunities of digitalisation (Industry 4.0, new business models) for companies and employees; to promote investments and innovations; and to provide good conditions for investments, trade and global competition. A key objective here is to seek stabilising arrangements within the framework of social partnership that help companies and employees to cope with change innovatively. This includes comprehensive, forward-looking qualification initiatives to provide for skilled workers, as well as measures on more integration and inclusion in the labour market.

The policy task is to address these needs and develop a medium- and long-term agenda that refers to the complex challenges. Tripartite alliances, such as the abovementioned Alliance for the Future of Industry, can create a good basis for this. On one hand, a comprehensive modernisation of industry in accordance with the requirements we have described requires new social compromises that can be developed only in dialogue between the social partners. On the other hand, a government capable of acting must play its part in such an alliance: mediate between the social partners, take up compromises once they have been worked out and converting them into a functioning industrial policy. Tripartite alliances at national level have often failed in the past. As tripartite alliances are recast the reasons for failure should be carefully analysed and avoided in the future.



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