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Business practices of purchasers in Japanese industrial districts: An integrated model for economies of agglomeration

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This paper aims to reveal the conditions for economies of agglomeration in Japanese industrial districts. The existing Japanese industrial district theory has focused only on supplier-side logic and ignored the purchaser-side logic. In light of the purchaser-side logic, we interviewed large retail firms serving as purchasers for industrial districts and 21 small-scale firms located in Tokyo's Ota Ward and Joto area, serving as suppliers. These interviews showed business practices called "*Kouza*" and "*Chouai*": Large enterprises deal only with *kouza*-holding firms. Assuming these business practices, we will complete the mechanism behind economies of agglomeration in industrial districts for the first time. (100 words)

industrial district, agglomeration, localized labor market, *kouza*, business practices

Japanese industrial district theory and business practices of purchasers

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1. Introduction

In the past two decades, there have been intensive debates on spatial issues, such as industrial district or industrial cluster. Several crucial studies, such as Piore & Sable (1984), Krugman (1991), Porter (1990, 1998), and Saxenian (1994), have been carried out, and their important contributions advanced the analysis of territorial agglomeration of firms and economic activities enormously. At the same time, individual case studies on industrial districts have been conducted, for example industrial district in Italy (Lombardi, 2003; Russo, 1983) or US high-tech industry (Dorfman, 1983; Saxenian, 1991, 1994).

In Japan, interest in industrial districts has also increased rapidly since the latter half of the 1990s. Amid a lengthy economic downturn, there were lively movements attempting to revitalize regional economies by creating industrial districts across Japan (*e.g.*, Matsushima, 1998; Ogawa, 1998; Ohashi, 2000) and lively discussion on connecting technology transfers from universities to regional industrial clusters (*e.g.*, Ishikura et al., 2003). Several policies have launched at local level to national level: For example, Industrial Cluster Project has implemented since 2001 by Ministry of Economy, Trade and Industry.

Originally, Japanese industrial districts have closely linked with large firms' product development. Because, Japanese large manufacturers and distributors use industrial districts in order

to make prototypes or order custom goods. Some studies pointed out that Japanese economies and large manufacturers have benefited enormously from small and medium-sized enterprises in industrial districts (Seki, 2003; Seki and Kato, 1990; Watanabe, 1997).

To begin with, there are two strains of industrial district theory: the Weber strain explaining the mechanisms behind formation of industrial districts based on location theory and the Marshall strain explaining the mechanisms behind the functioning and continued existence of industrial districts based on small-business theory (Matsubara, 1999; Sumiya, 1971; Yamamoto, 2005). Weber explained the formation of industrial districts by clearly differentiating simple geographical economies in terms of factors such as transportation costs and labor costs and advantages arising from the agglomeration of companies itself. Marshall was highly interested in the surprising continuity of industrial districts over long periods of time even after the loss of geographical advantages. In other words, it can be said that a disputed point in industrial district research is elucidation of the mechanisms of economies of agglomeration, as distinct from geographical economies.

At the same time, Japanese industrial district theory, which has flourished since the latter half of the 1990s, has described merely the history of local industries. For this reason, it has argued theories of the formation and continued existence of industrial districts leaving the distinction between geographical economies and economies of agglomeration unclear. In addition, much research covers individual cases, with insufficient discussion of the degree to which such cases can be applied generally.

In this paper, we first summarize the mechanism behind economies of agglomeration, cited most commonly in Japanese industrial district theory. We point out that Japanese industrial district theory has repeatedly insisted that a condition required for small-scale manufacturers (suppliers) to enjoy economies of agglomeration is the existence within the industrial district of local markets for special skills. This shows clearly how Japanese industrial district theory has been unconcerned not only with generalization and theoretical development from individual cases but also with purchasers' logic.

In light of this state of affairs, in this study we interviewed large retail firms serving as purchasers for industrial districts and 21 small-scale firms located in Tokyo's Ota Ward and Joto area, serving as suppliers. These interviews clearly showed that the business practice of large manufacturers and distributors was to deal only with suppliers and subcontractors having supplier *kouza* or numbers, and that the presence of such *kouza* has come to signify the supplier's credit. As a result, such firms place strict demands on suppliers and subcontractors, such as (a) examining the latter firms when opening *kouza,* and (b) terminating *kouza* when problems arise with delivery times or failure rates. Furthermore, these results also show the clear presence of the business practice known as *chouai,* in which one of these firms holding *kouza* is designated the *chouai-saki,* charged with coordinating and serving as a liaison with other small-scale suppliers and managing production and delivery times, in return for commissions of several percentage points. Assuming this business practice as a precondition, for purchasers the presence within the industrial district of firms holding *kouza* becomes a necessary condition of enjoying economies of agglomeration.

Moreover, the following mutually reinforcing relationship exists between the two required conditions applying to the supplier and the purchaser above: (a) Since the presence of local markets

for special skills in the vicinity makes it possible for *kouza*-holding firms to accept orders from purchasers and maintain their *kouza* even for relatively large orders in comparison with their own capabilities such firms tend to locate in areas with local markets for special skills; and, (b) local markets for special skills tend to form in the vicinity of *kouza*-holding firms since outside suppliers accepting orders from *kouza*-holding firms can secure stable—if small—volumes of business. By looking on purchaser-side logic instead of only the supplier side as in past Japanese industrial district theory, we will complete the mechanism behind economies of agglomeration in industrial districts for the first time.

Furthermore, due to the facts that (i) purchasers and *kouza*-holding firms are separate organizations and (ii) moreover, *kouza*-holding firms are chosen individually by each purchaser (i.e., such firms differ by purchaser), this model can explain important the following characteristics and phenomena related to industrial districts that have been pointed out in Japanese industrial district theory: confrere trading, structures of social division of labor like mountain chains, and location of purchasers outside industrial districts. These points will be discussed as topics for future research at the end of this paper.

2. Disputed points in industrial district research: classical industrial district theory

Now, we revisit the two strains of industrial district theory. In particular, we clarify the disputed points in industrial district research by revisiting the classic works of each strain: Weber (1909) and Marshall (1920).

In his *Theory of the Location of Industries,* Weber analyzes agglomeration (concentration of economic activities or organizations involved in such activities in certain geographical areas). Considering firms' locations to be decided based first of all on minimization of transportation costs, Weber proposed economies in expenses as well as economies in labor costs as factors contributing to deviations from the points of minimized transportation costs. Then, he developed and studied models of how industrial agglomeration developed as a result of these factors.

Weber's contribution is in his differentiation between agglomeration resulting from minimization of transportation and labor costs (incidental agglomeration) and agglomeration resulting from economies in expenses (economies of agglomeration) arising from agglomeration itself (pure agglomeration). While the former economies originally are specific to certain geographical areas, the latter economies of agglomeration are not, because they can arise anywhere agglomeration takes place (Aoki, 1960). In other words, these can be considered economies that can be enjoyed only after agglomeration has taken place.

In Chapter 10 ("Industrial Organization, Continued. The Concentration of Specialized Industries in Particular Localities") of Book IV of *Principles of Economics,* Marshall discussed localized industries. First, regarding why localization (agglomeration of a number of small firms of the same industry in a specific geographical area) occurs, he enumerated a wide range of geographical factors and proposed that numerous fortuities could affect such localization. Rather, what Marshall focused on was the surprising persistence in industries in which localization already had taken place. Noting that "When an industry has thus chosen a locality for itself, it is likely to stay there long" (Marshall,

1920, p. 271), he proposed the following as primary factors: 1) growth of subsidiaries, 2) formation of local markets for special skills, and 3) adoption and spillover of new technologies. In particular, in *Industry and Trade* (Marshall, 1923), he called the adoption of new technologies based on local markets for special skills a "special industrial atmosphere" and proposed that this atmosphere itself was a primary factor behind the maintenance of localized industries over long periods of time. In other words, like Weber Marshall clearly differentiates simple geographical economies from economies of agglomeration.

Unlike Weber, Marshall differentiates internal economies (economies gained from growth in the size of a single company) from external economies, naming industrial districts as classic examples of external economies. Since Weber's agglomeration theory covered both growth in business size and agglomeration of multiple businesses together (Aoki, 1960; Fujikawa, 1999; Hoover, 1937; Itoh, 1970), it included advantages from internal economies such as adoption of more efficient machinery and production organizations resulting from expansion of a firm's size within the scope of economies of agglomeration. However, differentiation of internal and external economies is very important. Since only the affected firm can enjoy the benefits of internal economies, such economies cannot attract other firms to the vicinity. This is because it is thought that external economies, which other firms can enjoy, are the economies capable of attracting other firms to the vicinity. (Aoki, 1960)

This differentiation between geographical economies and economies of agglomeration means that the economies of agglomeration (external economies) proposed by Marshall will not necessarily be enjoyed by firms as a result of their agglomeration due to geographical advantages. In fact, according to Saxenian (1994), whose research compared Silicon Valley with Route 128, the Silicon Valley is a regional industrial structure based on the local community and on professional and information networks, in which were built human networks surpassing the boundaries of company and function, forming a culture that attempts to create new things. On the other hand, Route 128 has the regional industrial structure of a collection of vertically integrated firms, with almost no relations of mutual dependency apparent either socially or in work-related areas. As a result, although firms located in Route 128 enjoyed internal economies, the district did not advance to the formation of local markets for special skills or a culture of technological innovation as seen in Silicon Valley. Although Route 128 did see the formation of an industrial district, local markets for special skills did not form, and a culture of technological innovation did not develop there.

In light of the above discussion, we should be able to summarize points of dispute in industrial district research using the following three points:

(1) There is a need to analyze economies of agglomeration as distinct from geographical economies.
(2) In addition, since internal economies cannot attract other firms to the vicinity, focus should be placed on external economies, which can.
(3) Moreover, since industrial districts that have formed will not necessarily generate and sustain external economies automatically, there is a need to seek out the conditions for generating and sustaining external economies.

Although in speaking of external economies there is a tendency to bring up only economies from infrastructure improvements, such as railroads and roads (Hoover, 1937; Isard, 1956), external

economies also include those gained by multiple firms through direct interaction with each other.

This paper focuses on third point of dispute, what are the conditions for generating and sustaining economies of agglomeration in Japanese industrial district.

3. Reconsidering Japanese industrial district theory

3.1. Rarity of generalization and theoretical development

Since the 1990s, industrial districts have attracted attention for their possible contributions to increasing the competitive advantages of firms located in them (*e.g.*, Porter, 1990, 1998). In Japan in particular, as shown in Fig. 1 even when accounting for biases of search systems[1] it is a fact that literature on industrial districts has increased rapidly since the latter half of the 1990s. Amid a lengthy economic downturn, there were lively movements attempting to revitalize regional economies by creating industrial districts across Japan (*e.g.*, Matsushima, 1998; Ogawa, 1998; Ohashi, 2000) and lively discussion on connecting technology transfers from universities to regional industrial clusters (*e.g.*, Ishikura et al., 2003).

Perhaps due to this timing, research in Japanese industrial district theory has studied the Jonan area in Tokyo (Seki and Kato, 1990; Watanabe, 1998; Whittaker, 1997) and the Higashi Osaka area (Ueda, 2000; 2004a; 2004b), which can be seen as leading examples of urban industrial districts in Japan, Okaya in Nagano Prefecture, which features an agglomeration of the precision machinery industry (Seki and Tsujita, 2001), and Tsubame in Niigata Prefecture, a leading example of a rural industrial district (Iga, 2000; Seki and Fukuda, 1998), with such research frequently covering the history and current circumstances of such districts in detail from the perspective of small and medium-sized enterprises. For this reason, the research tends to fall into the pattern of specific analysis of individual case studies, without sufficient generalization or theoretical development in accordance with the three points of dispute summarized in the preceding section. Although simple comparison is difficult due to substantial changes in the numbers of journals indexed, literature on local industry seems to have peaked in the 1980s. Since it places such old wine (research on local industry) in new bottles (research on industrial districts), Japanese industrial district theory seems to have a strong tendency toward consisting only of coverage of localities.

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[1] Total numbers of hits per year when conducing a general bibliographic search in the National Diet Library Online Public Access Catalog User Guide (NDL-OPAC) and searches of indices of journal articles, using the keyword *sangyo shuseki* ("industrial district"). The search was conducted April 21, 2007. Care is required concerning the general bibliographic search because the number of journals indexed has undergone substantial changes. While 3 100 journals were indexed in June 1996, today the number has risen to 9 891. Also, the term *sangyo shuseki* was almost never used until the 1970s.

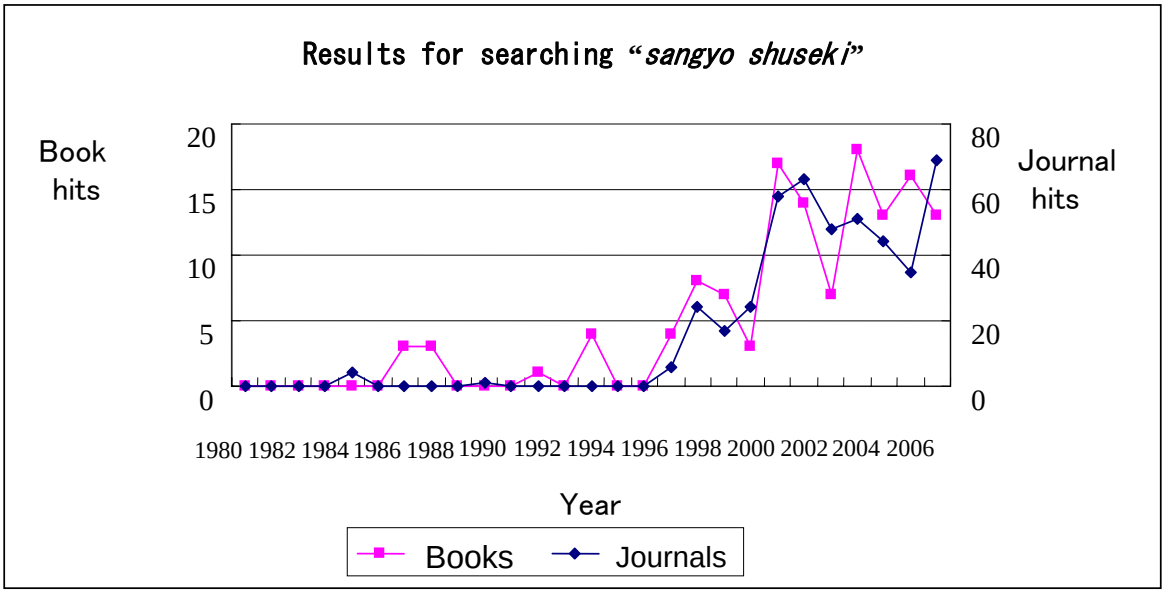

Figure 1: Results for searching "*sangyo shuseki*" (industrial district)

However, it is not the case that all preceding research merely begins and ends with the history and current circumstances of industrial districts. For example, in examining the cases of five local industries, Yamazaki (1977) showed that while the origins of the social division of labor apparent throughout local industry are fairly old and that the background behind the formation of such industries differs fairly considerably by locality, the following seven characteristics serve as functional and fundamental reasons for sustaining local industries over a long period of time: 1) lack of economies of scale, 2) technical divisibility of production processes, 3) availability of low-cost labor, 4) a social division of labor is a system that makes new entry easy with small amounts of capital, 5) a social division of labor that functions to diversify risks and keep them to minimal levels, 6) benefits of locating in a locality that increase massively as the external economy advantages increase in the process of development of local industry, and 7) adaptability and elasticity of the social division of labor that play a role in the formation of product structures suited to the times. In particular, he cited Marshall in explaining the external economy as described under characteristic "6."

Accordingly, in this paper we will identify and classify matters pointed out by the consensus in Japanese industrial district theory, conscious of Marshall's industrial district theory. Before doing so, we will first define key concepts. In this study, we define industrial districts according to Marshall (1920), as the location of a number of small and medium-sized enterprises of the same industry in a certain geographical area. In addition, we define economies of agglomeration according to Weber (1909), as cost savings enjoyed from use of an industrial district greater than those that could be enjoyed without using the industrial district. Since we are defining industrial districts according to Marshall (1920), these economies of agglomeration do not include internal economies. Below, we classify the claims of Japanese industrial district theory from the perspective of external economies — in particular, economies arising from the presence of local markets for special skills.

3.2. Consensus opinions of Japanese industrial district theory: supplier-side logic

Relatively low levels of unstable demand (i.e., volume of orders received that fluctuates constantly with factors such as economic and seasonal variations) has been pointed out as the background for firms located within industrial districts enjoying economies of agglomeration (Watanabe, 1997). When demand fluctuates quantitatively and qualitatively, production equipment must be rearranged to suit such changes with flexibility, but from a cost perspective the scope to which a single firm can respond to such changes is naturally limited. However, it is thought that a firm located inside an industrial district can secure subcontractors and organize, manage production of, and manage processes of such subcontractors with a consciousness of fluctuations in demand.

As pointed out by Marshall, a precondition for the above responses to be possible is the presence within the industrial district of local markets for special skills. When this precondition is met, even in response to large or high-level orders that it cannot handle on its own a company can procure the skilled labor it needs from local markets for special skills, enabling it to accept orders with an idea of the delivery times and quality levels it can achieve. However, it must be noted that skilled labor can be absorbed by firms not just through employment relationships but also through subcontracting relationships. In fact, in order to meet delivery time firms sometimes hire skilled laborers from outside as immediate reinforcements or subcontract work to small firms (Watanabe, 1997). In Ota Ward, thanks to the large numbers of confreres located nearby, firms can accept orders despite their own capabilities are weak or they would not be able to accept alone due to delivery-time or quantity considerations (Watanabe, 1997). In this way, firms in Ota Ward are able to focus on their own areas of specialization, while responding with flexibility to qualitative and quantitative fluctuations in demand.

Incidentally, that fact that local markets for special skills are maintained without vertical integration into a single firm means that the ranks of skilled laborers and small firms are undergoing constant renewal. A number of studies point out this mechanism—a mechanism that promotes independence and entrepreneurship.

For example, it is said that in Tokyo's Jonan area the route toward independence was observed by which skilled machinists with nearly 10 years' experience as factory employees shift from monthly salaried work to a subcontractor system in which they receive a fixed percentage of labor charges for orders received, starting by renting some of the space in new factories as self-employed persons, then renting semidetached or detached factory space and finally moving into plants owned by their own companies. It was fairly easy to go into business for oneself because rental factories and installment purchases of machinery were available on the funding side and subcontracting work from one's former employer as well as orders obtained through one's network of associates were available on the order side (Watanabe, 1979, 1997).

Alternatively, in the tool and die industry in the Higashi Osaka area, since demand for dies is concentrated on the times when user firms develop and introduce new products and most tool and die firms are positioned upstream in the supply chain, demand fluctuations are sizable. As a result, it is said that (i) when economic conditions were poor, the parent company would encourage employees to go independent and start their own firms by presenting them with used machine tools lieu of

severance pay in order to eliminate or reduce fixed costs and then assist these former employees by means such as sending some of their work to them or introducing customers, and (ii) when economic conditions improved, the parent company would outsource subcontracting work to these newly independent firms (Kato, 2006).

In this way, the presence within industrial districts of local markets for special skills can be said to be the consensus opinion of Japanese industrial district theory. To small and medium-sized manufacturers in industrial districts, this is a required condition for economies of agglomeration.

4. Overlooked purchaser-side logic: business practices in Japan

4.1. Awareness of the issues involved

In the preceding section, we pointed out that the ability to receive orders for work that fluctuates quantitatively and qualitatively, by using local markets for special skills, has been surveyed and researched in Japanese industrial district theory. However, there is a substantial difference in meaning between the ability to receive orders and actually receiving such orders. This is because in order actually to receive an order, the purchaser must actually place an order. Since its surveys and research have targeted the small and medium-sized enterprises in industrial districts—that is, the supplier side—very little research in Japanese industrial district theory has discussed the other side of the equation: logic and economies on the purchaser side. To begin with, the kinds of conditions under which local markets for special skills are maintained also have not been elucidated[2].

An exception is the research by Yoshida (2002) looking at *kouza*, which express the relationships between purchasers and suppliers in industrial districts. Holding a *kouza* means that a firm has formally registered with and been approved by a large enterprise as a supplier and trades with the large enterprise directly. Seeing *kouza*-holding firms as the organizations that organize and coordinate division of labor in the relatively horizontal division of labor in Ota Ward, Yoshida (2002) focused on the concept of *kouza* as a means of clarifying the divisions of labor within industrial districts[3]. For this reason, although he focused on the concept of *kouza*, it can be said that Yoshida did not address the logic of purchasers, who open these *kouza*.

4.2. Research settings

Accordingly, in this survey we conducted interviews as outlined below, to fill in these blanks in

[2] Theoretical research is more advanced outside Japan. For example, Krugman (1991) attempts to clarify the mechanisms for maintaining local markets for special skills by modeling interdependence between laborers and firms.

[3] Originally, with the exception of Yoshida (2002) research did not attempt to confirm whether companies hold *kouza*. Within the scope of our study, as a business practice in Japan large manufacturers and large distributors do not designate companies other than *kouza*-holding firms as *chouai-saki*, and as such the holding of *kouza* may be considered a tacit requirement. In fact, similar concepts have been asserted repeatedly in Japanese industrial district theory since Sumiya (1971), who focused on the functions of wholesalers in Tokyo's Joto area. These have been referred to by various names, including "system organizers" (Yamazaki, 1977), *chukakugata* ("core firms") (Watanabe, 1997), *juyo hannyu kigyo* ("demand-input firms") (Itami, 1998), and "linkage firms" (Takaoka, 1998). Yoshida (2002) confirmed that *kouza*-holding firms corresponded to the "core firms" cited by Watanabe (1997) and that *kouza*-holding firms based on the volume of work subcontracted per company fulfilled the role of Itami's "demand-input firms."

Japanese industrial district theory.

(1) Over the period November 2006 to April 2007, we interviewed 21 small firms located in Tokyo's Ota Ward and Joto area, asking them about their transaction relationships and *kouza*. We interviewed management of or persons in corresponding positions in each company, from one to three times each. Most of these firms were small firms in the machine and metal industries, while some belonged to the chemical industry or light industries. In terms of size, seven of the interviewed firms had from one to nine employees, 11 had from 10 to 49 employees, two had from 50 to 99 employees, and one had 100 or more employees. Most of these were *kouza*-holding firms having *kouza* with large enterprises.
(2) We also interviewed the person formerly responsible for the order management system and the person responsible for planning of locally produced products in a large retailer. We interviewed the person formerly responsible for the order management system for approximately two hours and interviewed both these persons together for approximately two hours as well. We asked them primarily about relations with suppliers and about *kouza*.

4.3. Fact findings

The results of these interviews made it clear that by nature large manufacturers and distributors in Japan employ the business practice of dealing directly only with suppliers and subcontractors that have *kouza* or numbers (i.e., *kouza*-holding firms), and furthermore that the extent of this business practice is as outlined below:

1 First, when supplier and subcontractor firms are formally authorized by large enterprises as trading partners, they are registered and assigned supplier numbers. These are *kouza*.
2 These *kouza* numbers were intended originally for use in identifying suppliers when issuing various forms such as order forms and statements of delivery.
3 However, in actual practice the presence of a *kouza* has come to signify credit. That is, even small firms can borrow operating funds from financial institutions by showing them order forms with *kouza* numbers issued by large manufacturers or large distributors.
4 Since these *kouza* have come to have credit implications, the large enterprises that issue them have also come to carry out (a) comprehensive examination of firms prior to issuing *kouza*, instead of focusing solely on relevant products and transaction details, and (b) strict subsequent examination, for example closing *kouza* in the event of problems with deliver times or failure rates.
5 In some cases, this evolution has progressed further into the business practice known as *chouai*. In this business practice, an enterprise dealing with a large number of small firms will designate one *kouza*-holding firm as the *chouai-saki*, charged with coordinating and serving as a liaison with other small firms (with only one order form issued, to the *chouai-saki*) and managing delivery times and quality control, in return for commissions of several percentage points.

The business practice whereby large enterprises on the purchaser side deal only with *kouza*-holding firms is employed to enable risk avoidance by dealing directly with such

kouza-holding firms that have passed strict examination both before and after being granted *kouza* and that can provide guarantees on their transactions. Also, by designating as a *chouai-saki* a *kouza*-holding firm that can provide a guarantee on the transaction, a large enterprise will seek to avoid risk even in a case in which an order cannot be handled by *kouza*-holding firms alone. In addition, dealing with a *chouai-saki* alone in a case that ordinarily would involve dealing with a number of small and medium-sized enterprises provides benefits in reduced administrative costs and improved efficiency.

4.4. Purchaser-side logic

Taking this business practice on the purchaser side into consideration shows that the following mutual relationships may exist between firms inside and outside industrial districts.

First, for many individuals and small firms the process of examination for opening a *kouza* is itself very difficult. For this reason, skilled laborers and small firms can receive orders for work from large enterprises only via *kouza*-holding firms that already have *kouza* or numbers as supplier. As a result, an initial requirement for securing work is a relationship with a *kouza*-holding firm.

Next, a large enterprise on the purchaser side needs to organize the trading partners with flexibility in accordance with the needs of each order because their orders vary both quantitatively and qualitatively. However, it is difficult under this business practice. On this point, if a *kouza*-holding firm is located inside the industrial district, the purchaser can reduce the costs associated with distribution, administration, and production for such orders that vary quantitatively and qualitatively by using such a *kouza*-holding firm as a *chouai-saki*. This is because when a *kouza*-holding firm serves as a *chouai-saki* it assumes (i) distribution functions such as purchase, sale, replenishment, and distribution of products completed within the industrial district, (ii) production control functions with regard to subcontractor firms within the industrial district, such as designation of designs, quantities, and delivery times and providing technical assistance, and (iii) some production functions such as assembly, processing, fitting, and packing.

Furthermore, *kouza*-holding firms serving in the role of linking large enterprises with small firms within the industrial district face the risk of losing their *kouza* if they fail to pay close attention to delivery times and failure rates at all times. For this reason, when accepting an order large enough to involve concerns about meeting delivery times such firms will, as noted above, hire skilled labor from outside the company as immediate reinforcements or subcontract work to small firms (Watanabe, 1997). Whatever the case, due to the need to manage delivery times and failure rates such firms will, in general, choose neighboring companies and plants since they are easier to manage.

In such cases, the *kouza*-holding firms serving in the role of linking large enterprises with small firms within the industrial district themselves benefit from being able to secure relatively stable orders. Originally, it is difficult for small firms such as those making up industrial districts to secure orders. What's more, due to their small size such firms are affected strongly by fluctuations in demand, which can become a factor affecting such companies' continued existence. To such small enterprises, holding a *kouza*—that is, the existence of a continuous transaction relationship with a large enterprise instead of conducting only spot transactions—is highly significant for purposes of business stability. Furthermore, Yoshida (2002) points out the following four points as additional

benefits available to *kouza*-holding firms: 1) the high likelihood of being able to receive orders from large enterprises not limited to existing transactions, 2) the ability to carry out sales activities with easier access to large enterprises, 3) the ability to gain the trust of other small and medium-sized enterprises in the area, and 4) the ability to familiarize themselves with various management methods in areas such as document preparation and quality control. All if these can be considered beneficial to securing orders.

Japanese industrial district theory has looked only at the presence or absence of ordering relationships and distribution of labor within industrial districts, without directly addressing these Japanese business practices of *kouza* and *chouai* (Takaoka, 1998). For this reason, it has left largely untouched the issues of why and how firms in industrial districts receive demand from outside these districts. In addition, even when focusing on the existence of firms serving as points of contact between firms inside and outside industrial districts, it has not discussed sufficiently the mutual relationships between and roles played by firms inside and outside industrial districts. However, a look at business practices involving *kouza*-holding firms and *chouai-saki* makes it possible to summarize these matters as outlined below.

(1) By using *kouza*-holding firms and *chouai-saki* that will provide guarantees for transactions, large manufacturers and large distributors on the purchaser side can derive the following benefits: 1) they can avoid transaction risks, and 2) they do not need to cover directly costs related to processes such as distribution, administration, and production.
(2) Small and medium-sized enterprises on the supplier side can derive the benefits of having the *kouza*-holding firms and *chouai-saki* assume the difficulties of the level of credit required and of responding to fluctuations in demand and managing delivery times when dealing with large manufacturers and large distributors on the purchaser side.
(3) The *kouza*-holding firms serving to link large enterprises on the purchaser side with small and medium-sized enterprises on the supplier side can derive the benefits of being able to secure relatively stable orders by holding *kouza* with such large enterprises.

5. Conclusions

5.1. An integrated model of support for economies of agglomeration

In this paper, after first proposing that the point of dispute in research into industrial districts is found in elucidation of the mechanisms of maintenance and development of economies of agglomeration, we have discussed supplier-side logic abstracted and generalized from Japanese industrial district theory and purchaser-side logic from an independent survey conducted for the purposes of this paper. Although it may be advisable to avoid too easy generalization from our results due to the limited subjects of the survey reported on in this paper, in conclusion we would like to propose a new model of industrial districts through combination of supplier-side and purchaser-side logic.

A look at the business practices pointed out in the preceding section shows the need to analyze industrial districts by differentiating the following three actors: 1) first- and second-tier enterprises that place orders with firms in industrial districts, 2) *kouza*-holding firms that act as liaisons, and 3)

small firms that receive orders from *kouza*-holding firms (see Fig. 2)[4]. Of these, it is thought that industrial districts consist primarily of firms in categories 2 (*kouza*-holding firms) and 3 (small firms). On this point, it must be noted that since *kouza*-holding firms vary by purchaser, a firm belonging to category 2 (*kouza*-holding firms) in one case may belong to category 3 (small firms serving as subcontractors) in another, and vice-versa.

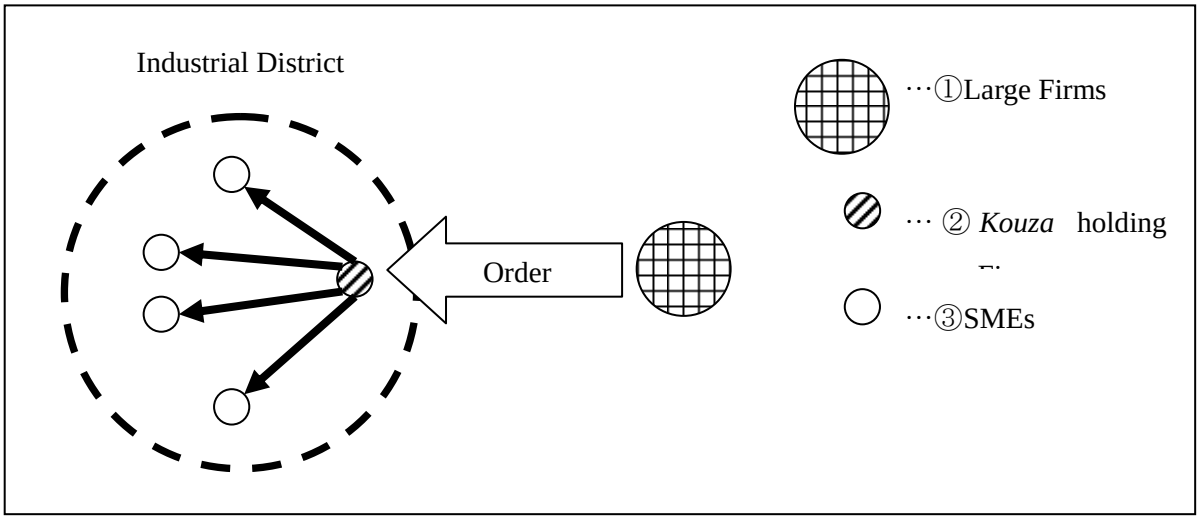

Figure 2: Three primary actors in industrial districts

Japanese industrial district theory has studied the logic of economies of agglomeration from the supplier side. Costs place limits on the ability of individual firms to reorganize production facilities flexibly in response to demand that fluctuates quantitatively and qualitatively. However, location inside an industrial district makes it possible for a firm to respond to fluctuating demand by using local markets for special skills. In short:

Required condition from the supplier side: Local markets for special skills must be present within the industrial district.

This paper has elucidated the logic of economies of agglomeration from the purchaser side to some extent. Large manufacturers and large retailers on the purchaser side employ the business practice of dealing directly only with *kouza*-holding firms[5]. At the same time, while the ability to restructure transactions flexibly is a requirement of placing orders that fluctuate quantitatively and

[4] Fig. 2 depicts a simplified labor-distribution structure in an industrial district. In actual transactions, small firms receiving subcontracting orders from *kouza*-holding firms may also subcontract operations to other firms.

[5] It is highly likely that this business practice will continue to persist in the future as well. This is because ISO certification has come to be taken into consideration by large enterprises in choosing direct trading partners. In fact, according to the survey covered in this paper since it is unlikely even in areas such as Ota Ward that small firms would have appointed the specialized environmental managers required under ISO 14000, large enterprises have adopted the makeshift approach of dealing directly with suppliers that have attained ISO certification, and the tendency toward requiring of firms serving as liaisons administrative efforts such as document control as one part of governance activities is strengthening.

qualitatively, doing so is difficult under this business practice. On this point, if a *kouza*-holding firm is located within an industrial district it is possible to place orders for such fluctuating orders by designating the *kouza*-holding firm as a *chouai-saki* and dealing through it. In short:

Required condition from the purchaser side: A *kouza*-holding firm must be present within the industrial district.

Furthermore, the following mutually reinforcing relationships exist between these two requirements on the supplier side and on the purchaser side:

(a) Since the presence of local markets for special skills in the vicinity makes it possible to accept orders from purchasers and maintain *kouza* even for large orders relative to their own capabilities, *kouza*-holding firms will locate in areas with such local markets for special skills.

(b) Since subcontractors can secure stable orders in the vicinity of *kouza*-holding firms, even if in small quantities, local markets for special skills will form around *kouza*-holding firms.

Put another way, the presence of local markets for special skills encourages *kouza*-holding firms to locate in the area, and the location of *kouza*-holding firms in the area encourages the formation of local markets for special skills (see Fig. 3). Based on this mutually reinforcing mechanism, economies of agglomeration appear, maintaining and promoting the industrial district. By looking at the purchaser side instead of just the supplier side alone, as has been conducted in traditional Japanese industrial district theory, we have been able for the first time to complete the mechanism of economies of agglomeration in industrial districts.

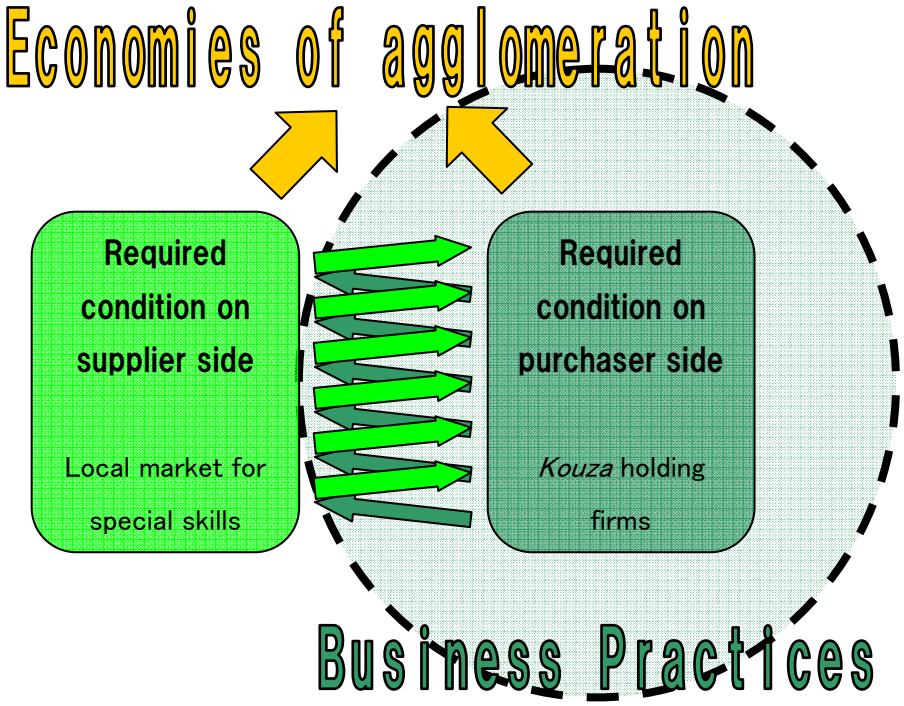

Figure 3: Required conditions of economies of agglomeration

5.2. Implications for regional development policies

Understanding such business practices we reveal, we can design more efficient policies for regional economies and small and medium-sized enterprises. Recent years, policies for regional economies have been designed and implemented at local government level to national level (e.g. Industrial Cluster Project has been implemented in Japan since 2001). They aim to encourage small and medium-sized enterprises in certain areas. However, most of them seem to be ineffective: These policies succeed only in bringing small orders to industrial districts, and they cannot bring big orders from large manufactures and distributors. Assuming the business practices we reveal, firms, and thus industrial districts, can receive orders from large companies only via kouza-holdings firms. Hence, policy-makers have to take such business practices into consideration to bring big orders which are necessary to encourage regional economies and small and medium-sized enterprises.

5.3. Toward future research

Since the subject of the survey described in this paper is limited, research with a broader subject matter should be needed in the future. We would like to conclude this paper by proposing three issues that should be verified in such research.

The model proposed above has the following two characteristics: (i) purchasers and *kouza*-holding firms are individual actors, and (ii) moreover, *kouza*-holding firms are determined individually for (i.e., vary by) each purchaser. In fact, this also could explain the primary characteristics and phenomena of industrial districts as pointed out in Japanese industrial district theory: confrere trading, the structure of the social division of labor like a mountain chain, and

location of purchasers outside industrial districts. This model should be used to make clear the conditions for formation of these characteristics and phenomena in greater detail.

Confrere trading: If orders received from individual purchasers are unstable and not in sufficient quantity, transaction relations between *kouza*-holding firms will switch with each order, since work accommodations will be made for each order. For this reason, confrere trading (Watanabe, 1997), in which orders are placed in both directions between small firms in the same industry, takes place (see Fig. 4). This phenomenon has been pointed out frequently in Japanese industrial district theory. For example, in Ota Ward, against the background of the existence of other firms within the same area, *kouza*-holding firms can accept orders they could not handle alone (Yoshida, 2002). In the case of tool-and-die manufacturers, when industry-wide production capacity cannot increase quickly enough in times of rapid growth in demand or in order to avoid the risks involved in facilities expansion, the phenomenon is apparent of manufacturers mutually accommodating excess orders received by outsourcing some work to other tool-and-die manufacturers for specific processing only (Saito, 1994).

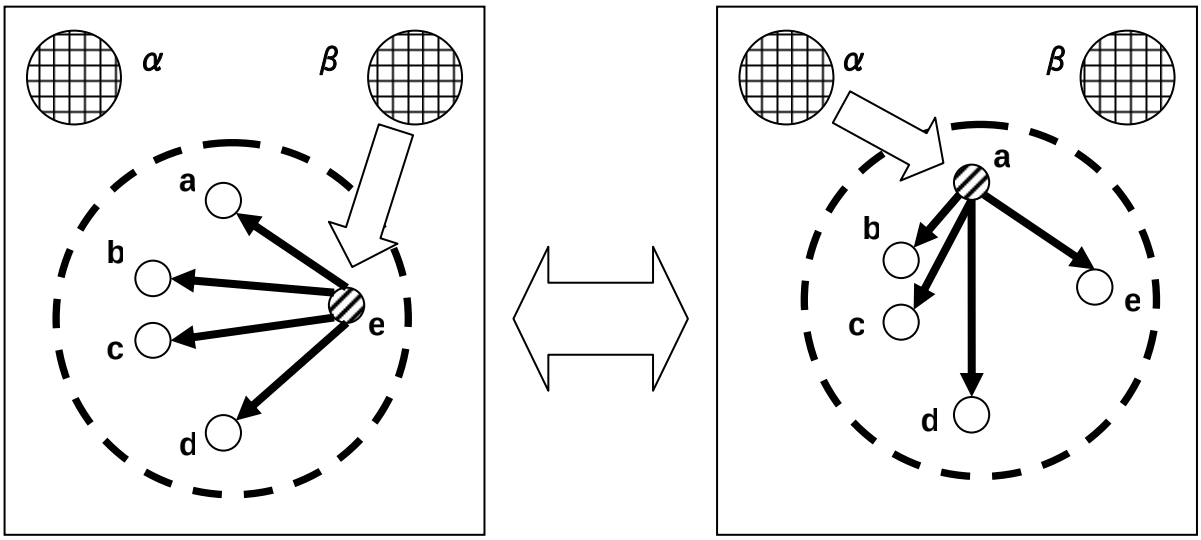

Figure 4: Confrere-trading structure: When the purchaser changes, the directions of transactions between firms in the industrial district change as well. (Firms shown in the same positions in the diagrams at left and right represent identical firms.)

Structure of social division of labor like a mountain chain: When two or more purchasers place relatively stable orders in sufficient quantity, a structure similar to the structure of social division of labor like a mountain chain (Watanabe, 1997)[6] will emerge in industrial districts.

[6] The structure of social division of labor like a mountain chain is a concept proposed by Watanabe (1985, 1997) to describe the structure of division of labor in the Japanese machine industry. Watanabe (1985, 1997) depicts the concept of the structure of social division of labor like a mountain chain in a graph with company size on the vertical axis and market extent in the machine industry on the horizontal axis. Although the

However, since in general firms can choose locations irrespective of existing industrial districts for stable business in large quantities (Watanabe, 1997), this structure is not unique to industrial districts.

Location of purchasers outside industrial districts: When considered from the perspective of industrial district mechanisms, purchasers need to be confined to locations within the industrial district when information stickiness as proposed by von Hippel (1994) is high. When a *kouza*-holding firm fulfills distribution, production control, and production functions targeted at outside subcontractors in lieu of the purchaser, information stickiness weakens and the purchaser itself can be located outside the industrial district. To summarize, even if the location in the area of the large manufacturer serving as the purchaser is the initial impetus for formation of the industrial district (Seki and Kato, 1990; Itami, 1998), it is not a requirement for the functioning and continued existence of the industrial district. Although at a minimum the location of *kouza*-holding firms and subcontractors within the industrial district is a requirement, large enterprises such as manufacturers, retailers, and trading companies serving as purchasers can be located either inside or outside the industrial district.

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structure of social division of labor like a mountain chain itself is a concept covering the Japanese machine industry as a whole, it is thought that similar structures can be seen in industrial districts in other industrial fields as well.

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