

Connection relation between core entire-car companies and regional enterprises in the Tohoku region

Executive Summary

1. Objectives and targets of this research

This research report develops a local automobile-industry theory comprising the management-strategy theory and the regional economic theory, which multiply capture the development, production, and procurement phases in the automobile industry in the Tohoku region. The Tohoku region's core enterprise is Toyota Motor East Japan (hereinafter referred to as "TMEJ"), which was established with the merger of three Toyota-affiliated companies in 2012. There are three factories of the Iwate factory as an entire-car factory, Miyagi Ohira factory, and Miyagi Taiwa factory as a parts manufacturing factory in the company's Tohoku production base. Also, in Iwaki City, Fukushima Prefecture, Iwaki factory, a Nissan's engine factory, is located. The Tohoku region's automobile industries gather around the affiliated companies and factories of these major entire-car enterprises representing Japan. However, TMEJ's entire-car factories in the Tohoku region are specialized in production and do not have the decision-making authority for design development and parts procurement. This makes complicated the state of automobile-industry accumulation in the Tohoku region despite huge branch factories. This research report's interest is such a point.

2. Population movements (productive age population) in the Tohoku region and typification of a local automobile industry

The Tohoku region's productive age population is less than Aichi Prefecture. The total productive age population of six prefectures in the Tohoku region is about 5,300,000 as of 2015 and about 3,300,000 in the estimate in 2040. On the other hand, the estimated productive age population of Aichi Prefecture is about 4,680,000 as of 2015 and about 4,000,000 as of 2040. The productive age population of Aichi Prefecture alone exceeds that of the Tohoku region's six prefectures. In other words, the Tohoku region bears the heavy constrain condition that the state of automobile-industry accumulation must be examined, considering the future rapid decrease in productive age population.

Next, to relativize the features as the Tohoku region's automobile-industry accumulation, only the main point is redisplayed about the standard to classify agglomerations across the country as follows.

When seeing the castle town-type accumulation, which bears an automobile industry in mind, from the viewpoint of whether the core enterprises' demand for industry goods (capital goods, such as equipment and jigs & tools, and intermediate goods, such as raw material and parts) can be completed within the accumulation, it needs to be understood

by subclassification. These can be typified into three as follows.¹ It should be noted that there is a big difference between accumulations, even in the same type. Typification here is just for distinguishing the accumulation's character for convenience.

Three typifications are the conclusion-inside-the-area-type, the immaturity-inside-the-area-type, and the dependent-on-outside-the-area-type. The first conclusion-inside-the-area-type is for the case where most of the core enterprises' demand for industry goods can be met inside the accumulation. Specifically, they are: (i) The wide-area Tokai area around Nishimikawa, Aichi Prefecture, in which the Toyota Motor Corporation's prime entire-car factories (Motomachi, Takaoka, Tsutsumi, and Tahara) and the entire-car factories of Toyota Auto Body, auto body production affiliated company (Fujimatsu, Yoshiwara, Inabe, Mie Prefecture, a little far, affiliated company Gifu Auto Body) gather. (ii) The Kanto area around Kanagawa Prefecture and Tochigi Prefecture, in which Nissan Motor Corporation's prime entire-car factories (Oppama, Tochigi) and the entire-car factories of Nissan Shatai, auto body production affiliated company (Shonan) are located. (iii) The north Kanto area, in which Sayama Automobile Plant, the HONDA Motor Corporation's prime entire-car factory in Eastern Japan (Sayama, Yorii) is located. The second immaturity-inside-the-area-type is for the case where the core enterprises' demand for industry goods can be met to some extent inside the accumulation, although it cannot be necessarily concluded as the conclusion-inside-the-area-type shown above. Specifically, they are: (i) The wide-area Hiroshima area including the area from the Ujina factory next to the Mazda Motor Corporation's head office to the Hofu factory, Yamaguchi Prefecture. (ii) The neighborhood of Mie Prefecture, in which Suzuka Factory, the HONDA Motor Corporation's prime entire-car factory in Western Japan and the entire-car factory of Honda Auto Body, auto body production affiliated company are located. (iii) The neighborhood of Okazaki City, Aichi Prefecture around Okazaki Manufacturing Company of Mitsubishi Motors Corporation. (iv) The Western Shizuoka Prefecture, in which Suzuki Motor Corporation's prime entire-car factory (Kosai, Iwata.) (v) The Kansai area (Osaka Prefecture, Kyoto Prefecture, Shiga Prefecture,) in which the prime entire-car factories around the head office of Daihatsu Motor Company (Head office Ikeda, Kyoto, Ryuo, Shiga) are located. (vi) The Ryomou area across Gunma Prefecture and Tochigi Prefecture, in which Gunma Corporation, Subaru Corporation's prime entire-car factories (main factory, Yajima) are located. The third dependent-on-outside-the-area-type is for the case where the core enterprises' demand for industry goods can be met inside the accumulation only imperfectly. Typically, it means large-scale branch factory-type accumulation developed by prime entire-car enterprises. The Tohoku region around TMEJ interested by this research report applies to this category. In addition, the north Kyushu area, in which Toyota Motor Corporation Kyushu, Nissan Motor Corporation Kyushu (including Nissan Shatai Kyushu, auto body production affiliated company,) and the Kurashiki and Soja area, Okayama Prefecture around Mitsubishi Motors Corporation Mizushima are given as examples.

The decisive factors that these three types work out are summarized into whether the leading parts companies, which are core enterprises inside the accumulation and neighboring business partners, have a development function and the procurement authority. For the dependent-on-outside-the-area-type, into which the Tohoku region locating TMEJ is classified, typically, the only large-scale producing function is given, and

¹ There is also a big difference between accumulations in the type shown below. For example, in the case of the conclusion-inside-the-area-type mentioned below, the maturity index of accumulation around Toyota is extremely high, exceeding those of Nissan and Honda. It should be noted that typification here is just for distinguishing the accumulation's character for convenience.

the decision-making authority in accumulation is considerably restrained. A neighboring parts company is not a regional enterprise. Rather, it is not unusual for a parts company to do business at the core enterprise's base advance into the area concerned. Therefore, except in some regional enterprises, the dependent-on-outside-the-area-type is regarded as that the accumulation itself forms a huge branch factory-type economic bloc.

3. Summary of issues

The analysis results in each chapter are summarized, and the hitting point of this research report is presented. First, in Chapter 1, the process in which TMEJ formed competitive strength was discussed from an entire-car enterprise's viewpoint. TMEJ positioned as a base that bears compact vehicles in the Toyota group needed to reduce costs thoroughly without depending on a large amount of fixed-asset investment. Therefore, TMEJ has improved Tohoku manufacturing's competitive strength based on the mutual diligent study with regional enterprises. Also, it promoted the scheme and introduced order production and order delivery. Since order production and order delivery are difficult for a supplier for multiple customers to respond, it is difficult to respond if it is not a supplier for specific customers. The TMEJ's production system made the best of regional enterprises' features in Miyagi Prefecture and Iwate Prefecture, which had the tendency depending on their own companies.

In Chapter 2, from the parts company's viewpoint, the trend of the Iwate Prefecture regional enterprises engaged in the production facility, jigs, and equipment of an automobile-related company was identified. Since the production facility-related business is the field for which each production base has a procurement authority, it is assumed that it is easy for the Tohoku regional enterprises to enter, as opposed to the auto parts purchase for which the procurement authority is collected at the head office. In this chapter, based on three regional enterprises' hearing, the transition where they entered the automobile industry from the electrical machinery-related industry was reviewed. Today, the domestic production base's miniaturization is being required. Since production facility-related business is respected, it may be regarded as one model for Tohoku (or the dependent-on-outside-the-area-type accumulation) enterprises to enter the automobile industry.

In Chapter 3, from the support organization's viewpoint, the Tohoku region, where the automobile industry gathers, and the neighboring Gunma Prefecture were focused on, and the situation where the public institution supported the local industry was summarized. Iwate Prefecture and Miyagi Prefecture have moved forward to promote the automobile industry in the Tohoku region. The two prefectures playing a central part have grown to the support system by eight prefecture's cooperation. Support and encouragement are concretely being advanced on the "prefectural level" and the "Tohoku level," and the automobile industry is being promoted in the whole region. The public institution's support plays an important role in building a certain scale of automobile industry accumulation. Also, it was made clear that Gunma Prefecture with a certain scale, in which the Tohoku region tries to expand business operations, does not develop supports in a special framework, the automobile industry at present. In order to shift the industrial accumulation to the next stage (qualitative change) from now on, it is high time to examine the state of the cooperation between a public institution and an entire-car enterprise.

Also, in the addendum, cases of the San-in region with a similar business environment to the Tohoku region, which shifts to the automobile industry from the electronics industry, especially two enterprises in Tottori Prefecture, were reviewed. One is an in-car product enterprise, and the other is a home electronics enterprise. Both of them had design/development functions. It is a great advantage to the enterprise's competitive advantage to build a consistent development and production system. Therefore, both companies' business sizes were comparatively large as a Tottori Prefecture regional enterprise, and the sales were about ten billion yen. Concerning the shift to the automobile industry from the electronics industry, it was also confirmed that a prefectural foundation's generous support was effective. These points will give useful suggestions to the Tohoku region's automobile industry.

4. Outstanding issues

The hitting point of this research report is as mentioned above. Finally, outstanding issues are presented. First, needless to say, the framework of regional business operations inside the area, which has not been sufficiently made clear yet, in the Tohoku region's automobile-industry accumulation, especially the connection relation between a core enterprise and a parts enterprise, must be identified by expanding the research target in the Tohoku region. The Tohoku region's core enterprise must be TMEJ. However, the trend of the production enterprise of a secondary battery (a key part of a hybrid system,) that is, the Miyagi factory of PEVE (Prime Earth EV Energy) (it is no exaggeration to say that it embodies Toyota group's competitive strength) must be also grasped. Second, the business trend of the affiliated company of the Toyota group direct line, which enter the Tohoku region, such as DENSO Corporation, AISIN SEIKI Co., Ltd., and TOYOTA BOSHOKU CORPORATION, was not referred to in this research report. If the roles which these main parts enterprises play in this place, issues, etc. are clarified, the features of the combination between enterprises in the Tohoku region automobile industry around TMEJ will be made clear in detail. At the same time, the trend of the regional parts enterprises mainly doing business with these Toyota-affiliated main parts enterprises also needs to be investigated in more detail. The third is the comparison with other areas. It leads to the relativization of the Tohoku region to discuss the difference from the local automobile industry accumulation in local regions, such as the Gunma Prefecture's Subaru economic bloc, a part of which was referred to in this research paper, the San-in region, which was referred to in the addendum, and the north Kyushu, which is positioned as a branch factory-type economic bloc as well as the Tohoku region.