

A New Model of Japanese Industrial Districts Combining Supplier-Side and Purchaser-Side Logic

Nobuyuki INAMIZU

Manufacturing Management Research Center

Faculty of Economics, the University of Tokyo

E-mail: noboo@nona.dti.ne.jp

Takahisa WAKABAYASHI

Graduate School of Economics, the University of Tokyo

E-mail: taka17@deluxe.ocn.ne.jp

Abstract: This paper proposes to combine supplier-side and purchaser-side logic in a new model of Japanese industrial districts. We interviewed large retail firms that were purchasers for industrial districts and 21 small-scale firms located in Tokyo's Ota Ward and Joto area that were the suppliers. Our interviews clearly highlighted the importance of business practices called "Kouza" and "Chouai." Large enterprises on the purchaser side deal only with kouza-holding firms (direct suppliers) and chouai-saki, which coordinate sub-suppliers. The assumption of such business practices implies that firms holding kouza within the industrial district are a necessity for purchasers to enjoy economies of agglomeration.

Keywords: economies of agglomeration, local markets for special skills, kouza

1. Introduction

There are two strains of theory that explain industrial districts: the Weber strain uses location theory to explain the mechanisms behind the formation of

industrial districts, and the Marshall strain uses small-business theory to explain the mechanisms behind the functioning and continued existence of industrial districts (Inamizu, Wakabayashi & Takahashi, 2007; Matsubara, 1999; Sumiya, 1971;

Inamizu and Wakabashi

Yamamoto, 2005). To explain the formation of industrial districts, Weber clearly differentiated 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 they had lost their geographical advantages. In other words, a disputed point in industrial district research is the 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 resulted in notable research on the history of the so-called local industries. Thus, Japanese industrial district theory has not clarified this distinction between geographical economies and economies of agglomeration. In addition, much research covers individual cases and does not adequately discuss the degree to which such cases may be generally applied.

Following the method of Inamizu et al. (2007), we first summarize the mechanisms behind the economies of agglomeration that are cited most commonly in Japanese industrial district theory. We point out Japanese industrial district theory repeatedly stresses that local markets for special skills must exist within the industrial district if small-scale manufacturers (suppliers) are to enjoy economies of agglomeration. Such a position clarifies that Japanese industrial district theory has

shown little regard not only for generalizations from individual cases and the theoretical development consequent thereon but also for the relevance of purchasers' logic.

In order to clarify purchasers' logic, we interviewed large retail firms serving as purchasers for industrial districts and 21 small-scale firms serving as suppliers in Tokyo's Ota Ward and Joto area, since Inamizu et al. (2007) had reviewed the existing studies and pointed out the problem noted above. Our interviews clearly showed that it was the business practice of large manufacturers and distributors to deal only with suppliers and subcontractors having *kouza* as suppliers, and that the presence of such *kouza* has come to signify the trustworthiness of the suppliers. As a result, such firms place strict demands on suppliers and subcontractors, such as (a) examining the latter firms when they open *kouza*, and (b) terminating the *kouza* when problems arise due to late deliveries or frequent failure of merchandise. Furthermore, there is clear evidence of the business practice known as *chouai*, in which one of these firms holding *kouza* is designated the *chouai-saki*, and charged with coordinating and liaising with other small-scale suppliers to manage production and delivery times; in return, the *chouai-saki* receives a sizable commission. Thus, for purchasers, the presence within the industrial district of firms holding *kouza* becomes a necessary condition of enjoying economies of agglomeration.

In addition, a mutually reinforcing relationship exists between the following two

A new model of Japanese industrial districts

required conditions: (a) Since the presence of local markets for special skills makes it possible for *kouza*-holding firms to accept relatively larger purchasers' orders in comparison to their own capabilities and yet maintain their *kouza*, these 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 examining the purchaser-side logic instead of merely the supplier side as done in the past Japanese industrial district research, we will elucidate the complete mechanism behind economies of agglomeration in industrial districts for the first time.

Furthermore, (i) purchasers and *kouza*-holding firms are separate organizations and (ii) *kouza*-holding firms are chosen individually by each purchaser (i.e., such firms differ by purchaser). Thus, this model can explain the following important 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 akin to 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, let us examine the two strains of industrial district theory.¹ In particular, let us clarify the disputed points in industrial district research by revisiting the classical 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 that firms' locations were decided first to minimize transportation costs, Weber proposed economies in expenses as well as economies in labor costs as factors contributing to deviations from the consideration of minimized transportation costs. Then, he developed and studied models of how industrial agglomeration developed because 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), which arise from agglomeration itself (pure agglomeration). While the former economies originally are specific to certain geographical areas, the latter economies of agglomeration are not; this is

¹ See Inamizu et al. (2007) for details of the following literature review.

Inamizu and Wakabashi

because they can arise wherever agglomeration occurs (Aoki, 1960). In other words, these can be considered as 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, Marshall enumerated a wide range of geographical factors and proposed that numerous fortuities could affect such localization. He thus chose to focus on the surprising persistence of industries for which localization had already occurred. 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 of localization: (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 between simple geographical economies and economies of agglomeration.

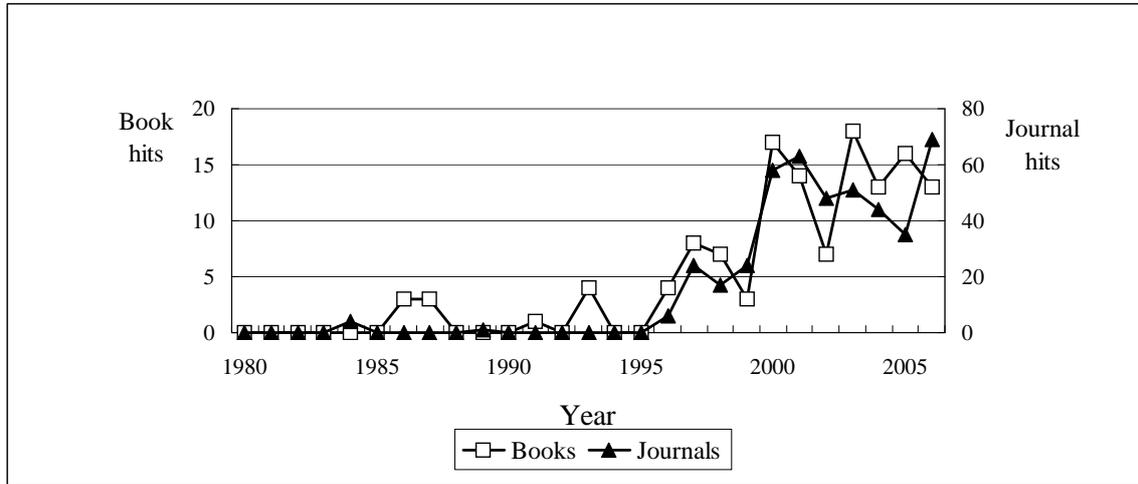
Unlike Weber, Marshall differentiates between

internal economies (economies gained from growth in the size of a single company) and 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 between 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. In contrast, it is believed 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 implies that the economies of agglomeration (external economies) proposed by Marshall will not necessarily be enjoyed by firms whose agglomeration occurs due to geographical advantages. In fact, according to Saxenian (1994), whose research compared Route 128 with Silicon Valley, the regional industrial structure of Silicon Valley is based on the local community and on professional and information networks, into which were built human networks that surpassed the Valley’s frameworks of company and

A new model of Japanese industrial districts

Figure 1. Results of searching “sangyo shuseki” (industrial district)



function and formed a culture of innovation. On the other hand, Route 128 has the regional industrial structure of a collection of vertically integrated firms, among which there are almost no apparent relations of mutual dependency, either social or work-related. 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 witness the formation of an industrial district, local markets for special skills did not form, and neither did a culture of technological innovation develop there.

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

- (1) There is a need to analyze economies of agglomeration as distinct from geographical economies.
- (2) Since internal economies cannot attract other

firms to their vicinity, the focus of the analysis should be on external economies that can attract.

- (3) Since existing industrial districts 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 point out 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.

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; Porter, 1998). In Japan in particular, as shown in Fig. 1 even when accounting for biases of search systems,² 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 transferring technology from universities to regional industrial clusters (e.g., Ishikura, Fujita, Maeda, Kanai, & Yamazaki, 2003).

This timing may have led to research in Japanese industrial district theory being focused on the Jonan district of Tokyo (Seki & Kato, 1990; Watanabe, 1998; Whittaker, 1997) and the Higashi Osaka district (Ueda, 2000, 2004a, 2004b). These districts can be seen as leading examples of urban industrial districts in Japan. Research on Okatani in Nagano Prefecture, which features an agglomeration of the precision machinery industry (Seki, Tsujita, 2001) and on Tsubame in Niigata Prefecture, a leading example of a rural industrial district (Iga, 2000; Seki, Fukuda,

1998), frequently covers the history and current circumstances of such districts in detail from the perspective of small and medium-sized enterprises. Therefore, 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 lean toward coverage of localities.

However, it is not 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 in the long term. They are (1) lack of economies of scale, (2) technical divisibility of production processes, (3) availability of low-cost labor, (4) a social division of labor 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)

² Total number of hits per year generated by the term. The authors conducted 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 on April 21, 2007. Care is required concerning the general bibliographic search because the number of journals indexed has undergone substantial changes. While 3100 journals were indexed in June 1996, today the number has risen to 9891. In addition, the term *sangyo shuseki* was almost never used until the 1970s.

A new model of Japanese industrial districts

massive increase in the benefits of locating in a locality as the external economy's advantages increase during the development of local industries, and (7) adaptability and elasticity of the social division of labor that influence 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 on which there is consensus in Japanese industrial district theory, bearing in mind 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 that are 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 in Japanese industrial district theory: Supplier-side logic

Relatively low levels of unstable demand (i.e.,

volume of orders received that fluctuates constantly under factors such as economic and seasonal variations) have enabled firms located within industrial districts to enjoy economies of agglomeration (Watanabe, 1997). When demand fluctuates quantitatively and qualitatively, arrangement of production equipment must flexibly allow for such changes, but from a cost perspective, the extent to which a single firm can respond to such changes is naturally limited. However, it is believed that a firm located within an industrial district can secure subcontractors, organize, and manage the production and processes of such subcontractors, bearing in mind the 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 jobs that a company cannot handle on its own, the company can procure the skilled labor it needs from local markets for special skills, enabling it to accept orders with confidence that it can meet delivery schedules and fulfill quality expectations. 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 times, firms sometimes hire skilled laborers from outside as immediate reinforcements or they may subcontract work to small firms (Watanabe, 1997). In Ota Ward, thanks to the large numbers of confreres located nearby, firms can accept orders for

jobs in which their own capabilities are weak or that 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, the 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 this system, they receive a fixed percentage of labor charges for orders received. Usually, they start out by renting some of the space in new factories as self-employed persons, then move to renting semidetached or detached factory space and, finally, move 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 and subcontracting work from one's former employer as well as orders obtained through one's network of associates were also readily available (Watanabe, 1979, 1997).

Alternatively, in the tool and die industry in the

Higashi Osaka area, since demand for dies is heaviest 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, the parent company took one of the following two steps depending on the conditions: (i) when economic conditions were poor, the parent company would encourage employees to become independent and start their own firms by presenting them with used machine tools in lieu of severance payment, which served to eliminate or reduce fixed costs. They would then assist these former employees by means such as sending some of their work to them or introducing customers; (ii) when economic conditions improved, the parent company would outsource subcontracting work to these newly independent firms (Kato, 2006).

There is therefore consensus in Japanese industrial district theory about the presence within industrial districts of local markets for special skills. For 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

Based on Inamizu et al. (2007), 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

A new model of Japanese industrial districts

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 elucidated³.

An exception is the research by Yoshida (2002) into *kouza*, which expresses 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 ones 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 districts⁴. 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. Survey subjects and examination methods

Accordingly, in this survey we conducted interviews as outlined below, to address the problem pointed out by Inamizu et al. (2007).

(1) Over the period November 2006–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 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 a person formerly responsible for the administrative system and the person responsible for planning of locally produced

³) 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.

⁴) Originally, with the exception of Yoshida (2002) research did not attempt to confirm whether companies hold *kouza*. Within the scope of our study, 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.”

Inamizu and Wakabashi

products in a large retailer. We interviewed the person formerly responsible for the administrative system for approximately two hours and interviewed both persons together for approximately two hours as well. We asked them primarily about transaction 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 failure to meet delivery times or expected quality.

- (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 with managing delivery times and quality control, in return for a sizable commission.

The business practice whereby large enterprises on the purchaser side deal only with *kouza*-holding firms reduces risk for the company since it is dealing directly with *kouza*-holding firms that have passed strict examinations 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

A new model of Japanese industrial districts

efficiency.

4.4. Purchaser-side logic

This business practice on the purchaser side implies 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 supplier *kouza* or numbers. As a result, an initial requirement for securing work is a relationship with a *kouza*-holding firm.

Next, although a large enterprise on the purchaser side needs to be flexible in organizing the trading partners it uses in accordance with the needs of each job, as it will order work that varies both quantitatively and qualitatively, being such is difficult under this business practice. On this point, when a *kouza*-holding firm is located inside the industrial district the purchaser can reduce the costs associated with distribution, administration, and production for such work that varies quantitatively and qualitatively by its use of 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 quality defects at all times. For this reason, when accepting an order large enough to excite 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 the possibility of defective work, such firms will, in general, choose neighboring companies and plants since they are easier to manage.

In such cases, the *kouza*-holding firms that fill the role of linking large enterprises with small firms within the industrial district benefit as well 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. Furthermore, due to their small size such firms are strongly affected 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 of these can be considered conducive to securing orders.

Japanese industrial district theory has looked only at the presence or absence of ordering relationships and the 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 business orders from outside these districts. In addition, even when focusing on the existence of firms that serve as points of contact between firms inside and outside industrial districts, the theory 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 provide guarantees for transactions, large manufacturers and large distributors on the purchaser side may derive the following benefits: (a)

they can avoid transaction risks, and (b) 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 that 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.

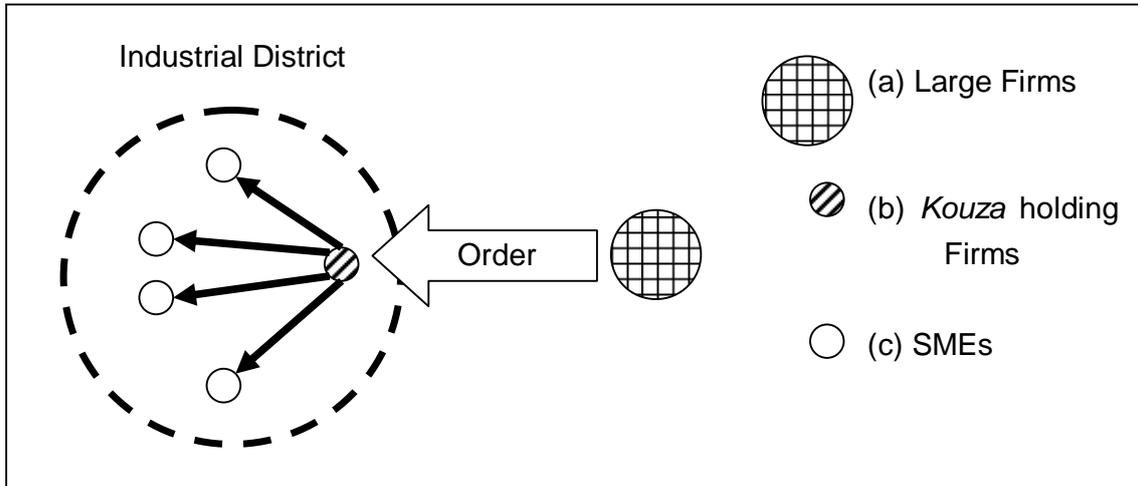
5. Conclusions

5.1. An integrated model of support for economies of agglomeration

Based on Inamizu et al. (2007), we have proposed that the point of dispute in research into industrial districts rests in elucidation of the mechanisms of maintenance and development of economies of agglomeration. We have also discussed supplier-side logic abstracted and generalized from Japanese industrial district theory. Further, we conducted an independent survey to clarify purchaser-side logic, which the existing research has not adequately examined. Although, because of the limited subjects of the survey reported on in this paper, it may be advisable to avoid too easy generalizations from our

A new model of Japanese industrial districts

Figure 2. Three primary actors in industrial district



results, we would like to conclude by proposing a new model of industrial districts through a 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 between 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 Figure 2).⁵ 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.

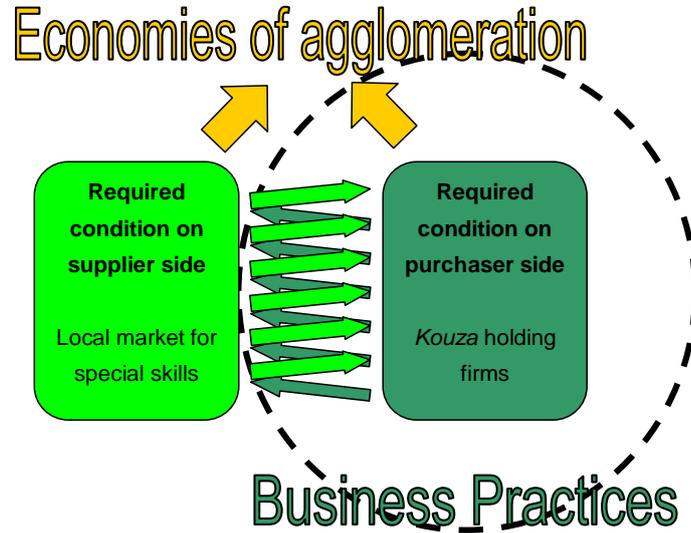
Japanese industrial district theory has studied the logic of economies of agglomeration from the supplier side. Costs restrict the ability of individual firms to reorganize production facilities flexibly in response to demand that fluctuates quantitatively and qualitatively. However, location inside 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 can be said to have elucidated somewhat the logic of economies of agglomeration from the purchaser side. Large manufacturers and

⁵ Figure 2 depicts a simplified labor-distribution structure in an industrial district. In actual transactions, small firms receiving subcontracting orders from *kouza*-holding firms also frequently subcontract operations to other firms themselves.

Figure 3. Required conditions of economies of agglomeration



large retailers on the purchaser side employ the business practice of dealing directly only with *kouza*-holding firms.⁶ At the same time, while the ability to restructure transactions flexibly is a requirement of placing orders that fluctuate quantitatively and 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 jobs by designating the *kouza*-holding firm as a *chouai-saki* and dealing through it. In short:

⁶ It is highly likely that this business practice will continue to persist in the future as well. This is because ISO certification is now 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 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. Further, they require that firms serving as liaisons employ administrative efforts such as document control, as part of their strengthening of governance activities.

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 requirements on the supplier and purchaser sides:

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

(b) Since subcontractors located near *kouza*-holding firms can secure stable work, even if in small quantities, local markets for special skills will form in such areas.

Put another way, the presence of local markets for special skills encourages *kouza*-holding firms to

A new model of Japanese industrial districts

locate in an area, and the location of *kouza*-holding firms in an area encourages the formation of local markets for special skills (see Figure 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 done 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.

5.2. Toward future research

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

The model proposed above has the following two characteristics: (i) purchasers and *kouza*-holding firms are individual actors, and (ii) *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 akin to a mountain chain, and location of purchasers outside industrial districts. This model should be used to further clarify the conditions for formation of these characteristics and of the phenomena noted.

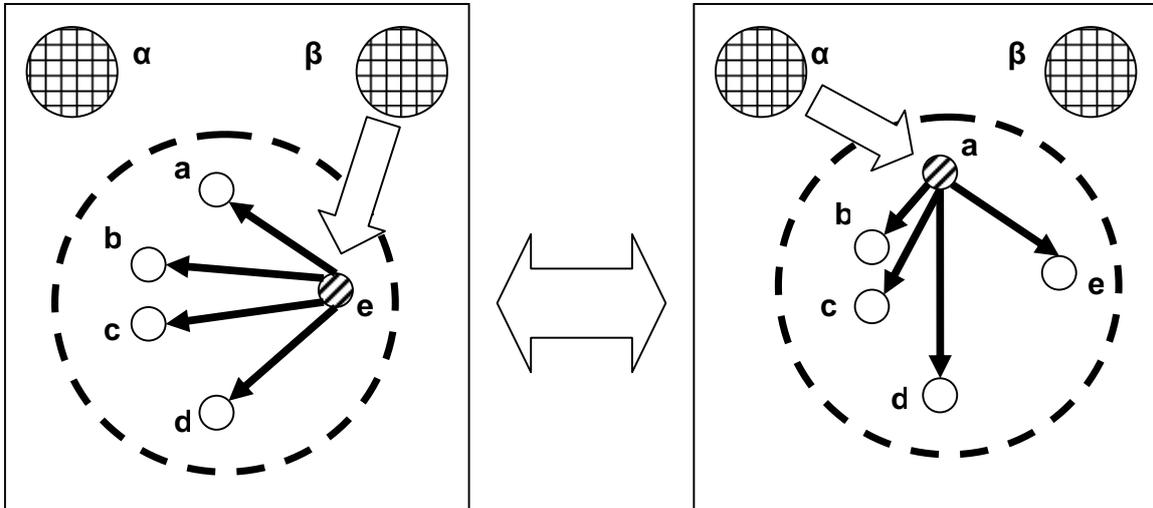
Confrere trading: If orders received from

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 Figure 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 for work 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 demand growth or in order to avoid the risks involved in facilities expansion, manufacturers mutually accommodate excess orders received by outsourcing some work to other tool-and-die manufacturers for specific processing only (Saito, 1994).

Structure of social division of labor akin to a mountain chain: When one or more purchasers placing relatively stable orders in sufficient quantity is present, a structure similar to the structure of social division of labor like a mountain chain (Watanabe, 1997)⁷ will be

⁷ 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 as a mountain chain on a graph, with company size on the vertical axis and market capacity in the machine industry on the horizontal axis. Although likening the structure of the social division of labor to a

Figure 4. Confrere-trading structure



Note: 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.)

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

Location of purchasers outside industrial districts: 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 strong. 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 for the operations of the large manufacturer serving as the purchaser is the initial impetus for formation of the industrial district (Itami, 1998; Seki & Kato, 1990), 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.

References

- Aoki, T. (1960). *Kougyou shuuseki rieki ni tsuite: Keizai chiri gaku teki kenkyuu* [The economies of industrial agglomeration: A study on economic and geographical theories]. *Keizai Gaku Kenkyuu*, 4,

mountain chain is itself a concept that covers 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.

A new model of Japanese industrial districts

- 259–321. (In Japanese)
- Fujikawa, S. (1999). Gendai shihon shugi ni okeru kuukan shuuseki ni kannsuru ichi kousatsu [A study of spatial agglomeration in modern capitalism]. *Keizai Chiri Gaku Nenpou*, 45(1), 21–39. (In Japanese)
- Hoover, E. M. (1937). *Location theory and the shoe and leather industries*. Cambridge: Harvard University Press.
- Iga, M. (2000). *Sanchi no shakai gaku* [Sociology of local industries]. Tokyo: Taga Shuppan. (In Japanese)
- Inamizu, N., Wakabayashi, T., & Takahashi, N. (2007). Sanagyou shuuseki ron to “nihon no sangyau shuuseki” ron [Industrial district theories and “Japanese industrial district” studies]. *Akamon Management Review*, 6(9), 381–412. (In Japanese)
- Isard, W. (1956). *Location and space-economy: A general theory relating to industrial location, market areas, land use, trade, and urban structure*. New York: Wiley.
- Ishikura, Y., Fujita, M., Maeda, A., Kanai, K., & Yamazaki, A. (2003). *Nihon no sanngyau kurasutaa* [Strategy for cluster initiatives in Japan]. Tokyo: Yuhikaku. (In Japanese)
- Itami, H. (1998). Sangyau shuuseki no igi to ronri [Meanings and logics of industrial districts]. In H. Itami, S. Matsushima, & T. Kikkawa (Eds.), *Sangyau shuuseki no honshitsu: Juunan na bungyau shuuseki no jouken* [The nature of industrial districts: Flexible specialization and conditions of agglomeration] (pp. 1–23). Tokyo: Yuhikaku. (In Japanese)
- Ito, H. (1970). *Weebaa kougyou ricchi ron nyuumon* [An introduction to Weber’s theory of industrial location]. Tokyo: Taimeido. (In Japanese)
- Kato, A. (2006). Aangyau shuuseki niokeru nakamatatorihiki nettowaaku no kinou to keisei purosesu: Higashiosaka tiiki no kanagata sanngyau no jirei kennkyuu [The function and formation process of networks of specialized firms in the industrial district: Case study of dies and mold industry in Higashiosaka area]. *Soshiki Kagaku*, 39(4), 56–68. (In Japanese)
- Krugman, P. (1991). *Geography and trade*. Cambridge, MA.: MIT Press.
- Marshall, A. (1920). *Principles of economics* (8th ed.). London: Macmillan.
- Marshall, A. (1923). *Industry and trade: A study of industrial technique and business organization, and of their influences on the conditions of various classes and nations* (4th ed.). London: Macmillan.
- Matsushima, S. (1998). Atarashii chuushou kigyau ron [New theory of small and medium-sized enterprises]. In H. Itami, S. Matsushima, & T. Kikkawa (Eds.), *Sangyau shuuseki no honshitsu: Juunan na bungyau shuuseki no jouken* [The nature of industrial districts: Flexible specialization and conditions of agglomeration] (pp. 25–48). Tokyo: Yuhikaku. (In Japanese)
- Matsubara, H. (1999). Shuuseki ron no keihu to ‘shin sanngyau shuuseki’ [The legacy of agglomeration theories and new industrial agglomeration]. *Toukyou Daigaku Jinbun*

Inamizu and Wakabashi

- Chirigaku Kenkyuu*, 13, 83–110. (In Japanese)
- Ogawa, H. (1998). *Itaria no chuushou kigyuu: Dokusou to tayousei no nettowaaku* [Small and medium-sized enterprises in Italy: Networking for creativity and diversity]. Tokyo: Nihon Boueki Shinkou Kai [Japan External Trade Organization]. (In Japanese)
- Ohashi, Y. (2000). Sangyou kurasutaa souzou katsudou no genjou to kadai [Current conditions of and issues in activities creating industrial clusters]. *Chiiki Kaihatsu*, 423, 14–20. (In Japanese)
- Porter, M. E. (1990). *The competitive advantage of nations*. New York: Free Press.
- Porter, M. E. (1998). *On competition*. Boston, MA: Harvard Business School Publishing.
- Saito, E. (1994). Nihon no kanagata sangyou: Purasuchikku kanagata sangyou to kaden sangyou tonon kigyuu kan kankei no kenkyuu no tameni [A note on dies and mold industry in Japan]. *Keiei Keizai*, 30, 1–38. (In Japanese)
- Saxenian, A. (1994). *Regional advantage: Culture and competition in Silicon Valley and Route 128*. Cambridge, MA.: Harvard University Press.
- Seki, M., & Kato, H. (1990). *Gendai Nihon no chuushou kikai kougyou: Nashonaru tekuno porisu no keisei* [Contemporary Japanese small and medium-sized machine industry: Formation of a national technopolis]. Tokyo: Shinhyoron. (In Japanese)
- Seki, M., & Fukuda J. (Eds.). (1998). *Henbou suru jiba sangyou: Fukugou kinzoku seihin sanchi ni mukau 'Tsubame'* [Transformation of local industries: 'Tsubame' develops as a center of production of compound metal products]. Tokyo: Shinhyoron. (In Japanese)
- Seki, M., & Tsujita M. (Eds.). (2001). *Hiyaku suru chuushou kigyuu toshi: 'Okaya moderu' no mosaku* [Growth of a city of small and medium-sized enterprises: Seeking out the 'Okaya model']. Tokyo: Shinhyoron. (In Japanese)
- Sumiya, M. (1971). Chiiki to sangyou: Dai toshi no shuuchou reisai kigyuu wo megutte [Locality and industries: Small and medium-sized enterprises in big cities] In H. Otsuka, R. Komiya, & Y. Okano (Eds.). *Chiiki keizai to koutsuu* [Regional economies and transportation] (pp. 69–86). Tokyo: University of Tokyo Press. (In Japanese)
- Takaoka, M. (1998). Sangyou shuuseki to maaketto [Industrial districts and markets]. In H. Itami, S. Matsushima, & T. Kikkawa (Eds.), *Sangyou shuuseki no honshitsu: Juunan na bungyou shuuseki no jouken* [The nature of industrial districts: Flexible specialization and conditions of agglomeration] (pp. 95–129). Tokyo: Yuhikaku. (In Japanese)
- Ueda, H. (Eds.). (2000). *Sangyou shuuseki to chuushou kigyuu: Higashi Osaka chiiki no kouzou to kadai* [Industrial districts and small and medium-sized enterprises: Structure of and issues in the Higashi Osaka area]. Tokyo: Soufusha. (In Japanese)
- Ueda, H. (2004a). *Gendai Nihon no chuushou kigyuu* [Small and medium-sized enterprises in modern

A new model of Japanese industrial districts

- Japan]. Tokyo: Iwanami Shoten. (In Japanese)
- Ueda, H. (Eds.). (2004b). *'Shukushou' jidai no sangyou shuuseki* [Industrial districts in an age of downsizing]. Tokyo: Soufusha. (In Japanese)
- von Hippel, E. (1994). 'Sticky information' and the locus of problem-solving: Implications for innovation. *Management Science*, 40(4), 429–439.
- Watanabe, Y. (1979). Dai tshi ni okeru kikai kougyou reisa keie no kinou to sonritsu kiban: Toukyou to Jounan chiiki no baai [The function and the persistence factors of little firms in the engineering industry]. *Mita Gakkai Zasshi*, 72(2), 179–211. (In Japanese)
- Watanabe, Y. (1985). Nihon kikai kougyou no shitaue seisan sisutemu: Kouritsusei ron ga shisa suru mono [Subcontracting systems in Japanese machine industry: Suggestions from efficiency theory]. *Shoukou Kinyuu*, 35(2), 3–23. (In Japanese)
- Watanabe, Y. (1997). *Nihon kikai kougyou no shakai teki bungyou kouzou: kaisou kouzou sangyou shuuseki kara no shitaue haaku* [The social structure of division of labor in Japanese machine industry: Ascertaining subcontracting systems from the perspective of hierarchical structures and industrial districts]. Tokyo: Yuhikaku. (In Japanese)
- Watanabe, Y. (1998). *Dai toshi ken kougyou shuuseki no jittai: Nihon kikai kougyou no shakai teki bungyou kouzou* [Actual state of industrial districts in major urban areas: The social structure of division of labor in Japanese machine industry]. Tokyo: Keio University Press. (In Japanese)
- Weber, A. (1909). *Ueber den Standort der Industrien, Erster Teil, Reine Theorie des Standorts*. Tübingen: J.C.B. Mohr.
- Whittaker, D. H. (1997). *Small firms in the Japanese economy*. Cambridge: Cambridge University Press.
- Yamamoto, K. (2005). *Sangyou shuuseki no keizai chiri gaku* [Economic geography of industrial districts]. Tokyo: Hosei University Press. (In Japanese)
- Yamazaki, M. (1977). *Nihon no jiba sangyou* [Local industry in Japan]. Tokyo: Diamond. (In Japanese)
- Yoshida, M. (2002). Toukyou Otaku no chuushou reisa kigyou ni okeru torihiki taiyou: Toshi gata sangyou ni okeru kouza hoyuu kigyou no ichi [Transaction policies of small factories in Otaward]. *Yokohama Ichiritsu Daigaku Ronsou: Shakai Kagaku Keiretsu*, 54(2-3), 107–141. (In Japanese)

[Received September 25, 2009; accepted October 15, 2009]

Inamizu and Wakabashi

ABAS: ANNALS OF BUSINESS ADMINISTRATIVE SCIENCE

Vol. 8 December 2009

CHIEF EDITOR

Junjiro Shintaku, *the University of Tokyo*

EDITORIAL BOARD

Makoto Abe, *the University of Tokyo*

Takahiro Fujimoto, *the University of Tokyo*

Makoto Kasuya, *the University of Tokyo*

Nobuo Takahashi, *the University of Tokyo*

Technical Editor: Maki Nishida, *Global Business Research Center*