



Risk sharing in the supplier relationship: new evidence from the Japanese automotive industry[☆]

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Abstract

The Japanese corporate system is assumed to contain an implicit insurance mechanism in various aspects. Based on an alternative method to that of previous studies, this paper examines risk sharing in the supplier relationship, using a unique data set of Japanese automotive parts suppliers. The results of this study suggest that the carmakers partially absorb the business risk of the suppliers, despite of recent structural changes in the supplier system. The relative stability of the profit rate of the suppliers is significantly influenced by the intensity of business relations with the main customer. © 2001 Elsevier Science B.V. All rights reserved.

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1. Risk sharing in the Japanese corporate system

Japanese large corporations have quite stable ownership structures as well as long-term relations with banks, suppliers, and customers. Such arrangements enable flexible terms of business in order to stabilize prices and business performance. In this sense,

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the Japanese corporate system is often assumed to include an insurance or risk sharing mechanism.¹

Aoki (1988), for example, explains the insurance mechanism in the supplier relationship as follows. If there is a difference in the degree of risk aversion between the business partners, it is more efficient as a whole that the larger part of risk is taken by the less risk-averse firm in return for some risk premium such as a greater share of the common rent made by efficient risk sharing between the business partners. It may be assumed that, in general, large customers (assemblers) have a greater risk-bearing capability than smaller suppliers because of their relatively higher degree of diversification and stronger financial power. Thus, it will be efficient for them to take a larger part of the business risk and so to insure their suppliers against profit fluctuation in return for obtaining a larger share of the profit from the business relationship.

The results of previous empirical studies (Kawasaki and McMillan, 1987; Asanuma and Kikutani, 1992) seem to support this idea of risk absorption by large customers. However, these results cannot be readily accepted because of some serious problems in the estimation method, as discussed below. It is therefore the purpose of this paper to reexamine in an alternative way if the Japanese supplier relationship really involves an insurance mechanism for suppliers, namely, if the customers absorb a part of the business risk of their suppliers.

The Japanese supplier system has been undergoing structural and strategic changes since the late 1980s. Carmakers and other final assemblers are restructuring their supplier relations by intensively seeking for new purchasing sources including overseas suppliers. Suppliers, on the other hand, have decreased the ratio of subcontracting business and the dependence on the main customer.² Such a “flexibilization” of the supplier system may weaken risk sharing, while globalization of economic activities and the increasing importance of R&D under rapidly changing market conditions are supposed to enhance business risk in general. It would therefore be of great interest to reexamine if risk absorption by large customers was in function until recently despite of these structural and strategic changes.

The next section provides a critical survey of previous empirical studies on risk sharing in the supplier relationship. In Section 3, the risk sharing will be reexamined in an alternative way using a unique firm-level data set from the Japanese automotive industry. Discussion and concluding remarks follow in Section 4.

2. Critical survey of previous empirical studies

Kawasaki and McMillan (1987) attempted the first econometric analysis of risk sharing in the supplier relations based on the principal-agent theory, taking into account the practices of

¹ Empirical analysis on this topic shows contrasting results. While Nakatani (1984), Osano and Tsutsui (1986) and Tsuji (1993) provide evidence for the insurance function of the main bank, Horiuchi et al. (1988) do not support this argument. Nakatani's (1984) further argument of risk sharing in corporate groups through a mutual insurance mechanism was not supported by Odagiri (1992).

² According to the Small and Medium Enterprise Agency (1999, p. 147 ff.), the ratio of subcontracting firms which completely devote themselves to the subcontracting business declined from 82 in 1987 to 48 percent in 1996. Within the same period, the ratio of subcontracting firms that concentrate more than a half of their sales on their main customer decreased from 71 to 53 percent.

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