THE ECONOMIC RATIONALITY
OF THE JAPANESE DISTRIBUTION SYSTEM

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The Economic Rationality of the Japanese Distribution System

The unique features of the Japanese distribution system are usually described as backwards and economically inefficient. In academic writing on the subject on both sides of the Pacific, references to Japanese tradition, culture, history, and laws and regulations are frequent. As examples see Yoshino (1971), Ratcliffe (1975), Tsuruta (1980), Tamura (1981), Tsurumi (1982), and Wada (1986). The features of Japan's distribution system that are most often claimed to defy economic rationality include (1) the ubiquity of small retail stores and the long and convoluted channels through which goods must be shipped in order to reach them, (2) the tendency of manufacturers to impose vertical restraints on retailers and wholesalers, including resale price maintenance, assignment of exclusive territories, and insistence on exclusive dealing, and (3) unlimited acceptance by manufacturers of returns of unsold merchandise.

Contrary to the conventional view, each one of these three characteristics of the Japanese distribution system can be best understood or explained through economic theory. The Japanese distribution system is economically rational: The ubiquity of small stores efficiently economizes on household storage and shopping cost. The vertical restraints generally have enabled manufacturers to induce efficient behavior by retailers and wholesalers in the promotion and marketing of their products. And liberal returns policies have enabled manufacturers who must produce before learning the true demands for their products to make the best possible use of their imperfect information. As I describe these arguments in detail I shall be drawing heavily on previously completed work. Flath (1988), Flath and Nariu (forthcoming), and Flath (forthcoming).
I. Ubiquity of Small Stores

I-A. Background

In Japan, small retailers are particularly common. In 1982 there were 145.3 retail stores per 10,000 persons in Japan, compared to 82.9 for the United States. The similar statistics for the United Kingdom, France, and West Germany were 62.7, 74.8 and 67.0, respectively. The long and complicated channels by which goods must be shipped in Japan are arguably corollaries of the fact that there are many small stores in Japan. That is, the complicated channels are necessary because the retail destinations are so fragmented.

That Japan's distribution system is inefficient for having so many stores has become a cliche that appears in academic and journalistic writing on Japan as well as in U.S. government position papers. There are two economic arguments on which the inefficiency claim has been based. One is the argument that Japan has a dualistic economy in which the distribution sector, unlike some other sectors, is economically backwards and riddled with anachronistic customs that have a cultural basis rather than an economic basis. In this view, the large number of stores in Japan is a symptom of economically wasteful overemployment in family enterprises, in Lewis' terminology: disguised unemployment. Patrick and Rholen (1987) have recently challenged the traditional dualism view, at least as regards current-day Japan, but only to replace it with an argument that is rather similar. They claim that those past retirement age (generally 55 to 60 years) and women are denied equal employment opportunities in anything other than family enterprise. Therefore they set up

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1 Keizai kikakucho (1986), Table 2-4, p. 7.
2 Ibid.
small stores (or become subcontractors) because economies of scale are least there and the inefficiencies of their being prevented by discrimination from fully exploiting their comparative advantages will be minimized. If there were less discrimination against women and the aged, there would be fewer family enterprises in Japan and fewer small stores.

The other inefficiency argument has to do with regulation. A succession of Japanese laws over the last half century have imposed bureaucratic obstacles to the establishment of large stores. The Department Store Act of 1937, which was suspended in 1947 and then reinstated in 1956, required approval of the national government (Ministry of Commerce and Industry, prewar/Ministry of International Trade and Industry, postwar) for the opening of new department stores anywhere in Japan. In 1973 the Large Scale Retail Store Act replaced the Department Store Act and made the extent of floor space of proposed stores, rather than the nature of the stores, the criterion for necessitating MITI approval. The cutoffs were 3000m² in the largest cities and 1500m² everywhere else; in fact almost all stores of larger floor space than these cutoffs had been department stores. Finally in 1978 this law was completely revamped so as to broaden its coverage to include all proposed new stores with floor space above 500m².

McCraw and O'Brien (1986) place great emphasis on these laws as the explanation for the large number of retail stores in Japan. As evidence that the laws have seriously restricted the growth of large stores they cite the marked drop in number of applications to open new stores following the enactment of the 1978 amendments to the Large Scale Retail Store Act, to a mere trickle in 1984 of less than 500 applications for permission to open

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stores with floor space in excess of 500m$^2$ in all of Japan, a country of 120 million persons. Tamura (1986), p. 86, cites the same evidence in making a similar argument.

Though both the above arguments suggest that there are more small stores in Japan than is economically efficient, they leave aside the question of just how many stores would be economically efficient. We ought to consider whether in the absence of regulation and labor market dualism there would be an inherent tendency in Japan for there to be many small stores. And here some economic theorizing is helpful.

The number of stores that minimizes the consumers' and retailers' combined storage and reorder costs given the demand, can be precisely related to cost parameters and to the geographic density of households, using the logic of economics. Having more stores per person reduces household inventory costs by shortening the distance from house to store for the typical consumer and enabling more frequent shopping trips for smaller loads. However having more stores increases the stores' combined inventory costs because it is relatively more costly to restock many stores than it is only a few. The Japanese pattern of many stores per person is economical where households are relatively inefficient at storage and reorder while retailers are relatively efficient. The high land prices and cramped living space make storage costly for the typical Japanese household, while the geographic smallness of Japan makes the cost of continually restocking a larger number of stores rather less than it would be in a vast country like the U.S.. On these grounds the many small stores and correspondingly complex distribution channels are efficient adaptations to the circumstances of the country. The next four sections I-B, I-C, I-D, and I-E are a formal development of the above argument.
I-B. Assumptions

There are two crucial assumptions to my economic model of the density of retail outlets. One is the assumption that retailers, as well as households, have Baumol-type storage and reorder technologies. The purpose of this assumption is to introduce consumers' and retailers' inventory costs in a way that is informative but tractable. The other crucial assumption is that, except for regulatory effects, the geographic density of retail outlets minimizes the households' and retailers' combined storage and reorder costs. One reason for assuming social optimality is that it enables one to ignore the pricing behavior of the sellers. This is an advantage because (pure) Nash equilibrium mill pricing strategies need not exist in the environment I propose. The social optimality assumption amounts to the claim that retailing attains technological efficiency.

Households. Let households be uniformly arrayed with density D across an unbounded plane. Suppose that each household consumes some nondurable good at rate q which is the same for all households and is independent of both the good's price and the household's storage and reorder costs. Let each household have storage costs equal to k per unit of average inventory of the nondurable good. Further, suppose that each time a household reorders it incurs costs equal to r times the distance from the household to the nearest retail outlet.

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4 On this point see Gabszewicz and Thisse (1986). In their terminology, my model gives rise to "transportation costs" of consumers that are proportionate to the square root of the distance to the store, and "production costs" of stores that are proportionate to the square root of quantity supplied.
We presume that each household chooses a frequency of reorder that minimizes its own storage and reorder costs.

**Retailers.** Retailers are uniformly arrayed across the plane, with density \( D_1 \) to be determined endogenously. We suppose that the households' reorders are utterly unsynchronized so that each retailer's inventories are depleted at the continuous rate \((D/D_1)q\). Let retailers have storage costs \( K \) per unit of average inventory. Also, suppose that each time a retailer reorders he incurs costs equal to \( R \), a constant. The uniform spatial density of retailers is endogenous and minimizes the global storage and reorder costs.

I-C. **Households' storage and reorder costs**

The storage and reorder cost of an individual household distance \( t \) from the nearest retailer is

\[
(1) \quad s(t) = \frac{kl}{2} + \frac{rqt}{l} ,
\]

where \( l \) = reorder quantity, which implies \( l/2 \) = average inventory and \( q/l \) = frequency of reorder. The household will choose \( \lambda \) to minimize this cost. One easily finds that

\[
(2) \quad \lambda^* = \sqrt{\frac{2rtq}{k}} ,
\]

from which we deduce that

\[
(3) \quad s(t) = (2krqt)^{1/2} .
\]

By assumption retailers are uniformly arrayed with mean density \( D_1 \). Let us also assume that the market served by each retailer is a hexagon\(^5\) with area

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\(^5\) Any regular polygon that fills the plane will yield qualitatively similar results to those that follow. See Cappoza and Van Order (1978), f.n. 4, p. 900.
$D_1^{-1}$ and radius $D_1^{-1/2}12^{-1/4}$. Then the storage and reorder costs of all the $D/D_1$ households served by the same retailer are

$$S(D_1) = 12D \int_0^{12^{-1/4}D_1^{-1/2}} \int_0^{x/3} (2k\sigma q)^{1/2} (x^2+y^2)^{1/4} dy \, dx$$

To evaluate (4), make the substitution $y = x \tan \theta$, noting that $(x^2+y^2)^{1/2} = x \sec \theta$, $dy = x \sec^2 \theta \, d\theta$, and $x \tan \theta = 0 \to \theta = 0$, and $x \tan \theta = x/3 \to \theta = 30$. Now we have

$$S(D_1) = 12D \int_0^{12^{-1/4}D_1^{-1/2}} \int_0^{30} (2k\sigma q)^{1/2} x^{3/2} \sec^{5/2} \theta \, d\theta \, dx$$

$$= D(.627)(2k\sigma q)^{1/2} D_1^{-5/4}.$$

The storage and reorder costs per household served by the retailer are

$$C_0(D_1) = \frac{S(D_1)}{D/D_1}$$

$$= (.627)(2k\sigma q)^{1/2} D_1^{-1/4}.$$

I-D. **Retailers' storage and reorder costs**

Each retailer serves $D/D_1$ households and incurs storage and reorder costs

$$s_1 = \frac{KL}{2} + \frac{RDq}{LD_1},$$

where $(D/D_1)^q = \text{rate of depletion of inventory}$, and $L = \text{reorder quantity}$.

Each retailer chooses $L$ so as to minimize its storage and reorder costs.

One finds that
so that

\[ S_1(D_1) = (2KRD_1Dq)^{1/2}. \]

Thus the retailer's storage and reorder costs per household are

\[ C_1(D_1) = \frac{S_1(D_1)}{D/D_1} = D^{-1/2}D_1^{1/2}(2KRq)^{1/2}. \]

I-E. Solution

The global storage and reorder costs per household are

\[ C(D_1) = C_0(D_1) + C_1(D_1). \]

The density of retailers that minimizes this cost is that which equates the marginal reduction in the households' storage and reorder costs with the marginal increase in the retailers' storage and reorder costs:

\[ \frac{\partial C}{\partial D_1} = \frac{\partial C_0}{\partial D_1} + \frac{\partial C_1}{\partial D_1} = 0. \]

The solution to (12) is

\[ D_1^* = (.213) \left( \frac{KRD}{KR} \right)^{2/3}. \]

The logic of the model is represented in figure 1. Exogenous changes that increase households' costs of storage and reorder induce an increase in the density of retail outlets, which economizes by shifting more of the storage and reorder costs onto the retailers. Exogenous changes that increase the retailers' costs of storage and reorder induce a fall in the density of retail
outlets, which economizes by shifting more of the storage and reorder costs back to the households. Greater geographic density of households implies greater reorder efficiency of the representative household\textsuperscript{6} and induces a disproportionately small increase in the density of retail outlets.

\textbf{I-F. Discussion.}

Even the conventional explanations for the ubiquity of small stores in Japan can be interpreted through the above framework. Overemployment in family enterprises might be thought of as lowering retailers' cost parameters $R$ and $K$, inducing more outlets. In a global sense this phenomenon is wasteful (It is maintained that the families would be more productive in alternative pursuits), but from the view of consumers, the cost of physically transporting goods through the distribution system is made less by it.

Regulation such as under Japan's Large Scale Retail Store Law can be treated as establishing lower bounds on the geographic density of retail stores. The precise placement of this lower bound will reflect local political conditions.

The generally higher population density of Japan would seem to favor fewer retailers per household than in the U.S., which is quite the opposite of what is observed for most kinds of business.

Any tendency towards greater division of labor within Japanese households than in American ones, with greater specialization in shopping in Japan, would tend to lower the reorder costs of households there (lower $r$), inducing fewer

\textsuperscript{6}For any given number of stores per household the distance from the representative household to the nearest store is less as the density of households is greater.
stores, not more. To the extent Japanese derive pleasure from shopping, this too lowers the households' reorder costs and has similar effects.

Preference for "fresh" provisions has no clear implication for the number of stores. The purchase of fresh produce certainly favors frequent household shopping trips, but also requires more frequent restocking of stores. The fundamental tradeoff between household inventory costs and distributors' inventory costs is encountered for fresh produce just as it is for other goods.

The generally cramped living conditions and consequently high storage costs of nondurable goods for Japanese households (high k), would tend to favor more nondurables retailers in Japan, if the ultimate cause of the cramped living conditions, the high land prices, did not also cause retailers to have proportionately higher storage costs (high K). High household storage costs probably are a factor in explaining why there are so many more (nondurables) retail stores per person in Japan compared to the U.S..

Retailers in Japan have lower reorder costs (R) than those in the U.S.; because of the geographic compactness of the country the distance from store to reorder point tends to be short in Japan.

Clearly the net effect of these various and conflicting influences on the costs and benefits of a proliferation of retail outlets can be sorted out only by empirical estimation. I have made a first step in this direction by estimating regression equations that explain much of the cross prefecture variation in number of stores of different kinds per household. Flath (1988). In that work economic variables such as fraction of each prefecture's population residing in densely inhabited districts, tatami mats per person, and motor vehicles per person, explain more variation in food stores per household, say, than does department stores per person. If a prefecture does have
relatively few department stores per person, presumptively because of strict application of the Large Scale Store Law, then indeed it also has relatively more food stores per household. But this inverse relation between number of department stores and number of food stores (and other stores), although statistically significant is not nearly strong enough to fully account for the Japan-U.S. difference in number stores. Regulation is not the reason there are so many small stores in Japan. Rather the ubiquity of small stores in Japan is an economically efficient adaptation to geographic conditions. In Japan household storage costs are high and the costs of restocking a multiplicity of retail stores are low compared to other countries. Both conditions favor the economic rationality of a system in which retail outlets are ubiquitous.

II. Vertical Restraints

II-A. Background.

Antimonopoly laws pertaining to resale price maintenance, exclusive dealing stipulations, and customer restrictions are generally more permissive in Japan than in the U.S.. In some instances Japan's Antimonopoly Law explicitly permits these practices, as in resale price maintenance of copyrighted works. More usually, although the Antimonopoly Law would in a vague way seem to disallow the practices (Current Japanese proscriptions disallow "unjust" customer restrictions and exclusive dealing), the sanctions are so weak that the law is widely flouted. When antitrust proceedings are brought against a company for having established violative marketing arrangements the result is almost always that the company agrees to discontinue the offending arrangements without being penalized. There are a number of
these cases. And it is from the published decisions in the cases that one learns of specific examples of vertical restraints in distribution in Japan. The examples are widespread across industries (including some with enormous sales such as home electronics, cosmetics, cameras, and furniture), and have contributed greatly to the view that the Japanese marketing system is complex, difficult for foreigners to understand, hard to rationalize in economic terms, governed by tradition and custom rather than by economic rationality, and so on.

Because the Japanese examples of vertical restraints arise as antitrust cases, questions of whether vertical restraints might be abusive or monopolistic, whether they should be allowed and so on have diverted attention away from the more basic question of why the companies that have imposed vertical restraints stood to profit. The legal issues have been a source of confusion in the U.S. also but academic economists have striven hard to overcome it, so that there now exist widely accepted economic explanations for many of the U.S. antitrust cases involving vertical restraints. Of course none of these explanations refer to unique aspects of American tradition and culture. Before appealing to Japanese tradition or culture to explain vertical restraints in Japan we ought to first try economic explanations for these as well. In fact many of the explanations developed for U.S. examples can be usefully applied. I will next briefly describe some of these explanations with reference to a selection of Japanese antimonopoly cases that I believe to be representative.

II-B. Resale Price Maintenance
By r.p.m. I mean retailers' agreement not to resell the products of manufacturers at prices below some stipulated level—a manufacturer imposed price floor. In a justly famous 1960 article, Telser proposed an explanation for r.p.m. that seems to fit many of the Japanese examples. Telser argued that makers will often desire that presale demonstrations be given because some customers who would otherwise not buy the product at all will do so if they are given a presale demonstration of the product. But retailers can not recover the costs of the demonstrations because they must compete in price with free-riding rivals who avoid giving demonstrations themselves but attract customers who have obtained the demonstrations elsewhere. The result is that retailers do not provide the demonstrations. If however the maker maintains a minimum retail price sufficiently above the wholesale price that it compensates retailers for the costs of providing demonstrations, then retailers find that they can only have customers and be profitable if they provide the demonstrations (Customers will buy from the retailer who provided them with the presale demonstration if his price is no greater than that of his rivals). Resale price maintenance can therefore be to induce retailers to provide presale demonstrations. This argument is most compelling for products that are somewhat complicated or unfamiliar, or for which there exist many optional features or gradations of quality and so on. As Japanese examples for which the argument seems to fit well I would cite the cases involving Matsushita7.

Nikon, and France Bed, involving cameras, electric appliances, and furniture, respectively.

An additional rationale for maker-imposed price floors is to prevent arbitrage from upsetting a profitable system of price discrimination. For instance Organ Needle held a near monopoly of sewing machine needles, enjoying a market share greater than 80%, and sought to exploit this by, among other things, seeing that higher prices were set in sales of needles to individuals than in sales to the more elastic demanders, industrial customers. But because Organ distributed the needles through wholesalers it was necessary to control the wholesalers' prices, preventing discount sales to elastic demanders.

II-C. Manufacturer-Imposed Maximum Resale Price

Occasionally manufacturers will stipulate maximum prices, rather than minimum prices, a price ceiling rather than price floor. Here the rationale is to prevent the retail or wholesale dealers from exploiting the manufacturer's monopoly. The dealers will only be in a position to do this anyway if there are but few of them within a particular geographic area. This was the case

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Also see Tazaki (1976).
Also see Watanabe (1979).
with Takeya. Takeya's miso "monopoly" (Its national market share was never higher than about 4%) was based on its distinctive flavor and reputation for quality supported by television advertising. As is common in Japan, the distribution channel for Takeya miso encountered a bottleneck at the wholesale level, with but five primary wholesalers in the Kanto area. To prevent these wholesalers from exploiting Takeya's monopoly, Takeya imposed maximum resale prices on the wholesalers and devoted extensive effort to enforcing the stipulation, including resort to an elaborate system of record keeping, circuitous methods of payment, and detailed assignments of retailers to specific wholesalers, and of secondary wholesalers to specific primary wholesalers.

II-D. Exclusive Territories

Monopoly at the wholesale or retail level is sometimes the result of the manufacturer's own customer assignments. Makers sometimes deliberately limit the number of dealers permitted to carry their product or even assign each dealer an exclusive geographic monopoly. They do this so that each dealer will himself capture more of the benefits of his efforts at promoting the product or maintaining its quality and have an optimal incentive, rather than having the benefits spillover to rivals and so a disoptimal incentive.

For instance Yakult assigned exclusive geographic territories to the bottlers of its yoghurt drink so that each would be more inclined to maintain

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quality and refrain from diluting the drink. Yakult found it necessary also to stipulate maximum price and minimum quantity in order to further stimulate bottlers to promote demand and maintain quality and refrain from monopolistic restrictions of output. The problem of optimal arrangements between Yakult and each bottler to whom it had assigned an exclusive geographic territory were as in the Rey and Tirole (1986) example of a bilateral monopoly with effort, pp.10-11.
II-E. Exclusive Dealing

Manufacturers occasionally stipulate that retailers of their products not handle rivals' products. In particular they do this when they intend to assist retailers in their selling efforts and wish to assure that the benefits rebound on themselves rather than on rivals. For example Gakken\textsuperscript{13} insisted that independent salesmen of its educational books and magazines deal with it exclusively, in order that the sales leads it provided not be used by the salesmen to benefit rivals. Refer to Marvel (1984) for a parallel example in the U.S. involving the sale of hearing aids through independent exclusive sales representatives.

II-F. Discussion

Though I have only introduced a small number of examples I believe them to be typical and representative. Most of the examples resemble specific U.S. antitrust cases in fundamental respects. The externality problems and successive monopoly problems that give rise to vertical restraints are very much the same in both Japan and the U.S.. If there is a difference between vertical restraints in Japan and in the U.S. it is that in Japan, the ubiquity of small retailers and resulting complex distribution channels frequently complicate the enforcement of vertical restraint stipulations by makers. Countering this, in Japan antitrust laws are less of an encumbrance to makers who seek to impose vertical restraints.

I next address a marketing practice common in Japan, that many have thought to be clear evidence of economic perversity.

Also see Hokari (1980).
III. Returns Policy

III-A. Background.

In Japan makers of a wide range of products liberally accept returns of unsold merchandise. In fact unlimited returns are often allowed for books, magazines, apparel, cosmetics, and electric appliances. Also returns are at a high rate, but are apparently not allowed to an unlimited extent, for records, pharmaceuticals, and stationery. One should understand that it is not the return of damaged or defective merchandise that is at issue here but rather merchandise that is merely unsold and returned to the maker at the convenience of the retailer. This is a practice used in the U.S. and Western Europe only for newspapers, magazines, and books, and a few other items. It seems to be much more widespread in Japan though the evidence for this is largely anecdotal.

To understand the economic basis for the returns system in Japan we must first recognize that in industries in which the practice is common, returned merchandise is often or even usually destroyed rather than being held in inventory for sale at a later time. This suggests a monopoly pricing model of the returns practice and I shall next describe such a model.

III-B. Fixed-price Policy for a Vertically Integrated Monopolist

Imagine that the maker of a product is a monopolist (or Chamberlinian monopolistic competitor) and that he must decide how much to produce in advance of learning the true final demand for his product. Such a monopolist will be

14 The returns policy in Japanese marketing is discussed in a general way in keizai kikakucho (1986), and in Ejiri (1979).
left with unsold merchandise if he has set a price in advance of knowing the true demand and sticks to the price even though the scale of demand turns out to be less than he had hoped. The alternative in which the monopolist is never left with unsold merchandise, is for the monopolist to sell all that is produced at whatever price just clears the market, a high price if demand turns out to be great and a low price otherwise. It is quite easy to construct examples in which the fixed-price regime in which unsold merchandise is a possibility is more profitable than its variable-price alternative, and just as easy to construct counterexamples.

For instance, as an example in which the fixed-price regime is more profitable, imagine that a monopolist must produce before knowing the demand for his product exactly, and that he does know that the demand curve will be linear and he knows the vertical intercept but does not know the slope of the demand curve. Suppose also that demand exists for one period only. If production costs are negligible the monopolist can approach a first best outcome by setting a price equal to half the demand intercept and producing an amount that will be demanded at that price in only the most optimistic case. The monopolist would produce less than this if he intended instead to sell all at a market clearing price but his profit would be less in that case. Therefore the monopolist sets a price and sticks to it even though it is apt to result in unsold merchandise. He will resist the temptation to sell the unsold merchandise at a lower price rather than destroying it because if he gets a reputation for marking down unsold merchandise he will be unable to sell at the price he first announces when demand is slack.

To switch the example to one in which the policy of selling all produced at a market clearing price dominates, we need only introduce production costs
that are large, or alter the uncertainty so that the horizontal intercept of
the demand curve is known in advance of production rather than the vertical
intercept. See the mathematical appendix of Flath and Nariu (forthcoming) for
an algebraic statement of the argument in the above two paragraphs. And see
the final paragraph of that appendix for an example that extends the argument
to a monopolistically competitive oligopoly.

The argument thus far, although it abstracts from many features of actual
industries, already enables us to uncover some likely features of the
industries in which destruction of unsold merchandise is apt to be common.
There should be some element of monopoly, unique characteristics of the
products of individual firms. The demand for the product or the product itself
should be "perishable" like the demand for a specific day's newspaper or a
specific season's fashionable attire, or a load of books more costly to store
for resale at a later date than is worthwhile. The elasticity of the demand
facing any one firm should be fairly easy to predict but the scale of demand
must not be. For instance this could be so if a firm could accurately predict
the elasticity of demand of the representative buyer of its product, say a
weekly magazine, but could not accurately predict how many individuals will
each buy one unit of the product. Finally, production costs should be small
relative to the demand. All these factors make it more likely that destruction
of unsold merchandise will be one part of a profitable pricing strategy for the
firms in an industry.
III-C. Fixed-price Policy When the Product is Distributed Through Independent Retailers

In the argument thus far the maker sells directly to final demanders so the implementation of a fixed-price policy poses no special problems. If instead the maker sells to independent retailers then he has two different ways of implementing a fixed-price policy, each with its own advantages and disadvantages. The first way is to stipulate minimum retail prices (resale price maintenance, or RPM), and the second way is to accept unlimited returns of unsold merchandise (returns policy).

Under RPM, first the maker produces some quantity of the good and stipulates a wholesale price and a minimum retail price. Then the retailers set order quantities. Last, the true final demand determines the quantity of unsold goods, which are absorbed by the retailers.

Under the returns policy, the maker produces some quantity of the good and stipulates a wholesale price, and himself determines the quantity to ship to each retail outlet, but extends unlimited returns privileges to retailers. Last, the true final demand determines a retail price and determines what quantity is sold to consumers at each outlet and what quantity is returned to the maker. The possibility of returning unsold merchandise places a floor on the market-determined retail price.

Both RPM and the returns policy enable the maker to fix a retail price at which his product will be sold, in contrast with a fixed-quantity, variable price policy. With independent retailers, the fixed-quantity policy would entail that the maker produces some quantity of the good and sets a wholesale price, and then retailers set order quantities; the true final demand determines a market clearing retail price. The advantages of either RPM or
returns policy over this policy are precisely the advantages to a vertically
integrated maker in setting price rather than quantity, both in advance of
knowing the true demand. These advantages and the necessary conditions for
their existence have been detailed above. We now turn attention to the choice
between RPM and returns policy, accepting as a premise that at least one
dominates the fixed-quantity alternative but realizing that this is a special
case.

III-D. RPM Versus Returns Policy

One important difference between RPM and returns policy is that RPM places
the risk of unsold merchandise on the retailers while returns policy places
that risk on the maker. If these risk considerations were the only important
difference between RPM and returns policy then efficient choice between these
two alternatives would be governed solely by the degree of risk averseness of
maker and retailers. For instance, if the maker is risk neutral but retailers
are risk averse then the returns policy would be favored over RPM.

Besides the allocation of risk, an additional consideration is the way in
which RPM or returns policy enable the maker to exploit the retailers' private
information about demand. Under RPM the quantity shipped to each retailer is
chosen by the retailer himself, but under the returns policy the maker
determines shipment quantities. Only under RPM will the allocation of the
product across retailers reflect each retailer's private information about the
demand he expects to face. Under the returns policy the allocation across
retailers reflects the maker's information. The advantage of exploiting the
better information is that by more closely matching initial shipments with
actual demand at each outlet, the costs of either overproducing or of
transshipping merchandise from outlets with overstocks to those with stockouts can be minimized.

If the retailers' information about the local demand is better than the maker's information, then on this ground RPM would be favored over the returns policy. This need not be true in every case but would seem to be the usual case, just as the retailers being more averse to risk than the maker would seem to be the usual case. It thus appears that tension between RPM and the returns policy is inevitable, RPM favored for its use of information but returns policy favored for its allocation of risk. Clearly, the quality of the retailers' and maker's private information about the demand, and the costs of shipping merchandise and the production costs, as well as the degrees of risk averseness of the maker and retailers, all play a role in determining the relative advantages and disadvantages of RPM and the returns policy.

III-E. Discussion

Too much has been made of the "uniqueness" of Japanese manufacturers' unlimited acceptance of returns of unsold merchandise. While the practice may indeed be more prevalent in Japan than elsewhere, the difference is one of degree only. For example returns policy is common in the publishing industries of the U.S. and European countries as well as in Japan. The demands for magazines and newspapers and the demands for many types of books are both

\[^{15}\text{There may arise cases where the maker has better information about the local demand than do the retailers. In these cases, which would seem to us to be exceptional, a returns policy would make better use of information than would RPM. For example, small makers who accept returns from chain department stores may do so because their own information about the local demand is better than that of the department stores and returns policy makes better use of the information than would RPM. This is in sharp contrast with the conventional explanation which is that the department stores are exploiting the small makers by insisting upon liberal acceptance of returns.}\]
temporary and difficult to predict. These are among the requisites for the fixed-price policy described above to be profitable.

Where retailers are more averse to risk than are makers and have less or no greater ability than makers to predict the demand they will face, the makers implement the fixed-price policy by accepting unlimited returns. In the reverse cases RPM is the preferred way of implementing the fixed-price policy. Newspaper carriers and small independent stores are typically quite risk averse and enjoy liberal returns privileges. Large chain stores, which tend not to be so risk averse, are more often subject to RPM and enjoy limited returns privileges. Because of the ubiquity of small stores in Japan it is natural, even economically rational, that the returns policy is more pervasive in Japan than in the U.S. and Europe.

IV. Conclusion

Even the most admiring authorities on Japan’s highly prosperous economy have generally withheld from praising the distribution sector and treated it instead as a puzzling aberration: How could the manufacturing system of Japan be so innovative and efficient and the marketing system so backwards? The ubiquity of small stores in Japan and the complicated contractual arrangements between makers, wholesalers, and retailers, often including liberal extension of returns privileges, have struck many observers as clear evidence of waste and inefficiency.

I myself am not so convinced that the Japanese distribution system is economically wasteful. Predictions that traditional ways of organizing the distribution of products would soon be eclipsed by more modern systems are less believable with each passing year. Perhaps we should reassess whether the
persistence of the distinctive features of the Japanese distribution system really is due to cultural inertia or government regulation as so often claimed. I believe that, rather, there is an underlying economic rationality to each of the unique features of Japan's marketing system, and it is this economic rationality that accounts for the persistence of those features.
REFERENCES


Izumisawa, M. (1979). "K.K. Takeya no kosoku joken tsuki torihiki ni kan suru dokkin ho no mondi ten" (Antimonopoly law issues pertaining to Takeya Co.'s attachment of restrictive conditions to its transactions), *Kosei Torihiki* 342, 54-57.


Figure 1. Increases in household storage and reorder costs and decreases in retailers' storage and reorder costs induce more stores per household.

\[ \frac{\partial c_1}{\partial d_1} D = 0.5(2KRq)^{1/2} \left( \frac{D_1}{D} \right)^{-1/2} \]
- marginal increase in retailers' inventory costs

\[ - \frac{\partial c_0}{\partial d_1} D = 2.508(2krq)^{1/2} D^{-1/4} \left( \frac{D_1}{D} \right)^{-5/4} \]
- marginal decrease in households' inventory costs

\( D_1/D \) = stores per household