THE SOCIOECONOMIC SITUATION SURROUNDING THE AUTOMOBILE INDUSTRY

1 Introduction

2015 was a big turning point for the global economy. The economies of the U.S. and China have been sustaining the global economy since the global financial crisis caused by the collapse of the Lehman Brothers financial services firm in the fall of 2008. In 2015, there were significant changes in the monetary policies and economic situations in both of those countries.

The U.S. had been supporting the financial sector of the global economy since that economic crisis. However, in an effort to respond to the decline in asset values triggered by the drop in home prices, it introduced a near zero interest rate policy and, on three separate occasions, purchased financial assets that supplied the market with over 3.5 trillion dollars in funds. After these purchases ended in December of 2013, any discussion of raising the U.S. interest rates provoked a strong reaction from the foreign exchange market. Finally, in December of 2015, the U.S. decided to raise interest rates for the first time since the financial crisis and reversed its position from being the supplier of money to being the receiver.

China had been supporting the object economy sector of the global economy through economic measures amounting to 4 trillion yuan. However, the collapse of stock prices in August, before the raising of the U.S. interest rates, led China to devalue its currency and take other actions that clearly indicated the severity of its economic situation. These moves acknowledged the fact that investment-led economic expansion had reached its limit and that it was now time to start transforming the structure of the Chinese economy.

Ripples from the downturn in China's economy led to a fall in the prices of natural resources and depressed exports to emerging countries, slowing the growth rate of their economies, especially in resource-rich countries. Moreover, reliance on the U.S. low interest policy to accumulate a debt in dollars by emerging countries has left them facing a rapidly rising debt due to the appreciation of the dollar following a change in U.S. fiscal policy, a situation that is further restricting growth.

2 Political and Economic Situation

2. 1. The global economy (Table 1)

The major turning point reached by the U.S. and China, which have been the driving forces behind the global economy, has created a situation defined by a strong dollar, inexpensive natural resources, and stagnant worldwide trade. There is a growing awareness that the decline in crude oil prices has more negative implications, such as increasing deflationary pressure, than it has benefits. Japan and some countries in Europe are once again moving in the direction of further monetary easing. The economies of developing nations that had been buoyed by inflows of capital now require financial support to address the outflow of capital.

2. 1. 1. U.S.

The upturn in the U.S. employment environment continues, and growing spending and consumption by U.S. households has become a driving force of the economy. On the other hand, the drop in crude oil prices has made

Table 1 Real GDP Growth Rates in Major Countries

	2012	2013	2014	2015
World	3.5	3.3	3.4	3.1
Major developed nations	1.2	1.2	1.8	1.9
U.S.	2.2	1.5	2.4	2.4
Euro zone	−0.9	−0.3	0.9	1.6
Germany	0.6	0.4	1.6	1.5
France	0.2	0.7	0.2	1.1
Italy	−2.8	−1.7	−0.3	0.8
U.K.	1.2	2.2	2.9	2.2
Japan	1.7	1.4	0.0	0.5
Developing nations	5.3	4.9	4.6	4.0
China	7.7	7.7	7.3	6.9
Thailand	7.2	2.7	0.8	2.8
Indonesia	6.0	5.6	5.0	4.8
India	5.6	6.6	7.2	7.3
Brazil	1.9	3.0	0.1	−3.8

Source: IMF, World Economic Outlook Database, April 2016 things tough for energy and resource companies, such as shale oil drillers, and there has been a slump in exports due to the strong dollar. The real GDP growth rate in 2015 was also disappointing and did not meet the original expectations.

The value of the dollar increased significantly as the monetary policy was tightened. In addition to causing a slump in U.S. exports, the capital outflows from developing nations also increased awareness of how a rapid rise in U.S. interest rates could invite further destabilization of the global economy. Consequently, the U.S. is slowing the pace of its interest rate hikes from the original plan. The speed of the economic recovery has been more moderate than expected, so the U.S. is also staking out a clear position that the strong dollar is not desirable because it is an impediment to U.S. exports.

At the same time, long-term interest rates are being cut and the number of people eligible for loans has been expanded, so the amount of household debt in the U.S. is increasing. For automobile loans in particular, the Obama Administration has issued guidelines to relax credit availability and so these loans are now being made to whole new segments of people who had been excluded in the past. The amount of outstanding debt and loans in the U.S. has now expanded to a much higher level than that prior to the global financial crisis.

In the partisan primary elections leading up to the 2016 U.S. presidential election, some candidates are presenting "policies" that seem to be little more than uninformed rants, while others have proposed making college tuition in the U.S. completely free and establishing new regulations on the financial industry. The candidates proposing such policies, which seem highly unlikely to actually be enacted, are receiving a surprisingly large amount of support and are offering a serious challenge to the other candidates originally considered as favorites. Backing these surprising candidates are groups of people who feel threatened by the increasing influence wielded by immigrants and minorities, and young people who are not only saddled with excessive school loans and mortgages, but also find it difficult to secure stable employment. The issue of income and wealth inequality, and its attendant social problems, has thus been brought to the forefront.

2. 1. 2. Europe

In the U.K. employment was good, income and earnings held steady, and factors such as inexpensive crude oil and strong levels of personal consumption have been propelling the economy along. The service sector, which accounts for over 80% of the entire economy, also showed increasing growth. On the other hand, in the realm of British politics, the Conservative Party scored a major victory in the lower house elections in 2015, and Prime Minister Cameron has promised to hold a referendum on withdrawal from the European Union (EU). In contrast to the initial predictions, the growing severity of the immigration problem in Europe has increased the likelihood of the U.K. actually voting to withdraw from the EU.

The depreciation of the Euro in 2015 benefited Germany as it was able to increase and expand its exports, but the economic slowdowns in Russia and China have cast doubt on any German economic growth. In the Euro zone as a whole, the economic situation cannot be said to be very strong despite the relatively stable levels of personal consumption due to decreases in the high levels of unemployment. There were also concerns about a relapse into deflation, and several nations are once again moving toward easing their monetary policies.

Greece has postponed its debt repayments and there are no signs of improvement there in the short term. Painful structural reforms, such as that to the Greek pension system, still have made no progress, and there is no evidence that things are moving in the right direction. However, any attempts at hasty reforms simply increase the risk of a public backlash, destabilization of the government, and further chaos and confusion. With the economic growth rate of the whole Euro zone held back by the debt problems suffered by other southern European countries, there was an increasing dependence on Germany to provide financial assistance.

At the same time, debt and credit problems at Deutsche Bank occurred in 2015, once again drawing attention to the financial system problems found in the Euro zone. The long-term low interest rate policies, which also include negative interest rates, squeezed the earnings of financial institutions in countries throughout Europe, and the manifestation of bad loans pose a threat to the entire European financial system.

In addition to these challenges, the unending series of terrorist attacks and the ever increasing number of refugees fleeing into Europe have caused many to start to question the viability of the European Union itself.

2. 1. 3. China

The decline in investment growth has also slowed the growth of the whole economy. The relatively high growth in personal consumption has been maintained due to reduced taxes on small-size vehicles and the promotion of housing acquisition policies, but employment and income levels have deteriorated as the previous growth in the number of job offers to job seekers has fallen into negative territory.

The 2008 global financial crisis occurred at a time when it was already obvious that China needed to transform its economy from an investment-driven one to one driven more by consumer spending. The increased investment by the Chinese government not only played a role in supporting the Chinese economy, but also supported the global economy. However, all of this investment has also resulted in a major increase in bad assets. Since the fall of land prices in China was confirmed in the middle of 2013, the government began to acknowledge the risk posed by these property (asset) values and has continued to implement a policy of aggressive intervention. Following the government's devaluation of the yuan in August of 2015, the Shanghai stock index plunged, and the impact of this was felt around the world.

The Chinese government has worked to bolster its economy both in terms of monetary policy and public finance, and it has been particularly aggressive in supplying additional funding to help eliminate both a reluctance to lend and a rush to collect on loans by Chinese banks. This funding also proved to be a lifeline to companies that were in the red due to excessive equipment and facilities, while presenting the risk of a significant increase in the number of future non-performing loans.

Since 2013, the Chinese government has promoted progressive economic reforms such as selective defaults and expanded use of limited investment, but the limitations of even these policies have begun to appear.

2. 1. 4. Emerging markets

Many emerging markets in Asia and South America borrowed low-interest dollar-denominated funding during the period of monetary easing in the U.S., but the infrastructure development intended to form the foundation for new production did not make much progress, leading to continued public financing and current account deficits. This monetary policy shift by the U.S. clearly exposed the underlying weakness of some countries' economic foundations. In addition, the economic slowdown in China meant that overall exports from these developing nations were lackluster, slowing down their growth rates in 2015. The weight of the downward economic pressure was even heavier on those countries whose economies are very dependent on exporting natural resources since various commodity prices, including crude oil, also fell in 2015. The outflow of capital from these countries due to the interest rate hike in the U.S. was another factor that contributed to their depressed economic growth rates.

In the realm of politics, since the coup by the armed forces in Thailand in May 2014, the interim military government there announced the first draft of a new constitution and finally embarked on the establishment of concrete procedures to transition back to a democratically elected government, including procedures for electing members of the national legislature. The current Prime Minister, General Prayut Chan-o-cha, has stated that elections will be held in July of 2017, but it is still very unclear whether or not this transition from military rule back to democratic government will proceed without disorder and confusion.

In Indonesia, Mr. Joko Widodo was elected as president in 2014 with strong levels of national support, but evidence that this support was already beginning to erode came to light by the middle of 2015. Frictions have surfaced within Indonesian Democratic Party of Struggle, the President's own political party, which forms the basis of his support. In addition, he has replaced several key government ministers, raising concerns about a decline in his leadership abilities. In particular, the expanding influence of old-guard political factions with various vested interests is seen as the main force inhibiting the progress of the president's reforms.

In India the administration of Prime Minister Modi came into power in 2014 by advocating for various reforms, but by 2015 the support for this government had declined rapidly both inside and outside the country. Although Prime Minister Modi pledged to institute various reforms to attract more overseas investment, the upper house of parliament has remained unable to pass the land expropriation (eminent domain) laws and tax reform bills essential to infrastructure development. Concrete actions to privatize state-owned enterprises and liberalize the labor market have stopped, causing disappointment among the sources of foreign funding that once held high expectations for the Modi government and had invested in the Indian stock and foreign exchange markets, resulting in the selling off of Indian stocks and the Indian rupee.

After high inflation and a recession had already placed Brazil a horrible economic predicament, investigations into corruption allegations against both ruling and opposition lawmakers, including the president, also began in 2015. This political turmoil has in turn spurred further deterioration of the economic situation there.

2. 2. The Japanese economy

Japan has been stricken by long-term economic stagnation following the collapse of the infamous asset price bubble, and the whole period since then is now referred to as the Lost 20 Years. In December of 2012, the cabinet of Prime Minister Abe came into power and implemented several key policies, including fiscal stimulus, monetary easing, and a growth strategy, aimed at overcoming this long-term deflation. The government also set a target for achieving a nominal economic growth rate of 3%.

Particularly in regard to the monetary policy, a very aggressive policy of monetary easing was implemented, and in April 2013 the Bank of Japan pledged to "achieve the 2% inflation target as quickly as possible within the next 2 years".

Although these policies initially resulted in some positive changes such as a rise in stock prices and a shift toward a weaker yen, a closer look at the state of the Japanese economy in 2015 reveals that it is not moving in a direction that will allow both the growth rate target and inflation target to be achieved. Some improvement in the employment situation in Japan was observed in 2015, but the strong feeling of anxiety about the future apparent

Table 2 Sales Trends in the Japanese Automobile Market

Units: 1,000 vehicles

	2011		2012		2013		2014		2015	
	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year
Total	4 210	85%	5 370	128%	5 376	100%	5 563	103 %	5 047	91%
Vehicle registrations	2 689	83%	3 390	126%	3 263	96%	3 290	101 %	3 150	96%
Passenger cars	2 386	82%	3 015	126%	2 872	95%	2 860	100 %	2 704	95%
Standard	1 140	80%	1 412	124%	1 399	99%	1 438	103 %	1 355	94%
Small	1 246	83%	1 603	129%	1 473	92%	1 423	97 %	1 350	95%
Trucks	292	101%	364	124%	379	104%	418	110 %	432	104%
Standard	107	105%	136	127%	143	105%	165	115 %	173	105%
Small	185	99%	227	123%	236	104%	253	107 %	260	103%
Buses	11	83%	12	112%	11	94%	12	106 %	13	112%
Mini-vehicles	1 521	88%	1 979	130%	2 113	107%	2 273	108 %	1 896	83%
Passenger cars	1 139	89%	1 558	137%	1 690	109%	1 839	109 %	1 511	82%
Trucks	382	87%	422	110%	423	100%	434	103 %	385	89%

Source: Monthly Statistics of the Japan Automobile Manufacturers Association (JAMA)

Table 3 Trends in Vehicle Imports to Japan

Unit: vehicles

	Passenger cars		Commercial vehicles		Total	
	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year
2001	268 560	100%	6 719	87%	275 279	100%
2002	272 994	102%	4 071	61%	277 065	101%
2003	275 194	101%	3 610	89%	278 804	101%
2004	269 198	98%	3 682	102%	272 880	98%
2005	264 729	98%	3 383	92%	268 112	98%
2006	259 562	98%	2 712	80%	262 274	98%
2007	262 996	101%	2 090	77%	265 086	101%
2008	206 278	78%	12 953	620%	219 231	83%
2009	167 889	81%	10 638	82%	178 527	81%
2010	213 283	127%	11 800	111%	225 083	126%
2011	275 644	129%	14 937	127%	290 581	129%
2012	300 594	109%	15 399	103%	315 993	109%
2013	331 286	110%	14 847	96%	346 133	110%
2014	319 677	96%	16 283	110%	335 960	97%
2015	313 081	98%	15 541	95%	328 622	98%

Source: Monthly Statistics of the Japan Automobile Manufacturers Association (JAMA) among both households and the corporate sector resulted in a stagnation of personal spending and sluggish growth in capital investment.

3 CURRENT SITUATION OF THE AUTOMOTIVE INDUSTRY

3. 1. Inside Japan (Tables 2 and 3)

The number of new automobiles sold in Japan in 2015 was 5.04 million vehicles (a decrease of 9% compared to the previous year). The number of registered vehicles also declined to 3.15 million vehicles (a decrease of 4% compared to the previous year), which had been expected given the last-minute demand and purchasing in 2014 preceding the raising of the consumption tax. An increase in the tax on mini-vehicles in April of 2015 on top of the consumption tax hike only added insult to injury, and sales of mini-vehicles in 2015 plummeted to 1.89 million vehicles (a decrease of 27% compared to the previous year).

Total sales of new imported automobiles in 2015 amounted to 328,600 vehicles (a decrease of 2% compared to the previous year). The number of overseas brand vehicles accounted for 288,000 vehicles within this total (also a decrease of 2% compared to the previous year), while passenger vehicles from Japanese manufacturers produced overseas and imported back into Japan accounted for 30,800 vehicles (a decrease of 7% compared to the previous year).

3. 2. Outside Japan (Tables 4 and 5)

3. 2. 1. U.S.

Sales of automobiles in the U.S. in 2015 reached 17.05 million vehicles (an increase of 5% compared to the previous year), indicating that sales from all U.S. manufacturers were strong. Looking more closely at the breakdown of the U.S. vehicle sales reveals that lower prices for gasoline drove higher sales of SUVs and pickup trucks. Also, larger vehicles with higher prices and profit margins for the manufacturers proved to be more popular than smaller vehicles. Sales of passenger vehicles decreased to 1.7 million (down 7% compared to the previous year), while sales of light trucks were up to 2.39 million (an increase of 11% compared to the previous year). Breaking down 2015 U.S. vehicle sales by the nationality of the automaker reveals that sales by Japanese manufacturers amounted to 1.55 million vehicles (an increase of 3% compared to the previous year), but the

Table 4 Trends in Overseas Automobile Sales by Region

Units: 1,000 vehicles

	2011		2012		2013		2014		2015	
	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year
China	17 585	104%	18 591	106%	21 371	115%	23 102	108%	24 442	106%
North America	15 534	109%	17 444	112%	18 720	107%	19 837	106%	21 063	106%
Europe	18 449	104%	17 457	95%	17 123	98%	17 523	102%	17 919	102%
Asia & Oceania	8 681	106%	9 631	111%	9 662	100%	9 451	98%	9 818	104%
Central & South America	5 342	109%	5 559	104%	5 617	101%	5 003	89%	4 031	81%
Middle East	4 168	101%	3 631	87%	3 534	97%	3 952	112%	4 030	102%
Africa	1 017	117%	1 244	122%	1 248	100%	1 166	93%	1 023	88%
Other	44	113%	48	109%	54	112%	57	107%	64	111%

Source: HIS Global Insight

Table 5 Trends in Japanese Vehicle Exports by Region

Units: 1,000 vehicles

	2011		2012		2013		2014		2015	
	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year
Total	4 464	101%	4 801	108%	4 675	97%	4 466	96%	4 578	103%
North America	1 585	92%	1 886	119%	1 887	100%	1 662	88%	1 749	105%
Europe	995	106%	849	85%	709	84%	744	105%	738	99%
Central & South America	358	90%	347	97%	362	104%	306	85%	310	101%
Africa	149	79%	168	113%	179	107%	184	102%	168	92%
Middle East	420	231%	526	125%	584	111%	626	107%	685	109%
Asia	572	100%	571	100%	540	95%	560	104%	529	94%
Oceania	380	89%	449	118%	407	91%	376	92%	391	104%
Other	5	68%	5	111%	5	100%	8	140%	8	105%

Source: Monthly Statistics of the Japan Automobile Manufacturers Association (JAMA) market share held by Japanese automobile manufacturers decreased slightly (by 0.3%) to 37.9%. In contrast, sales by U.S. manufacturers reached 1.87 million vehicles (an increase of 6% compared to the previous year) and their share of the U.S. automobile market increased (by 1%) to 45.9%. Sales of vehicles from European manufacturers were negatively affected by the VW exhaust emissions cheating scandal, falling by 4% compared to the previous year down to 340,000 vehicles. This left them with an 8.4% market share in the U.S. (a decrease of 0.6% compared to the previous year).

3. 2. 2. Europe

The number of new vehicles sold in the European market in 2015 was 17.91 million vehicles, an increase of 2.0% compared to the previous year. Sales in the 18 countries of Western Europe rebounded to around 13 million vehicles for the first time in six years, but this was still about 10% lower than the level prior to the 2008 financial crisis, which was about 14.5 million vehicles.

In 2015 the number of sales in each country rebounded, with increased sales in the five major European markets of Germany, the U.K., France, Italy, and Spain, in particular, strongly supporting the European market as a whole. Sales in Germany exceeded 3.05 million vehicles (an increase of 5% compared to the previous year) for the first time in six years. Sales in the U.K. reached 2.66 million vehicles (an increase of 6% compared to the previous year) as a result of a strong economy and low interest rates, setting a new record for the highest number of sales in U.K. history. In France, the markets for passenger vehicles and small commercial vehicles rebounded and vehicle sales reached 1.97 million vehicles (an increase of 6% compared to the previous year). In Italy, consumer confidence recovered enough that automobile sales increased and reached 1.57 million vehicles (an increase of 6% compared to the previous year). And in Spain a subsidy for new car purchases propped sales up to 1.04 million vehicles (a 21% increase compared to the previous year).

In Eastern Europe the automobile market expanded in many countries, such as the Czech Republic and Romania, but in the Ukraine, the political unrest caused the number of automobiles that were sold to drop by half. Russia also experienced a significant decrease in automobile sales down to 1.5 million vehicles (a decrease of 36% compared to the previous year) due to the low price of crude oil and the depreciation of the ruble.

3. 2. 3. China

In 2015 the entire vehicle market was 24.44 million vehicles (an increase of 6% compared to the previous year), but the growth rate slowed down to just 2% and the momentum behind further expansion of the vehicle market seems to be waning. Sales of passenger vehicles accounted for 21.71 million vehicles (an increase of 7% compared to the previous year), but the monthly sales figures up to August 2015 decreased in comparison to those same months during the previous year with the exceptions of January and March. Consequently, starting in October of 2015, the Chinese Government introduced government tax incentives for small vehicles (a reduced acquisition tax on vehicles with displacements of 1.6L or less). This led to a rapid recovery in vehicle sales from October onward and 10% to 20% more vehicles were sold in those months compared to those same months in 2014. The SUV segment showed particularly high growth, recording sales of 6.83 million vehicles (an increase of 42% compared to the previous year), and within this segment sales of small-size SUVs had a high growth rate as well.

Starting in 2010 the Chinese government began implementing financial support policies to help accelerate the adoption and dissemination of new energy vehicles (such as electric vehicles and plug-in hybrids). As a result, the market for these vehicles grew rapidly in 2015 thanks to the large increase in sales of electric vehicles (EV). Attention is now focused on the development and maintenance of the battery charging infrastructure in China, and on how widespread these vehicles will become.

3. 2. 4. Asia & Oceania

The number of vehicles sold in the 10 major nations in Asia (Thailand, Indonesia, Malaysia, the Philippines, Vietnam, Singapore, South Korea, Taiwan, India, and Pakistan) in 2015 was 8.54 million vehicles, an increase of 4% compared to the previous year and a new record. India is home to the largest automobile market in that region, and in 2015 sales reached 3.14 million vehicles, an increase of 7% compared to the previous year and a rate of growth exceeding even that of China. In terms of global ranking, this means the Indian automobile market is now the fourth largest in the world (up from fifth last year) behind only China, the U.S., and Japan. Sales of passenger vehicles in India accounted for 2.77 million vehicles (an increase of 9% compared to the previous year). If the sales figures are further broken down by vehicle categories, then the A segment increased by 6% compared to the previous year to reach 380,000 vehicles, the B segment, which is the largest, accounted for 980,000 vehicles (an increase of 1% compared to the previous year), and SUVs increased slightly to account for 270,000 vehicles (up 1% compared to the previous year). Factors such as low crude oil prices holding down inflation, strong levels of personal consumption, and the constant introduction of new vehicle models, particularly SUVs aimed at the middle class, are seen as the driving force behind the expansion of the Indian automobile market.

Automobile sales in the ASEAN nations (the total number sold in those five nations) decreased to 2.89 million vehicles (a drop of 6% compared to the previous year). Sales in Indonesia were down to 960,000 vehicles (a decrease of 18% compared to the previous year), dropped to 760,000 vehicles (a decrease of 9% compared to the previous year) in Thailand, and held essentially steady at 660,000 vehicles in Malaysia reflecting a temporary slowdown in these markets. On the other hand, steady growth in the automobile markets has continued in both the Philippines, which had sales of 310,000 vehicles (up 19% compared to the previous year), and Vietnam, which had sales of 190,000 vehicles (an increase of 48% compared to the previous year).

In Indonesia, sales of passenger vehicles decreased by 19% down to 870,000 vehicles and the growth rate was slightly lower than the overall market. The downturn in sales is explained by the economic slowdown, the rise in the inflation rate, the depreciation of the rupiah, and the drought, all of which led to a decline in the amount of personal consumption. In Thailand, vehicle sales have decreased for 3 years in a row following the end of the First Car Buyer incentive (tax reduction) program in 2013. This slump in sales has continued due to a drought in 2015, a fall in prices for agricultural goods that reduced consumer purchasing power and expanded the amounts of household debt, and a tightening of the auto loan borrowing conditions by various financial institutions.

3. 2. 5. Other markets

In South America, Brazil is the largest automobile market and sales there decreased for the third year in a row, falling to 2.41 million vehicles (a decrease of 25% compared to the previous year). In 2012 Brazil had just achieved record automobile sales of 3.51 million vehicles, but the subsequent downturn in the domestic economy caused the automobile market to continue to shrink. The main destination for Brazilian exports is Argentina, and the interdependent relationship shared by the two countries in terms of their trade in automobiles means both are impacted by an economic downturn. The protectionist policies of the Brazilian government are also affecting the automobile industry. If the automobile sales figures for Brazil in 2015 are broken down by vehicle categories, the B segment, which accounts for approximately 50% of all sales, decreased by 6% down to 1.13 million vehicles. However, the SUV segment increased by 4% to 300,000 vehicles and, as in many other countries around the world, this segment has continued to grow each year.

Although the Middle East is one of the cornerstones supporting the advancement of emerging markets, its automobile markets have been declining due to the falling price of crude oil resulting from the rise of interest rates in the U.S. and an export ban on crude oil. Iran has the largest automobile market in the region and sales there in 2015 amounted to 1.02 million vehicles (a decrease of 6% compared to the previous year). However, a growth in sales is expected in the future now that the economic sanctions on the country were lifted in September of 2015. Total sales of automobiles in the 6 countries that make up the Gulf Cooperation Council (GCC) were 1.50 million vehicles (a decrease of 4% compared to the previous year) in 2015. The largest automobile market in the GCC is that of Saudi Arabia, which reported sales of 790,000 vehicles (a minor decrease of 0.01% compared to the previous year). However, sales in the UAE fell by 3% (down to 320,000 vehicles), sales is Kuwait fell by 5% (down to 140,000 vehicles), and there was a major drop in sales of 25% in Oman (down to 100,000 vehicles).

Vehicle exports from Japan increased by 3% compared to the previous year to 4.57 million vehicles, the first such increase in three years. North America is the region that receives the largest number of exported Japanese vehicles, amounting to 1.74 million vehicles in 2015. This is a 5% increase compared to the previous year and represents a steady growth in this number. Vehicle exports to Europe were down by 1% to 730,000 vehicles, and exports to Asia fell somewhat to 520,000 vehicles, a decrease of 6%. However, vehicle exports to the Middle East increased by 9% to 680,000 vehicles, rose by 4% to 390,000 vehicles in Oceania, and also showed good growth in Central America, where exports of Japanese vehicles increased by 21% compared to the previous year, reaching 170,000 vehicles.

Table 6 Production trends of Japanese automakers outside Japan.

Units: 1,000 vehicles

	2011		2012		2013		2014		2015	
	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year	Sales volume	% of previous year
Total	8 399	87%	9 943	118%	9 630	97%	9 775	102%	9 278	95%
Vehicle registrations	6 893	88%	7 920	115%	7 520	95%	7 481	99%	7 355	98%
Passenger cars	6 042	86%	6 939	115%	6 507	94%	6 409	98%	6 300	98%
Standard	4 180	86%	4 686	112%	4 618	99%	4 658	101%	4 744	102%
Small	1 861	86%	2 253	121%	1 889	84%	1 751	93%	1 556	89%
Trucks	747	98%	859	115%	881	103%	933	106%	917	98%
Standard	512	98%	583	114%	580	99%	605	104%	587	97%
Small	235	98%	276	118%	301	109%	328	109%	331	101%
Buses	104	95%	122	117%	133	109%	140	105%	138	99%
Mini-vehicles	1 506	86%	2 023	134%	2 110	104%	2 293	109%	1 923	84%
Standard	1 117	86%	1 615	145%	1 683	104%	1 868	111%	1 531	82%
Trucks	389	87%	407	105%	428	105%	425	99%	392	92%

Source: Monthly Statistics of the Japan Automobile Manufacturers Association (JAMA)

3. 3. Production (Table 6)

Vehicle production in Japan in 2015 was down 5% compared to the previous year to 9.27 million vehicles, a result influenced by the significant drop in mini-vehicles sales caused by the previously mentioned tax increase on mini-vehicles. If the production results from 2015 are broken down by vehicle model, standard passenger vehicles accounted for 4.74 million vehicles, an increase of 2% compared to the previous year and the second straight year that production increased. Small-size passenger vehicles accounted for 1.55 million vehicles, a decrease of 11% and the third straight year of production declines, while production of mini-vehicles accounted for 1.53 million vehicles, a large decrease of 18% and the first such decrease in four years. Production of trucks in Japan fell by 2% to 9.17 million vehicles. However, truck sales had been strong due to increased demand related to the reconstruction and public works projects connected to the 2020 Tokyo Olympics and Paralympics, and this slowdown in truck production is simply attributed to the cycle coming full circle.

4 ISSUES OF THE AUTOMOTIVE INDUSTRY IN JAPAN

Since the 2008 financial crisis, automobile markets in emerging markets have recorded higher levels of new vehicle consumption than developed nations. Consequently, all automobile manufacturers had focused their attention on expanding their global sales and taking advantage of the growth in developing nations up until around 2013. However, starting in 2014 it became clear that the growth of the automobile markets in these emerging markets was slowing down, leading manufacturers to bring their attention back to the comparatively stable markets of the developed nations and expanding their market share. This in turn led to intensified efforts to gain an edge in vehicle environmental and safety technologies, which are now the areas of competitive focus for the manufacturers.

Now the automobile industry is trying to once again break through to a new stage of development. The first step in this process will be to expand the market for automobiles around the world even further. The global automobile market is predicted to grow at a rapid pace in the near future as the global population increases to 8.4 billion people by the year 2030 (UN estimate) and the per capita GDP also continues to grow. At the same time, regulations regarding environmental conservation and efficient energy usage continue to become stricter, requiring automobile manufacturers to directly confront the difficult challenge of carrying out concurrent parallel development of multiple new technologies. They will need to expand the sales of their conventional internal combustion engine vehicles, while also trying to quickly popularize and disseminate environmental technologies compliant with stronger fuel consumption and emissions regulations. Of course, this will make it even more vital for these companies to invest in R&D and the development of new technologies, and it is becoming quite difficult for any single manufacturer to handle all this completely on their own.

The second step is changing the structure of the automobile industry. The consumer electronics industry has already begun to reduce the amount of relative added value in the assembly processes and shifted it to upstream and downstream processes. It is predicted that the automobile industry will also begin to enact these same changes. There is a strong possibility that this will change the current vertical pyramid structure of the industry itself, where the automobile manufacturers are at the very top. In actuality, this is already happening as all automobile manufacturers are enhancing efforts make vehicles more modular with the aim of responding better to quantitative expansion and a larger diversity of vehicle models. These changes are promoting a shift toward a more horizontal division of labor between manufacturers and suppliers.

The third step is for conventional technologies to mature and for new technologies to emerge. The replacement of currently mainstream conventional internal combustion engine technologies with automated driving technologies that do not require human intervention, or, put another way, help realize vehicles that do not cause traffic accidents, and environmentally-friendly fuel cell vehicles that do not emit any harmful substances are gathering more and more attention. The field of automated driving is already intensely competitive due to the participation of other industries, such as the IT industry, whose impact could potentially transform the conventional automobile industry business model.

In an environment in which such massive changes are anticipated, automobile manufacturers need to achieve sustainable growth and make themselves indispensable to society over the medium- to long-term. Consequently, it is essential that they consider a strategy that does not limit itself to traditional *monozukuri*, and goes beyond the usual framework to encompass a new business model built on competing to find solutions to social issues, such as global warming, the aging of society, and urbanization. Furthermore, manufacturers must face the risks presented by a global economy, political scene, and society wracked by intense changes head-on. At the same time, there will be growing demand for corporate activities that continuously consider what products and services are appealing to customers as regional needs keep diversifying.

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