

# Analysis of the Competition Structure and Changes in Performance Derived from the Overseas Investment of the Automotive Parts Industry

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# Summary

## **1. Background and Issues at Hand**

Korea's foreign direct investment is expected to rise continuously due to an increase in demand for resource development, a rise in production cost and an expansion of the emerging markets. The Korean automotive industry is also increasing its foreign direct investment and, as an increasing number of domestic automotive companies are manufacturing vehicles in overseas production facilities, the automotive parts industry is also seeking to increase its foreign investment. In particular, the automotive parts industry, which has largely been recognized as the industry for domestic consumption, is beginning to report an increase in export and generate a trade surplus since the early 2000s and expanded its foreign investment rapidly since the mid- and late-2000s mainly in the regions where Korean automotive companies' production facilities exist such as China, the US and India. As the industry environments are being changed rapidly, a close cooperation be-

tween automotive companies and automotive parts companies is required and the roles of automotive parts manufacturers increase so that automotive parts companies are now increasingly involved in vehicle production process even from the development stage. That is why automotive parts manufacturers are increasing its foreign investment. As automotive parts manufacturing facilities are built in regions where Korean automotive companies' production facilities exist, automotive companies can source parts conveniently from automotive parts manufacturing facilities and maintain a technological competitive edge. Considering the fact that one of the reasons behind the failure of the Korean automotive company in its endeavor to explore the North American market by building automotive manufacturing facilities in the region was the difficult process of acquiring parts required for vehicle production, the overseas investment made by Korean automotive parts companies is recognized to have contributed to the growth of overseas production business of Korean automotive companies.

The performance of overseas investment made by Korean automotive parts companies, which is considered strategically important, has not been evaluated properly. Previously, the performance analysis has been conducted on the manufacturing industry as a whole or on a macro level and effects or implications have not been analyzed on a micro level. Therefore, this research takes a look at the current status of overseas investment made by Korean automotive parts companies, which has been made since the mid- 2000s, evaluates the performance, presents challenges and measures to contribute to the development of the Korean automotive industry. Furthermore, through the performance analysis of overseas invest-

ment made by Korean automotive parts companies, this research looks into whether the investment is creating desired results, what kind of effects the overseas investment of Korean automotive parts companies has on the quality and technological prowess of the parent company and how the performance has changed over the years. By doing so, this research extensively examines the effects of overseas investment of Korean automotive parts companies on the companies themselves and the Korean automotive industry and proposes measures to sustain positive effects created by the investment of Korean automotive parts companies and policy recommendations.

Against such backdrop, this research analyzes the changes in the foreign direct investment of Korean automotive parts industry and competitiveness of the parent company and the effects such foreign direct investment has on financial performance and competitiveness structure.

This research uses the data put together and compiled by the Automotive Industry Cooperative to analyze the status of overseas investment of Korean automotive parts companies and specific part items manufactured at manufacturing facilities established overseas while using the KIS-Value information provided by Korea Information Service for the sales turnover figures, the number of employees and other basic corporate business information. Lastly, in order to examine whether the overseas investment has affected the competitiveness or business performance of companies, this research utilizes the survey data from the 2004 and 2012 surveys conducted by the Automotive Parts Industry Promotion Foundation and the Korean Institute for Korean Economics & Trade on primary

automotive parts companies registered as members of the Automotive Parts Industry Promotion Foundation.

## **2. Results of the Research Analysis**

### **(1) Status and Structure of Overseas Investment Made by the Automotive Parts Industry**

#### 1) Establishment of a Global Network of the Automotive Industry

In 2013, Korean automotive companies produce a total of 4.1 million vehicles at their overseas manufacturing facilities, which is close to 4.5 million vehicles that are manufactured at home. As the construction of new manufacturing facilities is scheduled in China and Mexico in the future, the number of vehicles manufactured at overseas facilities is expected to increase down the road. Compared with the year 2001 when the number was only about 100,000 vehicles, the number of vehicles manufactured at overseas facilities continued its upward trend by an annual average of 36.4%. During the same period, the vehicles manufactured at domestic facilities grew by 3.6%. Such figures indicate the overseas manufacturing of Korean automotive companies' vehicles has increased rapidly over the years.

When analyzed by country, overseas manufacturing facilities were first built only in four countries – the US, India, China and Turkey – in the initial stage, and China, India and the US account for 20% of the total respectively. However, in 2013, the proportion of China went up to 38.7% and new manufacturing facilities were

established in the Czech Republic and Slovakia to supply vehicles to the European market and newly emerging markets like Brazil and Russia. The number of vehicles manufactured in China, which accounts for the largest proportion, reached 1 million a year in 2010 and 1.6 million in 2013. Responding to a growing demand for vehicles fueled by the recent rapid economic growth of China, Korean automotive companies have continued to build manufacturing facilities in China. For instance, Hyundai Motor Company has its third manufacturing plant in Beijing and second manufacturing plant in Yancheng and has a plan to build its fourth manufacturing plant in inland area.

The period from 2000 to 2013 can be divided into three different stages of foreign investment: the initial stage (2000~2004), expansion stage (2005~2009), competitiveness building stage (2010~2013). In the initial stage, the purpose was to enter into the local market, boost exports and hire low-wage workers in the local community in India, China and Turkey. By hiring low-wage workers in such countries, Korean automotive companies were able to cut down on production cost and increase price competitiveness when exporting vehicles to the European market and other countries that are close to their manufacturing facilities. As the overseas investment of Korean automotive companies has moved into the expansion stage, the focus was placed more on exploring the local market, than on utilizing low-wage workers. During the period 2000~2009, Korean automotive companies established manufacturing facilities in other countries with a capacity of manufacturing approximately 300,000 vehicles and such manufacturing facilities have served as the production base that supplies finished products to the neigh-

boring countries. At this stage, the purpose of overseas investment was both to boost exports and reduce labor cost by hiring low-wage workers in the local community. However, as the investment focused more on entering into the local market has been made in Brazil, Russia and China since the year 2010, the proportion of the overseas investment focused on entering into the local market is reported to be high this year.

## 2) Status of Foreign Direct Investment of the Automotive Parts Industry

Foreign investment of the automotive parts industry shows similar patterns of that of the automotive industry albeit showing some differences. Since 2009, the investment of the automotive parts industry has continued to grow and, in 2013, surpassed that of the automotive industry.

As Korean automotive companies completed the construction of overseas manufacturing facilities in strategically-important regions, the size of investment has declined and the focus was placed more on expanding the existing manufacturing facilities rather than building a whole new manufacturing plant. The size of investment made by the automotive parts industry is relatively smaller than that of the automotive industry at 1 million US dollars per project as the majority of automotive parts manufacturers are SMEs. The size of investment has remained unchanged since the initial stage. Recently, as one Korean automotive company built a new plant in Brazil, module suppliers and large-scale parts manufacturers also established facilities in Brazil. Particularly, large-scale parts manu-



facturers are not merely establishing production facilities but are making R&D investment to localize parts. The proportion is high at 72.5% in 2013.

The overseas investment of Korean automotive parts companies is made in relation with Korean automotive companies. In the early 2000s, investment destinations for Korean automotive parts companies were confined to the countries where Korean automotive companies have their manufacturing facilities or KD plant. Although the percentage of investment made in countries where Korean automotive companies have their manufacturing facilities remains high, Korean automotive parts companies have begun to diversify their investment destinations and, in 2013, are reported to have invested in up to 26 different countries. What is more, the investment in countries with no Korean automotive companies' manufacturing facilities is begun to be made these days. Korean automotive parts companies are increasingly investing in developed European countries with the strong automotive industry and are reported to invest about 181.12 million US dollars in Germany, Portugal and France in 2013. The investment is also growing in Mexico, Poland, Vietnam, Hungary and other countries with the growing automotive industry.

As opposed to the automotive industry, the automotive parts industry is making foreign investment to achieve a lot more purposes. In the initial stage of entering into the foreign market, boosting exports and using low-wage workers were major purposes for making investment. Recently, however, automotive parts companies are making overseas investment to benchmark advanced technologies and explore the local market. When analyzed by part

type manufactured by company, automotive parts manufacturers that supply parts for the car body have continued their overseas investment to enter into the local market whereas automotive parts manufacturers that supply parts for the engine or power transmission gear are making overseas investment to boost exports as these parts can be sold to diverse companies in the local market. In case of automotive parts manufacturers that supply electric apparatus parts, these companies are making investment overseas mainly to benefit from low-wage workers. For instance, automotive parts manufacturers that manufacture wiring harness or other parts that require simple assembly operations are investing overseas to use low-wage workers in China and other countries with the low-wage workforce. In the initial stage of investment, the main purpose of making investment in building overseas facilities was to use low-wage workers. But the proportion of automotive parts manufacturers that make investment in building overseas facilities to boost exports and benchmark advanced technologies is on the rise recently.

It is also found out that the percentage of companies supplying parts to Hyundai Motor Company and its subsidiaries is higher among automotive parts manufacturers that make investment overseas. Of automotive parts companies that do not make investment overseas, about 58.4% of companies are reported to supply parts to Hyundai Motor Company while 64.3% of automotive parts companies that make overseas investment are reported to supply parts to Hyundai Motor Company. The greater the numbers of countries the companies make investment in, the higher the likelihood it has of supplying parts to Hyundai Motor Company. That is, of au-

tomotive parts manufacturers making investment in one country, 55% of them supply parts to Hyundai Motor Company, which is even lower than the percentage among automotive parts manufacturers not making overseas investment, while 67% of automotive parts manufacturers making investment in at least two countries is supplying parts to Hyundai Motor Company. This shows that automotive parts manufacturers making overseas investment tend to rely heavily on Hyundai Motor Company in doing their business. This is attributable to the fact that automotive parts manufacturers rely heavily on automotive companies in sales revenue creation and thus make decisions focused more on sustaining a good relationship with automotive companies rather than making decisions based on the results of financial analysis. Also, based on the theory of internalization, automotive parts manufacturers that secured advantages by own production, continued business relationship and exchange of ideas for solving issues are found to be more active in its foreign investment.

Automotive parts manufacturers are likely to invest more in foreign countries if they have a higher proportion of exports as opposed to the total revenues. In other words, automotive parts manufacturers that have secured a competitive advantage in the export market in terms of knowledge on market characteristics, production cost and productivity are making investment in the regions. Moreover, local production in foreign countries may require sourcing materials from the investing country. In these cases, the parent company can have opportunities to export materials to foreign subsidiaries, contributing to the growth in exports.

### 3) Changes in Competitiveness Structure of the Automotive Parts Industry Derived from Foreign Direct Investment

This research utilizes part of the survey data from the 2004 and 2012 surveys conducted by the Automotive Parts Industry Promotion Foundation and the Korean Institute for Korean Economics & Trade on primary automotive parts companies registered as members of the Automotive Parts Industry Promotion Foundation in order to analyze competitiveness and performance of automotive parts companies that made foreign investment. Survey respondents are divided into the two groups of companies: companies that made foreign investment and companies that didn't make foreign investment. The responses for survey questions regarding business competitiveness and performance are used for the analysis. The results of the 2004 survey can be useful in examining the early stage of foreign investment of the Korean automotive parts industry as the year 2004 was the time when automotive parts companies started to invest directly in foreign countries while the results of the 2012 survey can be useful in examining the latest stage of foreign investment of the Korean automotive parts industry as the year 2012 is the time when the direct investment of the Korean automotive industry is made in earnest.

According to the findings of the 2004 and 2012 surveys on domestic automotive parts companies, the difference on quality competitiveness between companies that made foreign investment and companies that didn't make foreign investment is more striking in 2012 than in 2004. If the quality competitiveness of Japanese automotive parts companies is considered 100, the quality competi-

tiveness of companies that didn't make foreign investment was 93.9 in 2004 while that of companies that made foreign investment was 93.6. However in 2012, the quality competitiveness of companies that made foreign investment was improved to 94.6 to close the quality gap slightly with parts produced by Japanese companies whereas that of companies that didn't make foreign investment was lowered to 88.0.

The efficiency of production process and automation level of Korean automotive parts manufacturers is turned out to be about 90% of that of Japanese automotive parts manufacturers, which means the level of skills workers have plays a bigger role in ensuring the overall quality of products in Korean automotive parts manufacturers and thus there is room for improvement in the quality by enhancing the efficiency of production process and automation. Similar patterns are observed in the quality of components and parts. What is also important in quality is that, automotive parts companies that make foreign investment have been able to increase the quality competitiveness thanks to the improved quality management and parts design capability, which play a key role in determining the overall quality of products.

Also, the technological competitiveness of automotive parts companies making foreign investment have been improved over the years, going up from 87.9 in 2004 to 91.8 in 2012. Meanwhile, the technological competitiveness of automotive parts companies that do not make foreign investment has declined from 91.2 in 2004 to 90.4 in 2012, widening the gap with Japanese automotive parts companies.

In most areas of technological competitiveness, the overall

technological competitiveness of automotive parts companies that made foreign investment was reported to be low in 2004 but higher in 2012 when compared with automotive parts companies that did not make foreign investment. Such phenomena are observed in many areas of technological competitiveness such as part design technology, new product development technology, new technology application technology and production technology. Although the gap with Japanese automotive parts companies has closed slightly when compared with the year 2004, the difference is still considerable in terms of new product development and application technologies. Thus, the difference in the areas where new technologies like eco-friendly car or smart car development technologies are required is likely to remain for some time in the future.

Efforts made by automotive parts companies that make foreign investment are highlighted with the quality of researchers they have. The quality of researchers at automotive parts companies that made foreign investment was 90.8 when compared with quality of researchers at Japanese automotive parts companies, which is slightly higher than the quantity of researchers that these companies have.

Similar results are observed in comparison of R&D-related hardware (i.e. investment amount and facilities/equipment level). The investment amount and facilities/equipment level of automotive parts companies that made foreign investment was slightly higher than that of automotive parts companies that did not make foreign investment in the 2004 survey and was way higher than that of automotive parts companies that did not make foreign investment in the 2012 survey results.

In terms of price competitiveness, the price competitiveness of automotive parts companies that made foreign investment was 87.2 in 2012, which is similar to the figure of automotive parts companies that did not make foreign investment and is slightly lower than 88.5 in 2004, indicating that the price competitiveness has continued to improve since the initial stage of overseas investment. However, the price competitiveness of automotive parts companies that did not make foreign investment and has declined from 84.6 in 2004 to 86.5 in 2012.

The results of comparison of components of manufacturing cost show that the material cost of both automotive parts companies that did not make foreign investment and automotive parts companies that made foreign investment is about 88% of Japanese companies, highlighting that foreign investment does not influence material cost. The difference between countries and between areas appears larger in terms of labor cost. According to the 2012 survey, the labor cost of Korea automotive parts companies is about 80 to 90 of that of Japanese companies, which is significantly worsened from 77 in the 2004 survey. Also, the difference with Chinese companies is significant and the difference in labor cost is considered to have effects on price competitiveness. In terms of labor cost, the competitiveness of Korean automotive parts companies is found out to be in between that of Japanese and Chinese companies. In the 2004 survey, the labor cost competitiveness of Korean automotive parts companies that made foreign investment was 78.5, which is similar to 77.4 of Korean automotive parts companies that did not make foreign investment. However, in the 2012 survey, the labor cost competitiveness of Korean automotive parts companies that

made foreign investment was reported to be 90.0 and the gap with automotive parts companies that did not make foreign investment is also found out to be widened. Such a rise in labor cost leads to an increase in manufacturing cost and weakens price competitiveness, making companies to be involved more in foreign investment.

#### 4) Changes in Business Performance of the Automotive Parts Industry Derived from Foreign Direct Investment

In order to examine the changes in performance derived from foreign investment, P&L statement, financial statement and other business performance reports of 50,000 companies that are subject to external audit are collected to build the database and then the required corporate business data is extracted to conduct the analysis. About 1,156 companies that are classified as the automotive parts segment (KSIC 303) in Korea Standard Industrial Classification (KSIC) are selected. In order to examine whether these 1,156 companies made foreign investment or types of automotive parts produced, 'the Automotive Industry Handbook' issued by the Automotive Industry Cooperative is used. A total of 180 companies are selected based on whether they make foreign investment, investment destinations and year to examine the changes in performance over the years.

In 2012, the average sales revenue of automotive parts companies that made foreign investment is reported to reach 363.1 billion Korean won, three times higher than that of automotive parts companies that didn't make foreign investment. In general, companies that can make foreign investment are large-scale com-



panies and have more favorable business conditions and thus the average sales revenue of automotive parts companies that made foreign investment is reported to be higher than that of automotive parts companies that didn't make foreign investment.

Taking a look at the annual average growth rate of sales revenue, the annual average growth rate of sales revenue was 13.3% for automotive parts companies that made foreign investment while that rate was 9.6% for automotive parts companies that didn't make foreign investment. The period 2001~2012 was the period when the Korean automotive industry grew rapidly in the global market and that is why the annual average growth rate was quite high for most companies yet the rate is higher amongst automotive parts companies that made foreign investment. This is because when automotive parts companies make foreign investment, they compete with a limited number of competitors in the foreign country and tend to dominate the market, resulting in the higher sales revenue.

The comparison of the number of employees hired by automotive parts companies that made foreign investment and automotive parts companies that didn't make foreign investment shows that the number of employees hired by automotive parts companies that made foreign investment increased from 371 in 2001 to 498 in 2012 while the number of employees hired by automotive parts companies that didn't make foreign investment increased from 216 in 2001 to 237 in 2012. The average number of employees grew by an annual average of 2.7% in automotive parts companies that made foreign investment but only by 0.8% in automotive parts companies that didn't make foreign investment.

Contrary to the concerns that domestic production would shrink

as a result of overseas investment, the automotive industry has been growing steadily over the years quantitatively (i.e. sales revenue and the number of employees). The sales revenue of automotive parts companies that made foreign investment also has grown steadily. The growth rate in number of employees, an indicator for employment status of company, is higher among automotive parts companies that made foreign investment, demonstrating that overseas investment has not resulted in a contraction in domestic production.

Meanwhile, the labor cost of automotive parts companies that made foreign investment grew by 8.4% annually during the period 2001~2012, which is 1.8% point higher when compared with 6.6% reported by automotive parts companies that didn't make foreign investment. The average labor cost in the financial statement is divided by the average number of employees per company to calculate the average labor cost per capita, which is used to examine the quality of employment indirectly. The results show that automotive parts companies that made foreign investment conducted R&D projects to strengthen their technological competitiveness and, in doing so, tended to hire more researchers, resulting in a rise in labor cost.

As for business performance, contrary to the concerns that domestic production would shrink as a result of overseas investment, automotive parts companies that made foreign investment have continued their growth over the years. In particular, automotive parts companies that made foreign investment show good performance in exports, employment and growth rate. The growth rate of these companies is found out to be on the rise over the

years. In addition to the quantitative growth, the qualitative growth rate (i.e. R&D and employment quality) of these automotive parts companies is found out to be higher than that of automotive parts companies that did not make foreign investment.

Such great performance of automotive parts companies that made foreign investment is reported thanks to an improvement in management efficiency as production elements move globally and local workers were able to be utilized efficiently. On top of that, the experience of overseas investment and performance are considered to have accumulated and brought into the domestic industry. The risk of overseas investment made by automotive parts companies is relatively low because these companies make investment together with automotive companies, which doesn't guarantee that automotive companies would take full responsibility and provide full support to automotive parts companies. Therefore, automotive parts companies themselves should continue their efforts to strengthen R&D to localize their products and make investment in facilities, equipment and labor.

### **3. Policy Recommendations**

As the domestic market is expected to remain stagnant for some time and local production cost, the automotive industry is likely to continue its overseas investment in the future. In particular, a close cooperation between automotive companies and automotive parts companies in design and quality assurance is required and automotive companies prefer domestic automotive parts manufactures because they want to prevent the leakage of critical information on

technologies. As the recall of vehicles is garnering much attention in the global automotive industry, automotive companies want to minimize risk by continuing their business relationship with the existing automotive parts companies whose quality and reliability is proven. Hence, more and more automotive parts companies are expected to establish manufacturing facilities overseas.

At a time when the overseas investment of the automotive industry is expected to rise in the future, automotive parts companies should pay attention to the changes in the global procurement system that is being observed in the global automotive industry. As automotive companies are trying to procure more materials and resources in the local region, automotive parts manufacturers would also make effort to build business relationship with local parts manufacturers and begin to source more materials and parts from local vendors. Therefore, small- and medium-sized parts manufacturers are likely to build or secure manufacturing facilities overseas. However, small- and medium-sized parts manufacturers have many obstacles like the lack of information and difficulty of securing workers capable of working in a global business environment and thus small- and medium-sized parts manufacturers should seek various investment methods like joint investment in order to minimize the risk.

The size of overseas investment of the Korean automotive parts manufacturers is two to three times larger than that of foreign investment. The results of the 2004, 2012 survey and of business performance of companies show that automotive parts manufacturers are actively involved in business activities in the local market. When companies are making foreign investment, they try to

position themselves in the optimal location in the business value chain to maximize financial and strategic business performance and focus more on strengthening their long-term competitiveness rather than on short-term profit. In the survey, automotive parts manufacturers that made foreign investment themselves responded that the competitiveness of the companies is strengthened thanks to the overseas investment they make.

Making overseas investment is inevitable for automotive parts manufacturers if they want to sustain growth in the globalized economy. To make their investment successful, automotive parts manufacturers should respond to the changes in the automotive industry and develop the right vision, strategies and policies.

### **(1) Corporate Response Strategies**

#### **1) Building a Global Business Network**

Domestic automotive parts manufacturers making foreign investment tend to make investment by themselves in the majority of cases. Although most domestic automotive parts manufacturers and automotive companies jointly establish manufacturing facilities overseas in many cases, investing through acquisition, affiliation or joint project – instead of making independent investment – is being preferred and highlighted. In order to respond to changing environments in the industry and secure a competitive edge, major companies in the automotive industry are actively engaged in M&A or partnership building activities. Therefore, domestic automotive parts companies should consider M&A or partnership with other

companies to build a foundation for growth, obtain a technological competitiveness to be able to compete with global players and to expand their market base.

Nevertheless, as collaboration amongst SMEs is considered difficult in Korea and the vertical integration commerce structure makes such collaboration more difficult, not many cases of M&A amongst SMEs are reported in Korea. The exclusive collaboration culture becomes an obstacle for Korean small- and medium-sized automotive parts companies in their efforts for building specialty through open innovation, globalization and building up the size of their business. Although building partnership, affiliation and M&A are not the only way of boosting competitiveness of automotive parts companies, automotive parts companies should consider building a strategic partnership to complement weaknesses.

## 2) Enhancing the Strategic Status of Local Manufacturing Plant

As most domestic automotive parts manufacturers and automotive companies jointly establish manufacturing facilities overseas in most cases, the superior-subordinate relationship between the automotive companies and parts companies exist in the country they are investing. Although it is true that the superior-subordinate relationship has contributed to the good business performance of automotive parts companies, automotive parts companies should do more business with local vendors and manufacturers to be able to maintain their competitive edge in the long term. In particular, as the global procurement system is being changed and Korean automotive companies have accumulated the experience of pro-

ducing their products in foreign countries, automotive companies are changed are increasingly sourcing all materials and parts in the local region to reduce cost.

In the early stage of overseas investment, automotive parts companies were able to receive orders from the automotive company thanks to the business relationship they have built although these companies lack marketing skills or global business experiences. However, as automotive companies have more business transactions with local parts manufacturers, Korean automotive parts companies investing overseas now face a situation where they have to compete with local parts manufacturers. Korean automotive parts companies have remained passive in their effort to diversify customer base in the foreign countries and consider how the Korean automotive company would respond to their attempt for customer diversification. Under such changing circumstances, however, automotive parts companies should develop strategies to respond to a changing procurement method of the Korean automotive company, poor sales figures and other business risks.

Therefore, automotive parts companies should break away from their existing strategy of focusing on the headquarters and the home country and give more authority to the local manufacturing plant. They should hire local skilled workers and strengthen their own marketing strategies to be less dependent on the automotive company and build economies of scale by building the network in the region. To this end, automotive parts companies should localize their labor and HR management to promote production activities and strengthen their own global competitiveness based on their collaborative relationship with the automotive company so

that they can build new business relationships with local automotive companies in the region. Through such endeavors, Korean automotive parts companies can have an opportunity to grow into a truly global parts manufacturer.

### 3) Securing and Nurturing Global Talents

Korean automotive parts companies that have manufacturing facilities in a foreign country have faced many challenges – such as the lack of qualified workers and difficulty in labor management – and, in particular, it is hard for Korean automotive parts companies to secure workers who are knowledgeable about both automotive technologies and the local business environment. The turnover rate is high in SMEs as relatively low wages and unfavorable treatment make qualified workers to find another job opportunity, which is also giving a negative impact on the efficient operation of local manufacturing facilities.

Although local workers in the production line should be able to attend training to ensure the quality of production process and products, the majority of SMEs lack facilities and qualified workers, making it more difficult for them to improve the current situation. Due to the lack of financial and human resources, some automotive parts companies dispatch only the minimum necessary number of workers from the headquarters to the local manufacturing facilities, resulting in the lack of ability to respond to various issues arising in the local manufacturing facilities. In order to solve this issue, local workers can be sent to the plant in the country where the headquarters is located for training to improve the skill level



of local workers and additional training and education sessions on the automotive industry can be provided on-site. Such measures will contribute to improving the image of automotive parts companies in the local region and obtaining the support from the local government.

#### 4) Strengthening R&D Innovation Capacity

In order to minimize the contraction in domestic automotive industry that can be caused by the hollowing out of industry and movement of production elements to the foreign country, the linkage between overseas production and domestic production should be strengthened. Also, in order to support smooth production at strategically-important foreign manufacturing facilities and make sure that the quality of products manufactured at overseas facilities is the same as that of products manufactured at home, the roles of both domestic and overseas manufacturing facilities should be redefined. In other words, the roles of domestic manufacturing facilities should be strengthened by stepping up capacity through R&D efforts. In particular, research and development efforts should be carried out to develop core technologies and state-of-the-art automotive parts. For sustainable growth, both the basic capacity and the capacity for innovation should be fostered to ensure the smooth supply of materials and parts to overseas manufacturing facilities.

Korean automotive parts companies that have overseas manufacturing facilities tend to pay more attention to researchers and R&D and spend more money on R&D programs but still are not

making as much effort as Japanese automotive parts companies. In both relative and absolute terms, Korean automotive parts companies are lagging behind Japanese automotive parts companies in the R&D sector.

As the sales revenues increase and the size of business grows with overseas investment, the new growth engine should be developed to sustain the business growth and that is why the importance of R&D is all the more highlighted. Particularly, domestic manufacturing plants of Korean automotive parts companies that serve as the role model for overseas manufacturing facilities should standardize their production process, develop problem-solving manuals for mass production, increase the skill level of workers, develop technologies to enhance productivity and conduct R&D projects to develop high value products to prevent the contraction of production at domestic manufacturing facilities.

## **(2) Government's Response Strategies**

### 1) Support for Technology Development Capacity

In relation with the automotive parts industry, the Korean government put forth its vision of turning Korea into "one of the top four global automotive parts powerhouses" and presented three objectives under its vision: develop key technologies to take an advantageous position first in the global market, grow the country's materials and parts manufacturing industry to the level of developed countries and turn Korea into a country that supplies major materials and parts to the global market. In order for the

Korean government to achieve its objectives and vision, domestic automotive parts companies that are making investment in foreign countries should play their roles.

Although domestic automotive parts companies are increasingly investing more in R&D, they relatively have weak innovation capacities. As the automotive industry is increasingly becoming module-based and eco-friendly, the roles of parts companies have become bigger. So more and more automotive companies are calling on automotive parts companies to jointly invest in R&D projects or expand their R&D investment. Automotive parts companies should make more strenuous efforts to develop high value products through R&D efforts in order also to prevent a fall in domestic production due to the overseas investment. However, there are not enough qualified researchers at SMEs as researchers are not reluctant to work for SMEs because of low pay level and unfavorable treatments. Furthermore, as domestic automotive parts manufacturers tend to supply products to the automotive companies at the request of these automotive companies, they lack the capacity to conduct R&D projects independently.

Thus, the government should expand its investment on basic R&D projects of small-and medium-sized automotive parts companies so that these companies can build up R&D capacity and devise policy measures to enable these companies to strengthen their R&D capacity. Considering a changing technology development paradigm, financial soundness, growth potential and track record on R&D investment, the government should choose and provide selective support for the chosen automotive parts manufacturers to enhance the efficiency of support it provides. In particular, the

government should select and concentrate on the chosen automotive parts companies in providing support for R&D investment. The government should focus more on high technology areas where individual companies have difficulty investing in, take into account the trends in technology and the market and concentrate its support on the selected strategic R&D projects.

## 2) Building an Efficient Linkage between Support Policies

With regard to support for domestic automotive parts companies that are currently investing overseas and are planning to make foreign investment, the efficient support system should be established by linking related support schemes. First, the government should examine the currently available support organizations and systems for small- and medium-sized domestic automotive parts companies and link such organizations and systems to provide the right kind of support for the companies investing overseas.

Rather than merely providing information on the investment destinations or serving as an agency for globalization, the government should develop the right policy measures to share the experiences of other Korean automotive parts companies that have made investment in a foreign country before so that Korean automotive parts companies hoping to making global investment can take lessons from the cases, trials and errors of the Korean automotive parts companies that have made investment in foreign countries. Currently, the government is providing support to SMEs through an agency in handling procedures required for global investment. However, the government should seek measures that can enable

these companies investing overseas to try and experience such procedures on their own so that they can independently survive in the global market.

### 3) Support for Securing Global Talents

A considerable number of Korean automotive parts companies that are making foreign investment lack qualified workers with the previous experience in the investment destination and face difficulty expanding their customer base and furthering their investment. That is partly due to the shortage of finances resulting from a rise in wages but is also due to the tendency among workers to avoid SMEs for the reasons of unfavorable treatments and lower wages. In case of emerging markets, there are some local automotive companies that want to source parts from the Korean automotive parts companies there, but Korean automotive parts companies have failed to meet the demand from local automotive companies due to the lack of qualified production management workers or other staff in some cases. As the global capacity of Korean automotive parts companies is enhanced, there should be qualified researchers who are knowledgeable about the global market circumstances. Support should also be provided to make sure that such qualified workers can be funneled into small- and medium-sized automotive parts companies.

As the domestic talent nurturing program has been confined to the trade-related businesses, it has not been of much help to automotive parts companies that have built foreign manufacturing facilities. As the country is seeing an increasing number of cases

where companies are directly investing in foreign markets, more training programs should be organized to nurture qualified workers who can excel in the global business setting.

#### 4) Building the Government's Perspectives on Overseas Investment

In the early 2000s when the economies around the world are becoming increasingly globalized, the domestic automotive industry that had been focusing only on exporting shifted its attention to direct foreign investment to advance its business growth. Amid such circumstances, the government also developed and announced its diverse policies to support foreign investment of companies and to globalize the Korean automotive industry. However, although foreign direct investment and global sourcing of Korean automotive companies have been on the rise, problems like the weak investment in the domestic industry and a shortage of job openings raise a controversy of the possibility of hollowing of the industry. The government is also striving to secure foreign investment and announced a plan to bring back domestic companies that are making foreign investment to the country so that these companies can focus more on investing at home and build more domestic manufacturing facilities. Nonetheless, the domestic market has limitations and automotive companies cannot grow sustainably in the domestic market. That is why foreign direct investment is inevitable and thus the government should have its vision and perspectives clearly defined and publicize them to the public. When both the government and companies have strong competitive advantages,

the country's overall overseas investment can be facilitated and foreign entities are increasingly investing in the domestic industry. And an adequate level of harmony between the competitive advantage of the government and that of companies can prevent the hollowing out of the industry. Therefore, the government should raise awareness among the public that foreign direct investment is not one of the major reasons behind the hollowing out of the industry and set the policy direction of the country's overseas investment for the future.