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『日本の自動車工業』

—部品供給企業ネットワークの発展—

Konosuke Odaka, Keinosuke Ono, and Fumihiko Adachi, *The Automobile Industry in Japan: A Study of Ancillary Firm Development*, Tokyo, Kinokuniya, 1988, xv+339 pp.

Of the many remarkable industrial successes that go to make up Japan's continuing economic and export miracle, that of its automobile industry is certainly one of the most interesting. The interest lies largely in the sheer speed of its transformation from a relatively modest producer of a limited range of reliable but unexciting vehicles to a dominant force in a broad spectrum of technologically advanced automobiles. The factors which have enabled this transformation are now the stuff of legend, debate and study in Europe and the U. S. : the role of the government in developing the industry ; the tremendous productivity of Japanese workers ; the pace of automation and robotization ; the uncanny speed of new product design and introduction ; the just-in-time inventory system and the accompanying work organisation and discipline ; the ability to achieve productivity increases in the face of an appreciating Yen ; and so on.

But these are not the only topics that stimulate industry specialists. The unique nature of the relationship between the main auto firms and their suppliers in Japan has been recognized as a source of strength, flexibility and technological dynamism. This relationship has been closer than similar links in the West, and raises several questions about the nature of firm boundaries, transaction costs, technological linkages and the role of competitional questions that could occupy industrial economists for many happy hours.

The present book provides a clear, concise and convincing account of many of the interesting aspects of the Japanese automobile industry. It is rich in historical detail and entirely objective in its analysis of the leading role of the government, and also of foreign technology import and imitation of foreign technologies and the long accumulation of technological capabilities by Japanese engineers, in explaining the early development of the industry. The tale of the difficulties and errors of the industry pioneers, struggling to master unknown technologies in the face of local dominance by affiliates of General Motors and Ford, (this was itself a revelation to this reviewer), makes fascinating reading to anyone concerned with the process of industrial development in the Third World. This dominance was broken only at the instance of decisive government action to protect the domestic market and stimulate local producers (the Japanese army was a large early customer). After the War, it was surprisingly, purchases by the U. S. army that provided the impetus to start reconstruction, and purchases of technology from Europe that provided the critical inputs into upgrading of quality. The rapid growth of domestic demand and intensifying local competition then led to sustained expansion of production and growing efficiency. Exports became significant only around the end-1960's. It was clearly not export-orientation that provided the impetus to growth and efficiency—on the contrary, domestic growth gave rise to efficiency that was exploited (and further developed) in international markets.

The nature of auto technology dictates a rapid but efficient process of decentralisation of production among specialized suppliers and subcontractors in order to realize maximum efficincy. But many constraints exist to ancillary development for a new entrant : many components enjoy scale economies ; nearly all have demanding specifications in terms of process and product technology, difficult for inexperienced producers ; potential producers lack capital and managerial skills, apart from technology ; contractual arrangements raise problems of reliability, delivery, price, quality ; these problems increase if buyers are concerned about leakage of proprietary knowledge to competitors ; and they are multiplied when the pace of technical change increases, with increasing transaction costs among buyers and sellers.

The authors provide comprehensive answers to how nearly all these problems were solved in Japan. The main assemblers established intimate relationships with a few selected suppliers, to whom they continually supplied information, training, technology, capital and (initially) equipment. The long-term, stable and intense nature of the relationship, often with equity participation (which has grown rather than diminished recently), allowed many of the early development problems to be overcome. In fact, an effective internalisation of markets permitted such relationships to continue and proprietary knowledge to remain secret. To cope with accelerating technical change (the book does not deal with this, but other research highlights this important point), Japanese ancillary firms now participate in product development with the principals right from the start. This gives the principals not only the benefit of their specialized knowhow but also lead in the speed of product introduction over overseas competitors (who traditionally have a more distant relationship with their suppliers).

This unique Japanese combination of mutual trust and dependence, backed by continuous and intense interaction at both the technical and managerial levels, has (as noted) interesting implications for current theories of the firm. The book does not draw these out, unfortunately, but it is clear that problems of moral hazard and asymmetric information that plague long term inter-firm relationships have been overcome by this system very successfully. The attendant problems of enforcing cost/quality discipline have been tackled, not by subjecting suppliers to 'external' competition or threats of breaking contracts, but by continuing monitoring, moral exhortation and a tightly regulated system of 'internal' competition, by sourcing from one other supplier (also closely tied) or from within the principal company.

This system clearly did not permit any slack on the part of ancillary firms. On the contrary, the 'extended family' environment (family loyalty was actively fostered by the principal firm and suppliers' associations, which were built around each principal rather than around products) summoned energetic technological efforts by the ancillaries. More recently, as the principals have invested overseas in assembly operations, the major ancillaries (and some smaller ones) have also gone multinational, reestablishing the network of linkages overseas. Whether such linkages can be forged by auto firms in the West is an intriguing question. Growing international competition is generating forces against close, long-term dependence on particular suppliers. At the same time, the pace of technical change is inducing firms to share the R & D burden with each other and with major suppliers. Japanese firms are also being forced into more 'external' sourcing as their production grows more international.

The book could have been greatly strengthened, at least for Western readers, if it had drawn more upon the current literature on transaction costs to analyse the costs and benefits of the various linkages observed. It would also have held greater interest if a chapter had been devoted to comparing the Japanese system with that of Europe and the U.S.A.. The historical/descriptive method adopted is rich in detail, but it lacks the rigour of current theories of the firm.

This is, nevertheless, a minor shortcoming in this useful study. Industry specialists will find a wealth of material on 'alternative' organizational forms. Students of technology and development will learn lessons about the significance of building up indigenous capabilities and drawing upon the externalities that underlie inter-firm linkages. Policy makers can benefit from the analysis of the role of government interventions (which this book provides in almost every chapter), carefully tailored to promote local production in a dynamic and efficient way. The extent to which these lessons can be applied elsewhere is a topic that deserves much more study.

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