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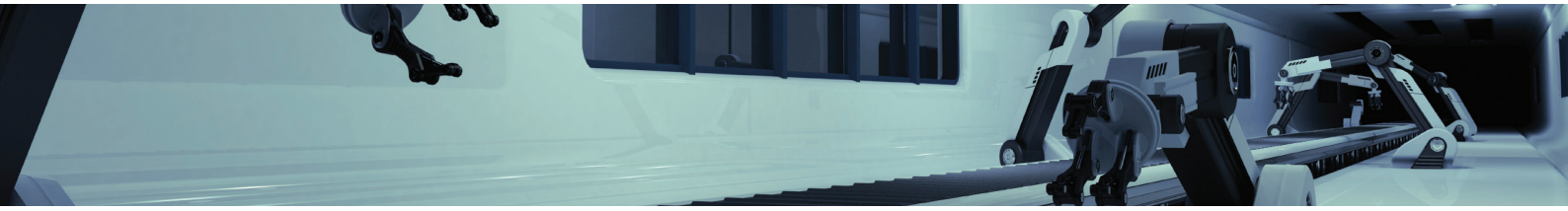

The World's Industrial Transformation Series

The New Geography of Automotive Manufacturing

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Summary points

- The car industry remains one of the cornerstones of global manufacturing, not only in terms of turnover, employment and trade, but also for its crucial role in introducing new technologies and organizational methods. The crisis has not led to a complete redrawing of the automotive industry landscape, but simply accelerated some of the trends already in motion.
- The location of production has changed dramatically in recent years. In 2009, for the first time, more cars were produced in emerging markets than in the United States, Europe and Japan combined, and China overtook Japan as the largest producer and one year later it produced twice as many vehicles as Japan. BRIC countries now produce one car out of three.
- It is not easy to distinguish between demand and supply shifts; capacity may move to emerging economies because production there is cheaper and more efficient and/or because demand growth is brisker.
- The global economic crisis has magnified pre-existing challenges, accelerated the rebalancing of global economic activity between industrial and emerging economies and forced car manufacturers to take emergency measures to rescue their businesses.
- The industry will continue to be global, with new players (especially from China and India) not only increasing their share of fast-growing emerging markets, but also gradually becoming capable of challenging the incumbents in Western markets.

Introduction

The role of the car industry during the 20th century cannot be underestimated. At the global level, the International Organization of Motor Vehicle Manufacturers (OICA) estimates that today about nine million people – representing more than 5% of the world's total manufacturing employment – are directly involved in making vehicles and parts. If auto manufacturing were a country, it would be among the top 10 largest economies in the world. The multiplier is also huge. The European Automobile Manufacturers Association (ACEA) estimates that each direct auto job supports almost another five indirect jobs in the community – a total of more than 12 million jobs in Europe alone.

The economic importance of the industry, however, extends well beyond the quantitative dimension. Mass production, the modern multidivisional form of business organization, and just-in-time – arguably three of the most revolutionary developments in the 20th-century economy – all originated in car companies (respectively Ford, GM and Toyota) with a very recognizable geographical footprint (Detroit and Japan). In this sense, changes in the car industry are bound to reverberate throughout the whole global economy.

> 'If auto manufacturing were a country, it would be among the top 10 largest economies in the world'

Which countries and regions will come to dominate the industry in the next decades? What can firms do to best position themselves in the changing climate and take advantage of the next generation of opportunities and technologies? How will the global economic crisis affect the future competitive advantages of different economies and companies? This paper analyses the changes in the auto industry and suggests some pointers towards answers to these questions.

Changing auto-manufacturing geographies

New hierarchies in world production

The auto industry is relatively global, with 40 car-producing countries worldwide, although far fewer are capable of developing models. Emerging economies are quickly becoming major production locations, in line with broader trends in other sectors. It is not easy to distinguish between demand and supply shifts; in other words, capacity may move to emerging economies because production there is cheaper and more efficient and/or because demand growth is brisker.

The world's production of motor vehicles (including passenger cars, light vehicles, trucks and buses) reached all-time record levels immediately before the global economic crisis of 2008–09, hovering around 70 million units per year in 2006–08. In 2009, production dropped to 60 million units – roughly the same level as in 2003. But by 2010 vehicle production had already risen to a new all-time high of 78 million (according to data from OICA). While world production grew at around 3% annually during the past decade, performance differed significantly among the main centres. Indeed, the geography of the automotive industry has changed dramatically in recent years:

- The United States and Japan, which accounted for more than 40% of world production in 1997, have seen their combined share fall to 22% in 2010.
- In 2009 China surpassed Japan for the first time as the world's largest producer. One year later, it produced twice as many vehicles as Japan.
- Also in 2009, production in emerging markets overtook that in developed ones (North America, Japan and Western Europe) for the first time. In the decade 2000–2010, the share of emerging markets in global production has risen from slightly above 25% to over 57%. Of the 29 million increase in the number of vehicles produced in emerging markets, 16 million are attributable to China alone.
- From less than one in ten at the end of the 1990s, the proportion of cars produced in the BRIC countries (Brazil, Russia, India and China) had increased by 2010 to one in three.

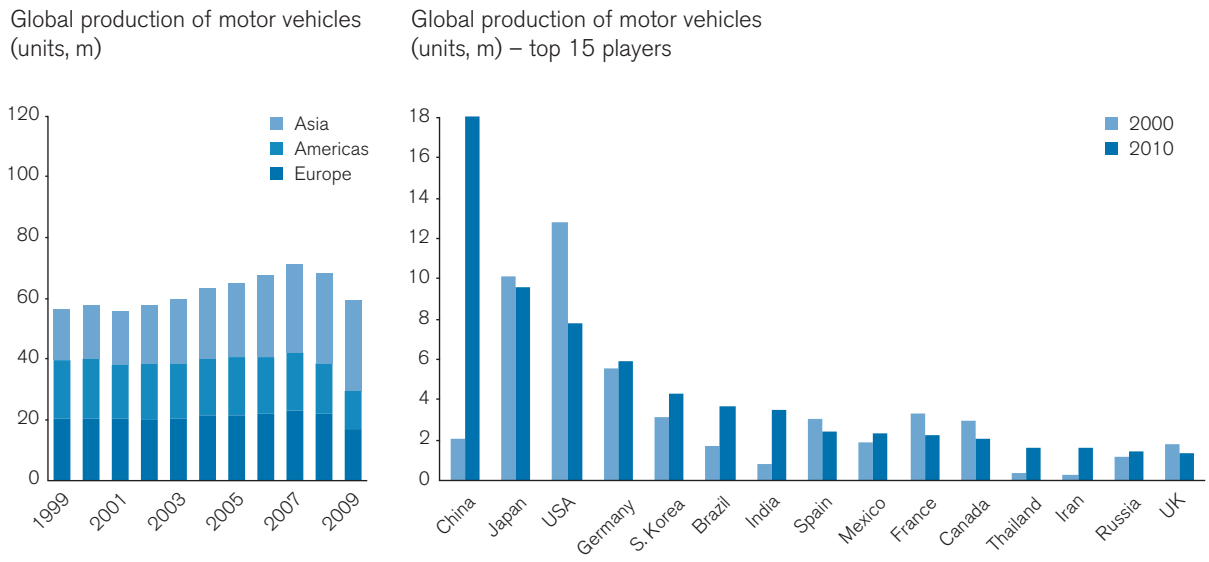
In Asia, production in China and other emerging countries (including South Korea) accounted in 2010 for almost 80% of the total, from 40% a decade before, while Japan's share dropped from 60% to less than 25%. Latin American and Central/East European countries have more than doubled their shares of production in their respective continents during the last decade. Indeed Central and Eastern Europe has rapidly become a key region in the automotive sector: Slovenia, the Czech Republic and Slovakia are now the countries in the world with the highest production of cars per inhabitant (followed by South Korea, Germany, Japan and Belgium).

If emerging markets were the 'winners' between 1999 and 2009, the major losers were the countries with an older tradition in automotive production, such as the United States (–7.3m units), Japan (–2m), Canada (–1.6m), France (–1.1m), the United Kingdom and Italy (both around –0.9m). In the United States, Canada, Italy and the United Kingdom, vehicle production halved during the decade. Germany is a different case: national manufacturers now produce more cars abroad than at home (as recently as 1995 only a third were produced outside Germany), and yet total national production rose between 2000 and 2010.

At world level, taking into account the relative saturation of the developed markets and the expected rapid growth of demand in emerging markets, it is reasonable to expect new car sales growth not to exceed 2.5–3.5% a year. Under these assumptions, in 2020 the annual number of new vehicles produced and sold will be around a third higher than now, surpassing 100 million. Europe and the Americas will continue to produce around 20 million vehicles each, while the main contribution to growth will come from Asia, spurred by the fast growth of the regional market (see Figure 1).

Understanding the main trends in automotive production also requires an analysis of company-level production figures. Despite the emergence of new producers (principally Chinese), the sector remains highly concentrated. The top five automotive companies – each producing in at least eight countries – account for almost 50% of global production, the top 10 for more than 70%, and the top 15 producers for more than 80% (see Table 1).

Figure 1: Production of motor vehicles (1999–2009)



Source: Authors' elaboration on OICA data; authors' projections

Table 1: Production of top 15 world automotive players

Company	Country	Production (units, m)			Difference	World share (%)			Difference
		1998	2006	2009	1998–2009	1998	2006	2009	1998–2009
Toyota	Japan	5.2	8.0	7.2	+2.0	9.8	12.1	12.0	+2.1
GM	US	7.6	8.9	6.5	-1.1	14.3	13.4	10.7	-3.6
Volkswagen	Germany	4.8	5.7	6.1	+1.3	9.1	8.6	10.0	+1.0
Ford	US	6.6	6.3	4.7	-1.9	12.4	9.4	7.7	-4.6
Hyundai	Korea	0.9	2.5	4.6	+3.7	1.7	3.7	7.7	+6.0
PSA	France	2.2	3.4	3.0	+0.8	4.2	5.1	5.0	+0.8
Honda	Japan	2.3	3.7	3.0	+0.7	4.4	5.5	5.0	+0.6
Nissan	Japan	2.6	3.2	2.7	+0.1	4.9	4.8	4.5	-0.4
Fiat	Italy	2.7	2.3	2.5	-0.2	5.1	3.5	4.1	-1.0
Suzuki	Japan	1.3	2.3	2.4	+1.1	2.4	3.5	3.9	+1.5
Renault	France	2.3	2.5	2.3	0.0	4.3	3.7	3.8	-0.5
Daimler*	Germany	4.5	2.0	1.4	-3.1	8.5	3.1	2.4	-6.1
Chana	China	–	0.5	1.4	+1.4	–	0.8	2.4	+2.4
BMW	Germany	1.2	1.4	1.3	0.0	2.3	2.1	2.1	-0.2
Mazda	Japan	1.0	1.4	1.0	0.0	1.8	2.1	1.6	-0.2
Total (global)		53.0	66.5	60.5	7.5	100	100	100	–

Source: Authors' elaboration on OICA data

*Daimler-Chrysler in 1998

Asian producers were the main 'winners' of the last decade. The Japanese were the most successful, thanks to organizational innovation, proper product positioning and outstanding intuition about emerging trends (e.g. Toyota's success with hybrid-engine cars). While all European car manufacturers faced broadly similar problems (stagnant sales, harsh competition, inflexible labour markets), some of them found relative solace in their control over local markets. In particular, the German brands continue to command a large domestic market share, and this is also true to some extent for PSA and Renault in France and Fiat in Italy. On the other hand, and despite the fact that world production is still dominated by a 'Triad' composed of Europe, the United States and Japan, the Detroit 'Big Three' (GM, Ford and Chrysler) were the real 'losers'.

An analysis of company data by production country highlights additional trends. The majority of world production – 55.6% in 2009 – still takes place in the home market of each producer (considering the North American Free Trade area as a whole for US auto manufacturers, and the whole of Western Europe for European producers). Although still high, this ratio had noticeably declined from 68.3% three years earlier: in fact during the rapid boom-and-bust cycle of the past three years, off-shoring accelerated and the level of international production increased further. If the degree of globalization has not increased even more it is because Chinese and Indian producers have grown so rapidly and contributed to 'domestic production'.

While traditional players are, on average, increasingly internationalized, those from China, India and Russia are almost entirely producing in their home market.[1] The

1 Emerging-market OEMs, apart from numerous Chinese producers, include two from India, two from Russia and one from Malaysia. Argentina, Brazil and Mexico made unsuccessful attempts to set up domestic manufacturers after the World War 2. Nonetheless, some parts suppliers from Brazil and Mexico have become multinationals themselves, with plants in Central/Eastern Europe and China. Dale Jorgenson, Masahiro Kuroda and Kazuyuki Motohashi, Productivity in Asia (Cheltenham: Edward Elgar, 2007).

impressive increase of Chinese production during the last decade is an effect not only of the investments made by the top OEMs (Original Equipment Manufacturers) – PSA, Volkswagen,[2] Ford, Honda, Mazda, Mitsubishi and Toyota, totalling 3.4 million vehicles yearly – but also of the growing contribution of local players. In 2006 only four local Chinese producers were capable of producing 100,000–150,000 vehicles each. In 2009, only three years later, there are no fewer than 17 Chinese vehicle producers, of which 11 produce more than 150,000 cars per year. However, only one, Chana, surpasses the one million unit level and is ranked among the top 15 global producers. The current structure of the Chinese automotive industry reflects an early stage of development and further consolidation – driven by the state – must be expected. The cost advantages of the Chinese manufacturing industry, and hence its competitiveness, will remain significant during the next decade, despite the expected growth of labour costs (already visible in some areas of the country, even if accompanied by higher productivity).

The Chinese market doubled in size from 2003 to 2008 and is now the world's largest (despite extremely low car density, at less than five vehicles per 100 inhabitants). Foreign carmakers account for around 70% of new car sales, but this share is expected to fall below 50% in the next decade. However, Chinese vehicles are still not up to the world-class standards required to compete in the more mature markets. Some are exported, mostly to other developing countries, and at any rate they are always targeted at price-conscious customers. In order to leap-frog on new technologies and to better position Chinese cars, the government has promoted the use of more fuel-efficient and less polluting vehicles through various measures. A pilot programme launched in 2010 in five cities (Shanghai, Shenzhen, Hangzhou, Hefei and Changchun) subsidizes the purchase of electric and plug-in hybrid cars. The money is paid directly to carmakers, enabling them to reduce the vehicle price accordingly. The government also supports the construction of charging stations and battery recovery networks in the five cities. Nationwide, there is a much smaller subsidy to reduce the price of fuel-efficient cars with engines under 1.6 litres.

Trade flows are also affected by the new hierarchies in world production and the disintergration of production affecting most sectors worldwide: over the 1980–2006 period, world trade in automotive products rose almost eightfold. From 2000 to 2008, the average annual change was 10%. In terms of net trade balance, the contrast among the three poles of the 'Triad' is clear. In 2008 Japan and the EU recorded very sizeable surpluses, of $155 bn and $109 bn respectively, while the United States had a $88 bn deficit. Between 2000 and 2008, the participation of the ten largest emerging economies (including South Korea and the United Arab Emirates) in global automotive trade has risen from 10.7% to 16.6%; interestingly, over this same period the EU has managed to augment its extra-regional exports from 12.3% to 15.2% of total trade, while the combined weight of Japan, the United States and Canada has fallen from 37.4% to 27.1%.

Demand trends: new consumers on the doorstep

In the 'Triad', around 430 million vehicles are in circulation – the so-called 'vehicle park'. BRIC countries host a further 90 million vehicles. Vehicle density (the number of cars per inhabitants) is not uniformly distributed. For passenger cars, the number is around 50 per 100 people in the developed world. In contrast, car density is much lower in emerging economies – two cars for every 100 inhabitants in China and India – and obviously the growth potential is high.

The main factor explaining international differences in car ownership is the level of income and the relative income elasticity with regard to car purchases. A simple estimate suggests that car density takes off when GDP per capita surpasses $5,000, as has happened during the last 15 years in most East European countries that are now EU members. Once a middle class emerges that can affords small cars, new car sales start booming, partially replacing the imports of used cars from rich markets. Above $30,000 in GDP per capita, the car market gets close to saturation, and an increase in GDP per capita translates into only very small increases in car density. National income inequality

2 For Volkswagen cars alone (excluding Audi and light commercial vehicles), China became the world's largest production base in 2009.

is also relevant to explaining trends in car purchases: when inequality is rampant, the demand for luxury and premium brands rises fast.

In the last two decades, car density increased in the majority of the countries in the world, including in the more mature markets; however, in the latter the sales of new cars were more or less stable (in Europe) or even declining (in the United States and Japan). In contrast, the BRIC countries, and many emerging markets more generally, are in the 'take-off' phase and a rapid increase in car density can be expected during the next decade. Moreover, in the emerging economies the number of people entering the middle class will continue to grow, thus sustaining purchases of a wide range of durable goods. An upper-middle class – with $30,000 of GDP per capita in PPP terms – is rapidly developing as well: between 2009 and 2015, around 123 million people are expected to join these ranks, three-quarters of them in emerging markets.

Demographic factors – especially size of population and urbanization levels – are also important in the evolution of the automotive industry. The effects are mixed. On the one hand, growing population and rural-to-urban migration will sustain the demand for transportation vehicles, although this phenomenon will mainly affect emerging markets. On the other hand, a large and increasing part of the population will restrict its daily travel to short or medium distances, very often within urban areas. The objective of improving traffic flows in urban areas and reducing emissions could, in the longer term, introduce a ceiling on the increase in the number of cars in circulation. This effect will initially be limited to large Western cities, where alternative modes of transportation are more developed (public transport, car-sharing, two-wheel vehicles, etc.), and only later reach emerging economies. Almost everywhere, the average driver will be richer, older and more likely to be in an urban area than was the case one generation ago, and his (or in fact much more often her) preferences will also be different. All these factors combined will favour small and low-emission segments (even in the United States, where average car size has always been much larger than in Europe and Japan) and possibly greater individual differentiation.

In sum, future demand will be influenced by the ongoing shift in relative wealth and economic power towards emerging countries, especially in Asia. Hence the next two decades will probably see an automotive market with two main faces, as described below.

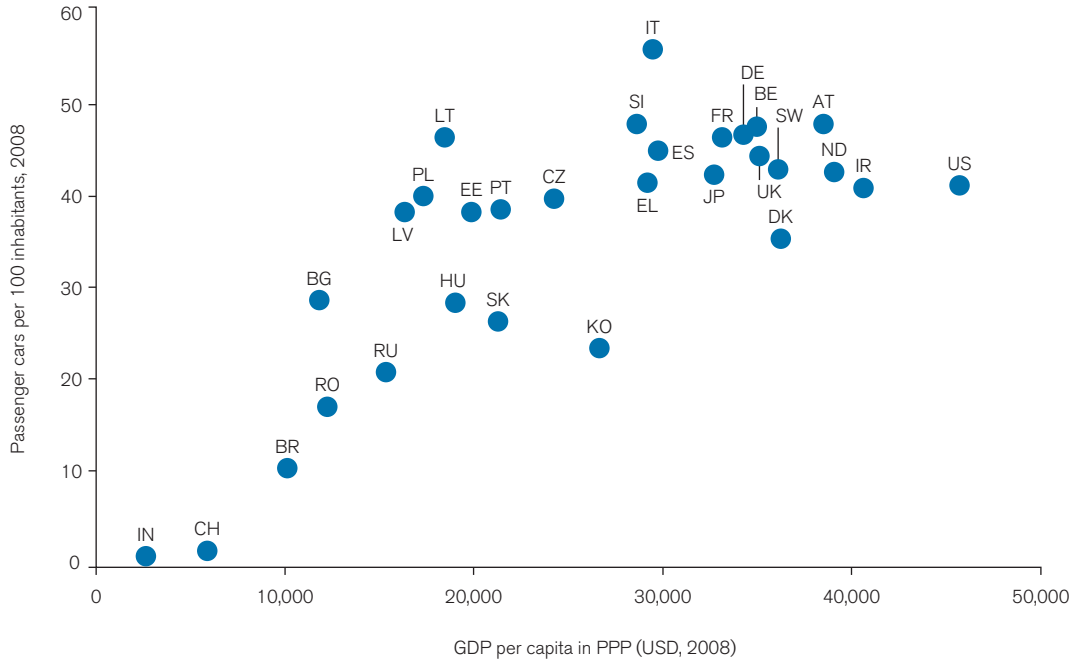
Growing consumerism in emerging markets: the boom in car sales in most emerging markets will push the vehicle park to grow fast. Sales of imported used cars will grow first, followed by a boom in new car sales (initially in the small/medium-sized segment). Buyers will stimulate the ultra-low-cost segment. The Tata strategy of producing the Nano, the cheapest car in the world, will be followed by others. Multinational OEMs will also start producing affordable 'world cars', to be sold with few modifications in any emerging market. At the same time, middle-class consumers will devote a larger part of their wealth to cars.

Increasing sophistication in more mature markets: Western markets will remain very relevant, given their size and their role at the frontier of innovation. Growth will be driven by the substitution of existing vehicles and supply-driven innovations, strictly related to technological advances. Ageing drivers will pay increasing attention to technological content, safety equipment and fuel efficiency. However, in the more mature markets the automotive sector will have to be supported occasionally by incentives (in the form of scrap incentives or fiscal benefits). Concerns related to fuel efficiency and pollution will convince policy-makers of the need to facilitate the expensive transition from conventional to electric and low-pollution cars. In addition, incentives will represent the necessary medicine to overcome crises and sudden demand drops (as happened in the 2008–09 crisis, when 'cash-for-clunkers' programmes were introduced in all major markets), until the industry remains characterized by overcapacity and harsh competition.

Some of the challenges – from diverging demand trends in mature and emerging markets to growing sensitivity to global warming and greenhouse emissions, and questions about appropriate corporate governance models – are not totally new, but in the 21st century the urgency and the intensity of the changes appear more relevant than in the past.

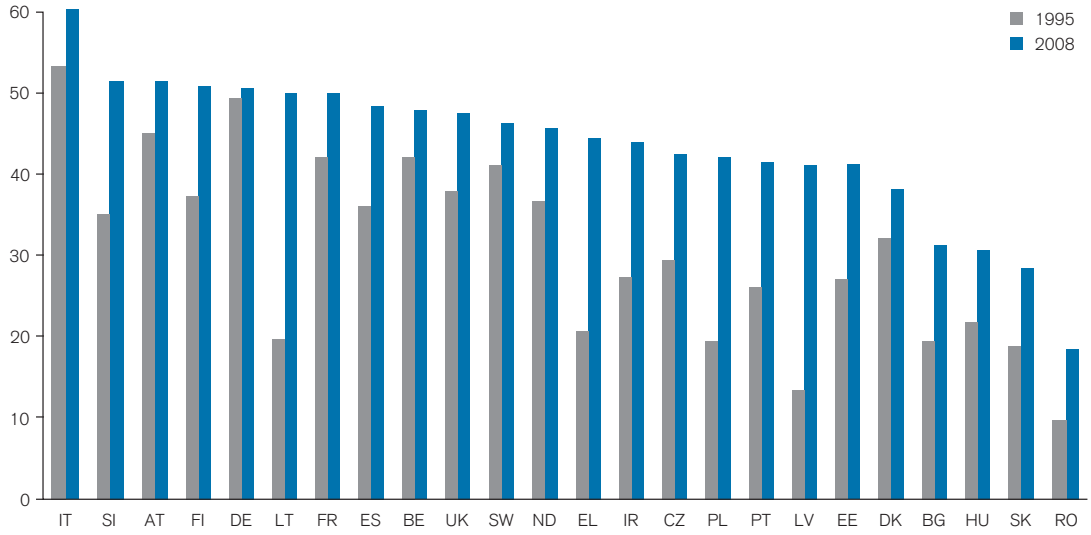
Figure 2: Car density and the vehicle park

Per capita income and vehicle park density (2008)



AT - Austria
BE - Belgium
BG - Bulgaria
BR - Brazil
CH - China
CZ - Czech Rep.
DE - Germany
DK - Denmark
EE - Estonia
EL - Greece
ES - Spain
FI - Finland
FR - France
HU - Hungary
IN - India
IR - Ireland
IT - Italy
JP - Japan
KO - Korea
LT - Lithuania
LV - Latvia
ND - Netherlands
PL - Poland
PT - Portugal
RO - Romania
RU - Russia
SI - Slovenia
SK - Slovak Rep.
SW - Sweden
UK - United Kingdom
US - United States

Passenger cars per 100 inhabitants in Europe (1995 and 2008)



Sources: ACEA, Eurostat, IMF

Increased customer sensitivity on environmental issues, and especially the need to reduce carbon dioxide emissions, has become a dominant political concern across the world. If 'conventional' combustion engines will continue to play a major role in the medium term, other solutions (such as biofuels, electricity, natural gas, hydrogen and other innovations) will become increasingly interesting for specific consumers, creating particular niches for sophisticated Western consumers. This trend will be stronger if oil prices remain high (driven by the higher demand for energy, especially in emerging markets, which are becoming leaders in many energy-intensive manufacturing industries). European and Japanese producers, traditional leaders in non-conventional engines, may be challenged by Chinese ones in the future. To ensure the mass adoption of such innovative solutions, any new fuel system will require public support, in the form of financial incentives during early phases of development, and investment in the relevant infrastructures.

As with the reduction of greenhouse gas emissions, technological innovations will be introduced to enhance safety. Impressive advances have been recorded in recent years with active safety systems (braking, lighting, different driver assistance, etc.) and passive ones (airbags, protection bars, etc.). Driving-assisted vehicles (cruise control, lane-keeping functions) have already been introduced in the market and will become more widespread. Vehicle-to-vehicle and vehicle-to-infrastructure communication, including the connection with ICT infrastructure is the next frontier. Needless to say, environmental and safety improvements will not spread evenly around the world, given their direct impact on cost and hence affordability (a more sensitive issue for consumers in poor countries).

Corporate strategies after the global economic crisis

All the above-mentioned factors are affecting the global business strategies of the main OEMs. The global economic crisis has magnified pre-existing challenges, accelerated the rebalancing of economic activity between industrial and emerging economies and forced car manufacturers to take emergency measures to rescue their businesses. In particular, the crisis hit OEMs with an already massive overcapacity (estimated at between 20% and 35% in relation to the level of demand, with overcapacity lower in Europe and higher in the United States). Over the past two decades manufacturers were forced to maximize volumes and sales in order to optimize capacity utilization: this usually entailed considerable price discounts and cut into the margins of all but the most luxurious brands. Declining profitability for many players was one of the consequences.[3] And overcapacity, a feature of the industry for decades, will remain one of the principal structural challenges for the future. If the rate of growth during the next decade remains the same as in the previous ten years, world vehicle production will not reach the current level of installed production capacity (i.e. potential production) of 110 million. Nowadays OEMs are far from producing at full capacity and, even in the (unrealistic) scenario where production capacity does not increase, a decade will not be sufficient to absorb current overcapacity.

Companies have been undertaking various steps to mitigate the progressive deterioration of profitability:

- *Consolidation*, which, in the case of OEMs, assumed different forms. In the 1990s and early 2000s, mergers and acquisitions were prevalent, leading to the dominance of large automotive groups such as GM or Volkswagen. Later, strategic alliances (such as Renault-Nissan) and joint ventures aimed at single projects (e.g. common platforms, engines) became more popular.
- The *relocation* of facilities in low-cost areas, driven by lower production costs (mainly labour[4]) and consid-

3 It is interesting to note that car manufacturers, despite operating in a capital-intensive industry, display very high ownership concentration levels. For six European makes (BMW, Fiat, Daimler, PSA, Renault and Volkswagen), the largest shareholder (a family in four cases, a public-sector entity in two) owns on average 27.6% of shares. It is surprisingly difficult to find comparable data for US and Asian firms.

4 On the supply side, labour costs remain one of the main drivers, favouring emerging economies. Capital availability, the quality of infrastructure, transport costs, labour productivity and government support are additional factors. Numerous emerging countries – some Central/East European countries are the best examples – made tremendous efforts to improve the business environment and reduce taxation levels to attract the needed foreign direct investment.

erations related to local demand. Insofar as the impact of labour costs is higher for small and medium-sized cars, low-cost areas are mainly attractive for producing smaller cars. The development of new large factories in emerging markets contributed, moreover, to the mentioned overcapacity at a global level. In some specific cases, relocation could occur within the same country: in China, from the coastal areas (where labour costs are increasing fast) to the inland areas; in Brazil, from the São Paolo-Rio de Janeiro-Belo Horizonte triangle to the northeast, where global OEMs such as Ford and Fiat are investing significantly.

- The *increasing globalizaion* of all major producers, irrespective of their product range, in terms of production locations and outlet markets: all the main producers serve all five continents.
- Striving for *operational excellence*, with all OEMs introducing lean manufacturing and total quality management. This shifted the value-added and production burden towards their Tier I and II suppliers, which (given the above) have become increasingly relevant players in the automotive arena.

The economic crisis brought an acceleration of some of these trends: restructuring efforts intensified, production has been further relocated and key players were forced to react with high levels of creativity and flexibility in their strategic decisions. The most notable case has been the United States, where the government endorsed the Chapter 11 reorganization plans of GM and Chrysler and provided financial support at below-market rates. In addition Fiat acquired a 20% equity stake in Chrysler, later raised to 30% and then 52%, in exchange for proprietary technology. The rapid rise of Chinese producers, initially to serve local demand but eventually to export, will continue: in the next few years the government will support the consolidation of existing players to create a smaller number of 'national champions' but it is also likely that new players will enter niche markets (such as sport cars or SUVs, for instance).

Conclusion

The automotive industry played a crucial economic, technological, political and social role in the 20th century. Will it remain a pillar of the industrialization process? The industry may not maintain its special role at the heart of world manufacturing, but it will continue to represent an important element of development, especially in more recently industrializing countries that are becoming relevant production bases. Vehicle production increased from 58 million in 2000 to 78 million in 2010 and could reach around 110 million in 2020 if the pace of the last decade is maintained (and, obviously, if no major shock hits the global economy).

On the supply side, the geography of production has changed dramatically in recent years: in 2009, for the first time, more cars were produced in emerging markets than in the 'Triad'; China overtook Japan to become the largest producer. BRIC countries now produce one car out of three.

In considering the impressive increase in Chinese production during the last decade, it is clear that this was due to foreign investments by the top OEMs, as much as to the growing contribution of local players. The consolidation of the Chinese industry with government backing (including though policies that support the leap-frogging of OEMs in the window of opportunity opened up by the emergence of electric engine technology) will be one of the main themes of the near future.

Further concentration among players and 'natural selection' will reduce the number of global players. In the words of Fiat CEO Sergio Marchionne,

> only six OEMs, among mass auto producers, could survive in the future. One will be from the US, one from Germany, one French-Japanese with a possible presence in the US, one in Japan, one in China, plus possible room for a further producer in Europe.[5]

This forecast will probably prove correct – although the overlooking of Hyundai is rather surprising considering

5 Automotive News Europe, December 2009.

how rapidly the South Korean firm has attained global reach and improved the quality of its cars – but there is a huge degree of uncertainty regarding the possible future role of producers in China and India, where more than one could emerge as *global* players.

On the demand side, the shift in wealth towards Asia and other emerging countries in Eastern Europe and Latin America means that new consumers will be found there. Car density will continue to increase in most countries, including in the more mature markets; in the latter, however, sales of new cars could remain more or less stable or even decline as happened during the last decade in the EU-15, the United States and Japan. Taking into account the expected growth of car sales in emerging markets and the relative saturation of the more developed markets, sales are expected to grow by around 2.5–3.5% a year until by 2020 the number of new vehicles sold and produced every year will be around one-third higher than now. Europe and the Americas will continue to produce around 20 million vehicles each, while the main contribution to growth will be from production in Asia.

As Western markets approach the point of saturation, supply-side innovation, together with economies of scale, will be among the main drivers of growth. Future clients will be increasingly sensitive to global warming and safety, and their needs will increase competition in an already tough market environment. Research and development outlays will remain a key source of competitive strength, creating an incentive for producers to share some of the costs and enter into alliances and other forms of collaboration, both with other OEMs and with suppliers. Slower technological development could, by contrast, reduce the pace of substitution of the old car park and also weaken public support (common during the crisis) to the industry.

At the global level, overcapacity, a feature of the automotive industry for decades, will persist. In this context, financial markets may exert growing pressure to increase the return on capital invested in the car industry – especially if controlling shareholders, who currently have very sizeable equity holdings, decide to dilute their stakes. The threat of plant closures in industrial countries will complicate the political economy of the global car industry, conceivably resulting in calls for protectionist measures against China and other emerging economies along the lines of the voluntary export restraints that the Japanese ended up accepting in the 1980s. At any rate, Western governments are likely to remain relatively active – through subsidies, scrap incentives and direct interventions. Although interventionism will be less visible than during the 2008–09 crisis (when the US government, for instance, had to bail out two of the 'Big Three'), various incentives to support auto sales in saturated markets – mostly related to 'greening' the car park – will nevertheless be widespread.

In sum, the industry will continue to be global, with new players (especially from China and India) not only increasing their share of fast-growing emerging markets, but also gradually becoming capable of challenging the incumbents in Western markets. The recent economic crisis has not led to a complete redrawing of the automotive industry landscape, but simply accelerated some of the trends already under way.

International Economics at Chatham House

International Economics at Chatham House produces policy-oriented research and analysis of the challenges facing the global economy today. It maintains links with policy-makers and researchers around the globe to ensure that our independent analysis of global economic issues translates into practical and timely policy insight on the challenges facing the world economy today. The main themes include the changing world economy and the G20 framework, reform of the international monetary system, growth of emerging market financial centres, and international competitiveness and growth.

A changing world economy and the G20 framework

In the wake of the recent financial crisis, the G20 has played an important role in facilitating international economic policy cooperation. It has yet to be seen, however, if the group can move beyond its roots as a crisis committee and play a more institutionalized role in confronting the array of challenges facing the global economy today.

The International Economics team has focused its research to explore the future prospects for the G20 and set out an ambitious schedule for international economic policy cooperation (*Preventing Crises and Promoting Economic Growth: A Framework for International Policy Cooperation*). In addition, current research explores the role of G20 observer countries and those outside the G20 process in international economic policy cooperation.

Reform of the international monetary system

The international monetary system is in flux – no longer meeting the needs of an increasingly unbalanced global economy, but not yet ready to move beyond the dollar as the world's reserve currency. Current research explores the future of the international monetary system, and assesses the prospects for a range of proposed reforms.

Recent work has explored the prospects for a multi-currency reserve system (*Beyond The Dollar: Rethinking the International Monetary System*) and investigated China's ambitions for the renminbi as an international reserve currency (*'One Currency, Two Systems': China's Renminbi Strategy*).

Currently, a Chatham House taskforce is leading a review of the role of gold in the international monetary system, often the subject of heated debate. Chatham House is exploring the issue from different angles and perspectives, to focus on reform of the international monetary system..

Growth of emerging market financial centres

As the epicentre of global economic growth continues to shift towards emerging markets, Chatham House International Economics has embarked on a series of studies into the specific challenges and opportunities facing financial centres in emerging economies.

Recent work has focused on the strengths and weaknesses of the Gulf as a global financial centre (*The Gulf Region: A New Hub of Global Financial Power*) and the outlook for the Japanese financial sector in the light of recent international trends (*The Outlook for Tokyo: New Opportunities or Long-Term Decline for Japan's Financial Sector?*).

Current research explores the prospects for financial centres in the Greater China region, including Hong Kong, Taipei and Shanghai, as well as the challenges and opportunities that shifting global financial influence may pose for Singapore's role as an established Asian financial centre.

International competitiveness and growth

The past quarter-century has seen massive changes in the world economy. Trade integration and the globalization of value chains, with more and more manufacturing now taking place in emerging economies, have created new challenges together with new opportunities. As we move forward into the next decade, it is critical to address the issue of how the industries of the future will look, and which sectors/industries will lead future growth.

International Economics is undertaking a series of projects to examine the outlook for key global industries over the next decade. These include a series of research study groups on the changing industrial landscape and industry case studies identifying emerging 'global champions'.

Chatham House is also partnering with the University of Warwick's Centre for Competitive Advantage in the Global Economy (CAGE) to explore how markets, institutions, and public policy interact to create and sustain competitive advantage in response to these global changes.

Recent publications:

- **Preventing Crises and Promoting Economic Growth: A Framework for International Policy Cooperation**
  Chatham House/CIGI Report
  Paola Subacchi and Paul Jenkins, April 2011
- **Squeezed in Retirement: The Future of Middle Britain**
  Chatham House Report
  Paola Subacchi, William Jackson, Vanessa Rossi, Richard Varghese, March 2011
- **'One Currency, Two Systems': China's Renminbi Strategy**
  Briefing Paper
  Paola Subacchi, October 2010
- **Aiming for New Vigour: The UK in the Global Economy**
  Briefing Paper
  Vanessa Rossi and Jim Rollo, June 2010
- **The Role of the US in the Post-Crisis Economic Order**
  Chapter in *America and a Changed World: A Question of Leadership*
  Paola Subacchi, May 2010
- **Beyond the Dollar: Rethinking the International Monetary System**
  Chatham House Report
  Edited by Paola Subacchi and John Driffill, March 2010

The World's Industrial Transformation Series

This briefing paper forms part of a major Chatham House project on the changing industrial landscape and follows a framework paper, *Mapping the World's Changing Industrial Landscape*, by Donald Hepburn (July 2011).

Other Case Studies

- *The Changing Landscape of the Aircraft Industry* S. McGuire (July 2011)

Forthcoming:

- *Ageing*, L. Ciferri and P. Ginefra
- *Pharmaceuticals, M. Owen*
- *Retailing*, A. Black and D. Hurst

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www.chathamhouse.org/industrialtransformation/

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