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**How Much Do Japanese Buyers Pay for Distribution Service?:
A Comparative Study between Japan and the United States**

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How Much Do Japanese Buyers Pay for
Distribution Service? :
A Comparative Study between Japan and
the United States*

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*This chapter is a updated version of Nishimura [11] , which is in turn based on Nishimura and Tsubouchi [14].

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1. Introduction

The U.S. Trade representative in 1989 identified the Japanese distribution system as a structural impediment to the sale of American goods in Japan. In fact, the prices of many goods imported from the United States, such as blue jeans and golf balls, were almost twice as high as those in the United States at that time. Since then, a number of studies surfaced on the subject of "efficiency" or "inefficiency" of Japan's distribution system (Ito and Maruyama [7]), or specific aspects of it such as the Large Scale Retail Store Law (Flath [5]), distribution Keiretsu (Flath [4]), and structure of wholesaling and retailing (Sato [18]).

The purpose of this chapter is to assess the Japanese distribution system from the viewpoint of final-goods buyers, by comparing it with the U.S. system. The retail price of a particular product which final-goods buyers pay can be decomposed into two parts: the cost of distribution services and the producer's price. In this chapter, we examine whether the cost of Japanese distribution services has increased significantly in recent years compared with the producer's price, and whether it becomes the major source of high retail prices in Japan.

There are two conflicting views about the cost of Japanese distribution services. In one view, there are disproportionately many small stores which do not exploit economies of scale, many layers in wholesale trade which accumulate margins, and various complex trading practices which increase the cost. These institutional features are rigid in the sense that they do not adjust smoothly to changing economic conditions. They have raised the cost of distribution services substantially compared with the producer's price in Japan over the decades of rapid technological progress. The resulting high cost of distribution services is the major cause of high Japanese retail prices. This view becomes conventional wisdom, and the "modernization" or "rationalization" of the distribution sector is the aim of many government policies in this sector (Montgomery [12] and Kuribayashi [8]).

However, in another view, these institutional features are the result of rational adaptation of the distribution system to the Japanese environment, and they are by no means rigid. They have not increased the cost of distribution services in recent years, and the cost is comparable to that of the United States. Thus, the distribution system is not the major cause of high Japanese prices (Ito and Maruyama [7] and Sato [18]).

Recent studies attempt to resolve this question about the cost of distribution services with reference to macroeconomic data. Maruyama *et al* [9], and Ito and Maruyama [7] investigate the "gross margin ratio" or percentage difference between sales revenues and merchandise costs of the distribution sector, which (roughly) corresponds the ratio of the cost of distribution services to the final

price. They find that the ratio is at least close to that of the United States and other OECD countries, and in some cases the Japanese margin ratio is lower. These studies use various government statistics of Japan, the United States, and other countries, and reveal that the difference between Japan and other countries is not as much significant as people, including economists, often believe. They argue that, although there are some isolated high-cost distribution channels, the Japanese cost of distribution services compared with the producer's price is as a whole quite similar to that of other countries.¹

In this chapter we extend the above studies in four respects, and examine whether their results still hold true. First, biases in the data used in these studies are identified and corrected. Second, the transportation sector is incorporated into the distribution system, while previous studies ignore its importance.

Third, we disaggregate the distribution of final goods into three segments (consumer, investment and export goods), and into product groups within the segments, while previous studies are based on more aggregate data. Here consumer goods are goods sold to domestic consumers, which include processed food, household appliances, and passenger cars. Investment goods are goods bought by domestic firms as a part of their investment activity, which include machinery and equipment. Export goods are goods exported to other countries. Motor vehicles are important export goods in Japan, and airplanes are one of the most conspicuous export goods in the United States.²

Finally, we investigate the evolution of the cost of distribution services over past twenty-five years (1965-1990), while previous studies rely on data around 1982. This is necessary in order to examine whether the Japanese cost increases rapidly over years as the conventional view stresses. Moreover, since the retail and wholesale sectors are sensitive to business cycles, it is necessary to examine the long-run movement in order to get rid of the effect of business cycle.

Using base-year input-output tables and sample survey results about the distribution sector in Japan and the United States, we obtain three results. First, around 1982, the ratio of the cost of distribution services to the final price is comparable between Japan and the United States in consumer-goods and investment-goods distribution, while the ratio in export-goods distribution is lower in Japan. This general tendency is found not only in aggregate ratios but also in disaggregate product-group ratios. This confirms the result of previous studies, and suggests that the distribution sector is not the major source of high Japanese retail prices, but rather that the high producer's price is likely to cause them.

¹The cost of distribution services defined here is sometimes interpreted as a measure of efficiency of the distribution system (Ministry of International Trade and Industry [10], Maruyama et al [9], and Ito and Maruyama [7]). For example, based on the result mentioned in the text, the editorial (1989/6/16) of the influential *Nihon Keizai Shinbun* (*Japan Economic Paper*) argued that the Japanese distribution system was efficient. However, there are several conceptual problems in this interpretation (see Section 2.2).

²Specific examples will be given in TABLES 2, 3, and 4.

Second, in the distribution of investment and export goods, both the Japanese and U.S. ratios of the cost of distribution services to the final price have been generally stable over past three decades. In particular, the Japanese ratio is not always higher than the U.S. counterpart. Thus, the result is consistent with the view that there is no significant institutional rigidity in the distribution of investment and export goods which might raise the cost over years of economic growth.

Third, in contrast, the Japanese distribution of consumer goods shows a rapid increase in the ratio from 1965 to 1990 (though an increase between 1985 and 1990 is somewhat abated). The major source of this rapidly increasing cost is found in the retail sector, and the substantial increase is found in all product groups in this category. The result is consistent with the view that substantial institutional rigidity in the consumer-goods retail sector causes a sharp increase in the cost of distribution services compared with the producer's price in the case of consumer goods.

The organization of this chapter is as follows. In Section 2, the scope of the distribution system is clarified, since the scope is rather too narrow in previous studies. There, we show that the "distribution-margin ratio", that is, the percentage difference between the final price and the producer price can be considered as the ratio of the cost of distribution services to the final price. In Section 3, we estimate the distribution-margin ratio in Japan and the United States since 1963. The major findings are presented in this section. In Section 4, the cause of the rapidly increasing cost of distribution services is investigated informally by using sampling surveys about retail stores in Japan. we conclude this chapter in Section 5 with remarks about limitations of the chapter.

2. The Cost of Distribution Services

2.1. Scope of the Final-Goods Distribution System

It is important to define the distribution system at the outset, because the word is often used rather vaguely. We are concerned with the distribution system of final goods, and we define the (final-goods) distribution system as the system of distributing manufactured goods from producers to final customers. Thus, the distribution system consists of the wholesale trade sector, retail trade sector, and transportation sector.

Although transportation is often ignored in the discussion about the distribution system, transportation costs are a significant part of the cost of distribution services that buyers have to pay. Moreover, the line dividing wholesale, retail, and transportation sectors is vague and sometimes misleading. For example, if a retail company uses its own trucks to transport merchandise from a wholesaler's warehouse to its store, this activity is classified as retail service. However, if the retail company uses a trucking company, the same activity is now transportation

service. Thus, it is necessary to analyze the distribution system as a whole, rather than to investigate each sector separately. This chapter is, to our knowledge, the first attempt of this kind both in Japan and the United States.

However, this "broad" definition of the distribution system itself is in fact too narrow to account for actual distribution services supplied by many agents in industrialized countries. Specifically, this definition does not take into consideration informational services which manufacturers offer.

In order to provide consumers with detailed product information, to get consumers' demand information efficiently, and to process consumers' complaints on products smoothly, manufacturers incur a large cost. For example, it generally takes only about two weeks to deliver a new Toyota car to a consumer, even if she demands various options (body color, air conditioning, sun-roof, etc.) [see Miwa and Nishimura [11, Ch. 1]]. In order to process such vast consumer information efficiently, Toyota has been incurring almost 160 million dollars annually.³ This informational aspect of distribution services supplied by manufacturers is important in understanding trade practices in Japan.

Although distribution services offered by manufacturers is important to understand the distribution system, adequate disaggregate data are not available to include it in the following disaggregate analysis of distribution.⁴ These services are submerged into production activities of manufacturers, and it is very difficult to discern distribution activities from production ones in published statistics. Thus, we are obliged to focus on distribution services of wholesale, retail and transportation sectors in the following discussion, and to ignore those of manufacturers altogether.

2.2. Distribution-Margin Ratio As the Ratio of the Cost of Distribution Services to the Final Price

In this chapter, we follow the Ministry of International Trade and Industry [10], Maruyama *et al* [9] and Ito and Maruyama [7], using the distribution-margin ratio as a measure of the cost of distribution services from the viewpoint of final-goods buyers. Although there are several problems in this measure as explained later, this is the most widely-used macroeconomic measure of the cost of distribution services in the literature both in Japan and the United States.⁵

An example may help us to understand the concept of the distribution-margin ratio. Consider a following stylized story. A manufacturer produces a product in

³Here the rate of exchange is 1 dollar = 130 yen. A large part of its payment is related to distribution services just described, although they are intertwined with production.

⁴There is an attempt to include the cost of these distribution activities (especially advertising expenditure) of manufacturers into the cost of distribution services (which is defined below). See Japan Research Institute, *A Study of the Total Distribution Cost in the Final Goods Price*, (in Japanese), 1979. However, since information about the break down of these activities into product groups is not available, we do not pursue this line of research in this paper.

⁵For the U.S. literature, see Barger [1] and Bucklin [2].

its factory. In Japan, there are often three types of wholesalers existing between the manufacturer and the retailer in many distribution channels. A primary wholesaler buys the product at price $q_{1,W}$ at the manufacturer's factory, and asks a trucking company to transport it to its warehouse. The primary wholesaler pays $t_{1,W}$ to the trucking company. The secondary wholesaler buys the product at price $q_{2,W}$ at the primary wholesaler's warehouse, transports it to its warehouse using a trucking company, and pays $t_{2,W}$ to the trucking company. The tertiary wholesaler does the same: it buys the product at price $q_{3,W}$ at the secondary wholesaler's warehouse, and transports it to its warehouse by incurring the transportation cost $t_{3,W}$. Then, a retailer buys the product at price q_R at the tertiary wholesaler's warehouse, and asks a trucking company to transport it to its store. The retailer pays t_R to the trucking company. Finally, the retailer sells the product to the final-goods buyer at price p .

In this example, the primary wholesaler's cost of merchandise purchased for resale is $q_{1,W} + t_{1,W}$, so that the primary wholesaler's margin is $q_{2,W} - (q_{1,W} + t_{1,W})$. Similarly, the secondary and tertiary wholesalers' margins are, respectively, $q_{3,W} - (q_{2,W} + t_{2,W})$ and $q_R - (q_{3,W} + t_{3,W})$. The retailer's cost of merchandise is $q_R + t_R$, so that the retail margin is $p - (q_R + t_R)$. Consequently, the final-goods buyer's price p is decomposed into the manufacturer's factory price to the primary wholesaler, wholesale margins, retail margins, and transportation margins:

$$\begin{aligned}
 p = & q_{1,W} + \{q_{2,W} - (q_{1,W} + t_{1,W})\} + \{q_{3,W} - (q_{2,W} + t_{2,W})\} \\
 & + \{q_R - (q_{3,W} + t_{3,W})\} + \{p - (q_R + t_R)\} \\
 & + \{t_{1,W} + t_{2,W} + t_{3,W} + t_R\}
 \end{aligned}$$

That is, we have

$$\begin{array}{rcl}
 \text{Retail} & = & \text{Manufacturer's} \\
 \text{Price} & = & \text{factory price} + \text{Distribuiton} \\
 & & \text{Margins}
 \end{array}$$

where

$$\begin{array}{rcl}
 \text{Distribuiton} & = & \text{Wholesale} \\
 \text{Margins} & = & \text{Margins} + \text{Retail} + \text{Transportaion} \\
 & & \text{Margins} + \text{Margins}
 \end{array}$$

Then, the distribution-margin ratio and its components are defined as follows.

$$\text{Distribuiton-Margin Ratio} = \frac{\text{Distribution Maragins}}{\text{Retail Price}},$$

$$\text{Wholesale-Margin Ratio} = \frac{\text{Wholesale Maragins}}{\text{Retail Price}},$$

$$\text{Retail-Margin Ratio} = \frac{\text{Retail Maragins}}{\text{Retail Price}},$$

and

$$\text{Transportaion-Margin Ratio} = \frac{\text{Transportation Maragins}}{\text{Retail Price}}.$$

The distribution-margin ratio can be considered as a measure of the cost of distribution services compared with the producer's price, *if the quality of services offered by the distribution sector is the same*. We hereafter assume as the first approximation that for each product group we consider, the quality of distribution services does not significantly differ between periods which we examine in each country. However, since the services may differ among product groups and among types of final goods, we supplement aggregate analysis with disaggregate analysis based on products or groups of products in the following discussion.

The Ministry of International Trade and Industry [10], Maruyama *et al* [9] and Ito and Maruyama [7], go further, and assume that the distribution margin ratio measures not only the cost of distribution services but also the efficiency of the distribution system. However, it is confusing to use the distribution-margin ratio as the "efficiency" measure, because efficiency is usually attributed to no distortion and production efficiency. A distribution system which is technologically inefficient in producing distribution services may still have a low cost of distribution services (a low distribution-margin ratio) if the cost of operation is low (for example, due to low wages in the system).

In the following, we compare Japan and the United States. The implicit assumption here is that the quality of services is the same between Japan and the United States. However, few will believe that the quality of distribution services is no higher in Japan than in the United States.⁶ The bias from ignoring this quality difference will be discussed later in the disaggregate analysis of product groups.

2.3. Choice of Data: Problems in the Previous Studies

We must cover all types of distribution in order to get a correct distribution-margin ratio. Moreover, we must take account of possible difference among various product groups since services of the distribution sector may vary among them. There are several data problems in the previous studies mentioned above with these respects.

Maruyama *et al* and Ito and Maruyama.

Maruyama *et al* [9] use the *Census of Commerce* in Japan and the *Census of Wholesale and Retail Trades* in the United States. They calculate the aggregate "gross profit margin ratio" for wholesale and retail sectors, which is the difference between sales revenues and merchandise costs (with inventory adjustment) divided by the sales revenues. They find that around 1982-85

The Japanese aggregate gross profit margin ratio = 27.1%;

The U.S. aggregate gross profit margin ratio = 31.0%.

⁶For example, liquor stores deliver beer to doorsteps in Japan. Presale demonstrations are more common. Courtesy is more prevalent.

From this, they suggest that the Japanese cost is in fact lower than the U.S. cost.

Ito and Maruyama [7] use the *Basic Survey of Commerce Structure* in Japan and the *Capital Expenditure Survey* in the United States in the same period as Maruyama *et al*, and calculate the gross profit margin ratio for comparable 3 digit wholesale and 2 digit retail sectors. They find qualitatively the same pattern, although the ratios differ among product groups.⁷

However, there are various problems in their ratios. First, the *Census* and the *Basic Survey* do not cover transportation activities associated with distribution. Second, and more important, the Japanese *Census* excludes much of distribution activities of agricultural and other cooperative associations and government agencies. The effect of this omission is not trivial, since agricultural and other cooperative associations are major wholesale and retail stores in the rural areas of Japan, and the government engages in distribution activities in the case of some processed food (especially tobacco and rice).

Third, although the Japanese and U.S. *Censuses* and the U.S. *Expenditure Survey* carefully exclude firms' branches engaging in non-distribution activities,⁸ the Japanese *Basic Survey* include them.⁹ Since many firms in the distribution sector have branches engaging in non-distribution activities, the ratio based on the *Basic Survey* of Japan may not be comparable with the ratio based on the *Expenditure Survey* in the United States. Fourth, their ratios are aggregate ratios, and thus the possible difference between products is simply ignored. The disaggregate analysis of Ito and Maruyama still suffers from aggregation bias, since their "disaggregate" ratios are in fact the ones aggregated over consumer, investment, export, and intermediate goods.

Finally, there is a problem of double counting of wholesale sales that may arise due to the multi-layer wholesale system in Japan.¹⁰ To illustrate the point, consider the example in the previous section. The true wholesale-margin ratio is

$$\frac{\{q_{2,W} - (q_{1,W} + t_{1,W})\} + \{q_{3,W} - (q_{2,W} + t_{2,W})\} + \{q_R - (q_{3,W} + t_{3,W})\}}{p}$$

However, the gross profit margin ratio in Maruyama *et al* [9] and Ito and Maruyama [7] is

$$\frac{\{q_{2,W} - (q_{1,W} + t_{1,W})\} + \{q_{3,W} - (q_{2,W} + t_{2,W})\} + \{q_R - (q_{3,W} + t_{3,W})\}}{q_{2,W} + q_{3,W} + q_R}$$

⁷These numbers are popularized by the textbook on the Japanese economy written by one of the authors (see Ito [6]).

⁸They are based on establishments. Branches of firms whose primary activities are non-distributional are excluded from the data.

⁹The *Basic Survey* is based on actual firms, and all activities (no matter whether they are distribution-related or not) of their headquarters and branches are included in the data.

¹⁰For more detail analysis of these problems, see Nishimura and Tsubouchi [15]).

Since p is in general not equal to $q_{2,W} + q_{3,W} + q_R$, the gross profit margin ratio is different from the wholesale-margin ratio. In Japan, $q_{2,W} + q_{3,W} + q_R$ is much larger than p in many distribution channels (see *Census of Commerce, Distribution Channel Volume*, various issues), so that the gross profit margin substantially underestimates the true wholesale-margin ratio.

The only government statistics which cover all distribution activities are Input-Output Tables both in Japan and the United States. Moreover, Input-Output Tables are constructed to avoid the double counting of wholesale sales. Thus, although Input-Output Tables are not primary statistics, there is a good reason to rely on them both in Japan and the United States.

Ministry of International Trade and Industry.

The recent attempt to measure the cost of distribution services by the distribution-margin ratio based on Input-Output Tables is reported in the 1988 *White Paper* [10] of the Ministry of International Trade and Industry in Japan. The *White Paper* is concerned solely with the commerce (wholesale and retail) margin ratio, and ignores the transportation margin. Using 1981 Input-Output Tables in the Japan and the United States, the *White Paper* finds the following results for consumer goods.¹¹

The Japanese commerce-margin ratio = 29.78%

The U.S. commerce-margin ratio = 39.44%

Thus, the result is qualitatively the same as in Maruyama *et al* and Ito and Maruyama, showing that the Japanese ratio is lower than the U.S. ratio.

However, the ratios in the *White Paper* grossly under-estimate the Japanese commerce-margin ratio, and at the same time over-estimate the U.S. counterpart. The over-estimation of the U.S. ratio is partly due to the insufficient treatment of non-comparable imports of the United States in the analysis of the *White Paper*. In the U.S. tables, imports of products which do not have comparable domestic products are classified as non-comparable imports, while there is no such classification in Japan and such imports are classified to existing product groups. The *White Paper* excludes non-comparable imports of the United States in its calculation of the U.S. commerce-margin ratio, seemingly assuming the U.S. convention is the same as the Japanese one. Since the commerce-margin ratio is lower in non-comparable imports, the omission of them biases the U.S. ratio upward.

The major cause of the under-estimation of the Japanese ratio is insufficient data used in the 1981 Japanese Input-Output Tables, which are substantially less

¹¹The *White Paper* reports the ratio of the distribution margin to the producer's price, not retail price as defined in the text. The figures reported here are re-calculated from the ratios in the *White Paper*.

reliable intermediate-year tables than base-year tables. There is a tendency in Japanese data that intermediate-year tables under-estimate wholesale and retail margins, compared with base-year tables. For example, in 1985, the intermediate-year table under-estimates commerce margins by 17.55% compared with the base-year table.¹²

Base-Year Tables

Taking the above argument into account, we use the base-year Input-Output Tables in estimating the distribution-margin ratio for consumer goods, investment goods, and export goods, and for product groups within them.

However, it must be noted here that there still remains bias toward under-estimation of the Japanese commerce-margin ratio. The bias stems mainly from the Japanese classification convention concerning the repair service (it is included in the manufacturing sector) and wholesale branches of manufacturing firms (they are classified to the manufacturing sector).¹³ In the United States, both of them are excluded from the manufacturing sector.¹⁴

The inclusion of the repair service in the manufacturing sector reduces the distribution-margin ratio since the the distribution margins in the repair service are zero. Similarly, since the margins of wholesale branches of manufacturing firms are excluded from wholesale margins but included in manufacturers' price, the distribution margins are underestimated and the manufacturers' price is over-estimated. This implies the under-estimation of the distribution-margin ratio.

Moreover, one must also consider the effect of government-controlled distribution (tobacco and rice). Retail prices of rice and tobacco are in most part controlled by the government and their distribution is implicitly and explicitly subsidized in the period we study, so that the commerce-margin ratio for these two products based on published data is unbelievably low (for example, 5.7% for rice and 9.6% for tobacco in 1980). Since the expenditure on rice and tobacco is about the one tenth of the total consumer expenditure on products, the effect of the government controlled distribution is not trivial especially in the distribution of consumer products.¹⁵

Whereas the under-estimation bias due to the repair-service classification is corrected in the ratios presented in the next section, the biases due to the wholesale-establishment classification and the effect of government control are not corrected since we do not have sufficient data to correct them for entire period.¹⁶

¹²See Nishimura and Tsubouchi [14] for these and other sources of biases in using intermediate-year Input-Output Tables of Japan and the United States.

¹³Another source of bias is the treatment of scraps. See Nishimura and Tsubouchi [15] for details.

¹⁴However, there are minor exceptions.

¹⁵See Nishimura and Tsubouchi [14], [15] for details.

¹⁶It is possible to correct the bias in the aggregate ratios in 1980 and 1985. See Nishimura and Tsubouchi [14].

The remaining under-estimation bias must be kept in mind in interpreting the result presented below.

At this moment (November 1995), six sufficiently-detailed base-year Input-Output Tables are available in each country. (The base-year tables are called the *Benchmark Input-Output Accounts for the U.S. Economy* in the United States.) The base-years are 1965, 1970, 1975, 1980, 1985 and 1990 in Japan, and 1963, 1967, 1972, 1977, 1982 and 1987 in the United States.¹⁷

3. Cost of Distribution: Japan and the United States

3.1. Aggregate Ratios for Consumer, Investment, and Export Goods

The studies reviewed in the previous section are concerned mostly with the commerce (wholesale and retail) sector. However, as argued earlier, the distribution system must be analyzed as a whole, including transportation activities. Table 1 reports the commerce (wholesale and retail) margin ratios and transportation-margin ratios based on base-year Input-Output Tables both in Japan and the United States.

3.1.1. 1982-1985

Consider first the period of 1982-1985, the period with which previous studies are concerned. In the consumer-goods distribution, Table 1 shows that in this period, the distribution-margin ratio is quite similar between the two countries. Both the commerce and transportation-margin ratios are almost the same between Japan and the United States.

This result may suggest that the true Japanese ratio is lower than the official ratio, if the high level of services in the Japanese distribution sector is properly taken into consideration. However, on the contrary, the under-estimation bias due to the wholesale-establishment classification convention and the government control on some processed food which are mentioned in the previous section, implies that the true Japanese ratio is higher than the one reported here. These two tend to be cancelled out and the direction of the overall bias is ambiguous, and the bias is not likely to be large.

If we extend the analysis to the distribution of investment goods, the Japanese commerce-margin ratio is somewhat higher than the U.S. counterpart. But the difference is not so significant. In contrast, the commerce and transportation-margin ratios in the distribution of export goods are significantly lower in Japan than in the United States. Thus, the basic conclusion of previous studies that the Japanese ratio of the cost of distribution services to the final price is comparable

¹⁷Japan also has the 1960 base-year table, but it is not as reliable as in other base-year tables with respect to the distribution margins.

to the U.S. ratio or lower than that, still holds true in a broader framework of distribution.

3.1.2. Commerce-margin ratios in the entire sample period (1963-1985)

Table 1 also depicts the change in the distribution-margin ratio both in Japan and the United States after 1963. It shows a sharp difference between the distribution of consumer goods and that of investment and export goods.

Table 1 shows that the commerce-margin ratio in the Japanese consumer goods has been increased rapidly between 1965 and 1985. In contrast, the U.S. commerce-margin ratio exhibits no long-run trend in the whole period (1963-1982).

In the case of investment goods and export goods, the long-run movement in Table 1 shows that the ratios are stable for the entire sample period. One may point out the same upward trend in the commerce-margin ratio in the investment-goods distribution before 1980. However, the trend is at most weak, and the ratio actually decreases during the 1980-1985 period. Thus, there is no clear upward trend in Japan. Similarly, there is no trend in the commerce-margin ratio for investment goods in the United States. It decreases from 1963 to 1967, increases from 1972 to 1977, and then decreases again. As for the distribution of export goods, the commerce-margin ratios do not have clear trend both in Japan and in the United States.

3.1.3. The transportation-margin ratio in the entire sample period (1963-1985)

One clear difference between Japan and the United States is found in the long-run movement of the transportation-margin ratio. The Japanese ratios are stable around 1.7% for consumer goods, around 1.3% for investment goods, and around .9% for export goods. In contrast, the transportation margin ratio in the United States shows a clear decline for all three goods.

Although the cost of transportation does not increase for the entire sample period, the performance of the Japanese transportation might be disappointing, if the Japanese transportation sector is compared with the U.S. transportation sector. The stability of the Japanese transportation-margin ratio is in sharp contrast with a significant improvement in the transportation-margin ratio in the U.S. distribution system. In fact, the U.S. transportation-margin ratio for consumer goods decreased from 3.9% to 1.6% in 19 years, and this decrease is the major cause of the declining distribution-margin ratio in the United States.

Much of the decline in the U.S. transportation-margin ratios in the 1970s and 80s is due to the deregulation of transport industries. However, the decline starts well before the deregulation. This suggests the effect of technological and managerial advancement in the U.S. transportation, in addition to the effect of

the deregulation. In contrast, since the transportation sector is one of the most heavily regulated industry in Japan, the transportation sector is slow in adopting the technological and managerial advancement [Chujo and Yamauchi [3]].

3.2. Commerce and Transportation Margin Ratios for Product Groups

As explained earlier, the aggregate ratio may be misleading since the product mix changes. We decompose the distribution of consumer goods, investment goods, and export goods into fifteen product groups in each category. (See the APPENDIX for a brief summary of the procedure).

In TABLES 2 and 3, commerce and transportation-margin ratios are shown for selected product groups in the distribution of investment-goods and export-goods. Since the space is limited, these tables show only product groups of which their share exceeds five per cent of the total expenditure on each category of goods in all base years in both countries.¹⁸

These tables show three characteristics of investment-goods and export-goods distribution. First, the commerce and transportation-margin ratios are rather uniform among product groups. Second, the long-run movement of commerce and transportation-margin ratios are the same as that of the aggregate margin ratios. Third, there is no significant difference in their long-run movement between Japan and the United States.

When we investigate disaggregate consumer-goods distribution-margin ratios, the same peculiarity as in the aggregate distribution margin ratio shows up again. TABLE 4 compares Japan and the United States in product groups of which the expenditure share exceeds five per cent in at least one base year in both countries.

This table tells basically the same story as in Table 1, although the difference among product groups is very large. First, let us compare Japan and the United States around 1982. Around 1982, the commerce-margin ratio in the Japanese processed-food distribution is only two thirds of the U.S. ratio. The Japanese ratio in processed-food distribution is under-estimated because of the government involvement in rice and tobacco distribution. However, even after excluding rice and tobacco, the commerce-margin ratio of processed-food distribution in Japan is 28.38% in 1980, which is still substantially lower than that in the United States [see Nishimura and Tsubouchi [14]].

In contrast, the commerce-margin ratio of the Japanese motor-vehicle distribution is 1.5 times as high as the U.S. ratio. However, the difference in services offered by automobile dealers between the two countries must be taken into consideration, and the difference in the quality-adjusted commerce-margin ratio between the two countries is not as pronounced as the raw ratio suggests. Salespersons of automobile dealers in Japan make many house calls and provide customers with various services. For example, in the Tokyo area where it is now

¹⁸The tables which contain all product groups are available from the author upon request.

very difficult to find a parking lot, these salespersons search for a parking lot on behalf of new customers.¹⁹

Next, consider the long-run movement in the commerce and transportation margin ratios for each product group in the consumer-goods distribution reported in TABLE 4. Like the aggregate ratios, the product-group ratios also show a substantial increase in the entire sample period. Thus, the product-group ratios show the same characteristics as the aggregate ratio.

3.3. Source of Increasing Commerce Margin Ratio in the Consumer Goods Distribution

Next, let us identify the main source of the rapid increase in the cost of the Japanese consumption-goods distribution. Table 5 breaks down the commerce-margin ratio into two components: wholesale-margin, and retail-margin ratios.

Consider first the wholesale-margin ratio. It is evident from Table 5 that the ratio is stable over time. The ratio was 9.2% in 1965 and 8.3% in 1985. The ratios in the intermediate years did not fluctuate.

As was explained earlier, the multi-layer wholesale system and the existence of many small wholesalers are often pointed out as one of the sources of the increasing cost of the Japanese distribution system. However, from the viewpoint of buyers, the cost of wholesale services is stable. Thus, the wholesale sector is not the main source of the increasing cost of the consumer-goods distribution.

In contrast, the retail-margin ratio shows a rapid increase, and it is the major source of the increasing cost of the consumer-goods distribution. The ratio was only 15.2% in 1965, but increased steadily and rapidly, by two to three points in every five years. In 1985, the ratio reached 26.8%.

Although the retail-margin ratio increases steadily in the Japanese consumer-goods distribution, it does not mean that the increase is uniform among product groups. The latter part of Table 5 shows the movement of the retail-margin ratio for specific product groups. Here we report the ratio of product groups on which Japanese consumer-goods buyers pay more than five per cent of their budget.

It is evident from this table that the increase in the retail-margin ratio differs considerably between product groups and periods. Agricultural products (fresh vegetables, raw fish and livestock) shows a steady increase in all periods. However, the ratio of processed food (including liquor and tobacco) increases rapidly from 1965 to 1970, but remains stable thereafter. The increase in the retail-margin ratio between 1970 to 1975 can be traced to a hike in the ratio of petroleum products (mostly gasoline and LPG) and electric equipment (consumer electronics). From 1975 to 1980, the retail margin of motor vehicles and

¹⁹These drastic difference between the two countries fails to show up in the study of Ito and Maruyama (1992), since they deal with data that aggregate consumer goods, investment goods, export goods and intermediate goods.

textile and fabrics shows a rapid increase. In the period 1980 to 1985 the retail-margin ratio in the chemical products (pharmaceutical and cosmetic products) distribution is the dominant factor in the overall increase.

4. Sluggish Productivity Growth due to Institutional Rigidity as a Source of the Rapidly Increasing Cost of Distribution Services

It is often speculated that, since various institutional factors prevent retail stores from adjusting economic conditions smoothly, labor productivity growth is sluggish and lags to the increase in wages. Thus, the wage/sales ratio rapidly increases as real wages increase because of the tight labor market during the period which we consider. This increase in the wage/sales ratio causes an increase in the cost of the services which retail stores provide.

In the following, we assess this explanation. Unfortunately, Input-Output Tables do not provide us with information about the breakdown of distribution margins into payroll, other operating expenses (including rents, payments for intermediate goods, etc), and profit, although these data are necessary for assessing the explanation. The only published data that contain the breakdown information is the *Basic Survey of Commerce Structure and Activity*, conducted and published by the Ministry of International Trade and Industry, which is used in Ito and Maruyama (1992). However, as explained in Section 2.2, there are several shortcomings in this data set, which must be taken into consideration in using this data set. Moreover, consistent data are available only for 1973, 1979, and 1986, and retail firms in this data set are those having more than five workers. Because of this lack of data, we are confined into an informal, and indirect analysis.

Taking these shortcomings in mind, let us look at Table 6. We compare 1973 (the actual survey period is from June 1, 1972 to May 31, 1973) and 1979 (the survey period is from May 1, 1978 to April 30, 1979).

Both survey years are in the period of economic expansion, and in a similar phase of business cycle (in most of these periods, the discount rate does not change). Thus, the effect of labor hoarding during business cycles is small when comparing the two survey years, and the labor productivity difference between the two years should have information about the long-run change.

Table 6 shows gross-margin/sales ratios for 1973 and 1979 for retail firms and their breakdowns, which are based on the *Survey*.²⁰ Here the following definitions are used.

²⁰Note that the definition of sales is different between the 1973, 1979, and 1986 Surveys. The figures reported in the table are taken from Nishimura and Tsubouchi [15], where necessary corrections are made.

Gross Margin = Sales – Merchandise Purchased for Resale

$$\begin{aligned}
 &+ \begin{array}{c} \text{Beginning-of-period} \\ \text{Inventories} \end{array} + \begin{array}{c} \text{End-of-period} \\ \text{Inventories} \\ \text{Other} \end{array} \\
 &= \text{Payroll} + \text{Profit} + \text{Operating} \\
 &\quad \quad \quad \text{Expenses}
 \end{aligned}$$

This table shows essentially the same result as in the previous tables. The gross-margin/sales ratio increases, although the rate of increase is substantially smaller compared with that of consumer-goods distribution in Table 1. This is partly due to aggregation of all distribution in the *Survey*, and partly due to the mixing of distribution activities with other activities by the Survey which was explained in Section 2. Both factors made the sharp increase in the consumer-goods retail-margin ratio being "diluted" in the ratio based on the *Survey*.

Table 6 also shows the breakdown of the change in the gross-margin/sales ratio. It is evident from this table that an increase in the payroll/sales ratio explained almost a half of the increase in the gross-margin/sales ratio. In fact, Table 7 shows that the sluggish labor productivity growth is behind the increase in the increasing retail-margin ratio, as suggested in the conventional view. Although the rate of increase in real wages is lower in retail trade than in manufacturing, the productivity growth is much lower in retail trade between 1973 and 1979. The real-wage increase dominates the productivity growth, and thus raises the cost of distribution services. This result suggests that the sluggish labor productivity growth significantly contributes to the increase in the cost of distribution services.

5. Concluding Remarks

This chapter examines two conflicting views about the Japanese distribution system. In one view, the cost of distribution services has been increased in recent years due to institutional rigidity in the system and it is now the major cause of higher retail prices in Japan than in the United States. In the other view, there is no rigidity in the system. The cost is neither increasing nor making Japanese retail prices higher.

There are three major findings. First, the ratio of the cost of distribution services to the final price is comparable between Japan and the United States, suggesting that the distribution sector is not the major culprit of high retail prices in Japan. Second, in the distribution of investment and export goods, there is no tendency for the Japanese cost to increase over years. Nor it is higher than the U.S. counterpart. Thus, the result is consistent with the view that there is no rigidity. In contrast, the distribution of consumer goods shows a rapid increase

in the cost of distribution services. The result is consistent with the view that institutional rigidity causes an increase in the cost of distribution services. The major source of this rapidly increasing cost is found in the retail trade sector.

In this chapter, we have been concerned mostly with the macroeconomic level and movement of the distribution-margin ratios, which measure the cost of distribution services compared with the producer's price. The major concern of this chapter is to make the relevant data in Japan and the United States as comparable as possible, to correct biases contained in the previous studies, to broaden the scope of the distribution system, and to estimate the distribution-margin ratios. In this respect, the scope of this chapter is limited to be descriptive. To find factors behind two findings described above, (1) stable distribution-margin ratios in investment-goods and export-goods distribution on the one hand and (2) a rapid increase in the consumer-goods retail-margin ratios on the other hand, is an important agenda for future research about the Japanese distribution system.

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Appendix

A.1. CONSTRUCTION OF DISTRIBUTION MARGIN RATIOS

In this appendix, we briefly explain the way the distribution margin ratios reported in TABLES 1 through 5 are constructed from base-year Input-Output

Tables in Japan and the United States. A more detailed account of the procedure, including the way distribution margins are estimated in compiling the Japanese Input-Output Tables, is found in Nishimura and Tsubouchi [15].

Base-year input-output tables (which is called the Benchmark Input-Output Accounts in the United States) contain information about producers' price, wholesale and retail margins, transportation margins, and purchasers' price for transactions of products between sectors. The distribution margin ratios are constructed from this information, assuming that purchasers' price of final-goods buyers is the final retail price, and that producers' price is the manufacturers' factory price.

We consider the three types of final-goods buyers: consumer-goods buyers, investment-goods buyers, and export-goods buyers. Their transactions are further disaggregated into fifteen product groups.

Since classifications of products differ considerably between base-years and between Japan and the United States, to get a consistent and fine classification over years and between two countries is impossible. Moreover, the procedure to estimate the Japanese wholesale and retail margins implies that the more disaggregate the margin data are, the less reliable they are. It is often (though informally) argued that the margin data are reliable if products are disaggregate into fifteen to twenty product groups (Nishimura and Tsubouchi [15]). The choice of disaggregation of products into fifteen groups is based upon this information.

In the remainder of this appendix, we explain the choice of data, and the way the products are classified.

A.2. EXPENDITURES OF FINAL-GOODS BUYERS

Expenditures of final-goods buyers are identified in the following way.

1. Consumer-goods buyers.

Japan: Kakei Shouhi Shishutu (Household consumption expenditures).

United States: Personal consumption expenditures.

2. Investment-goods buyers.

Japan: Minkan Sou Kotei Shihon Keisei (Gross private fixed investment).

United States: Gross private fixed investment.

3. Export-goods buyers.

Japan: Yushutsu (Exports).

United States: Exports.

A.3. CLASSIFICATION OF 15 PRODUCT GROUPS

Products are classified into fifteen product groups. Since the classification of products in input-output tables differ between base years, we report the fifteen-product-group classification based on the 1985 classification in Japan, and the 1982 classification in the United States. The fifteen-product group classification in other base years is found in Nishimura and Tsubouchi [15].

Here, the Japanese number is the row code of classification in 1985 Input-Output Tables. The U.S. number is the two-digit commodity number in 1982 Input-Output Tables.

1. AGRICULTURAL PRODUCTS

Japan: from 0111 to 0312 (excluding 0131).

United States: 1, 2, 3

2. MINING PRODUCTS

Japan: from 0611 to 0731, and 1119-011.

United States: 5, 6, 7, 8, 9, 10.

3. PROCESSED FOOD

Japan: from 1111 to 1141 (excluding 1119-011).

United States: 14, 15.

4. FABRIC AND TEXTILE PRODUCTS (EXCLUDING APPAREL)

Japan: from 1511 to 1519 and 1529.

United States: 16, 17, 19.

5. PULP, PAPER, AND WOOD PRODUCTS

Japan: from 1611 to 1829.

United States: 20, 21, 22, 23, 24, 25.

6. CHEMICAL PRODUCTS

Japan: from 2011 to 2079.

United States: 27, 29, 30.

7. PETROLEUM PRODUCTS

Japan: from 1611 to 1829.

United States: 31.

8. GLASS, STONE, AND CLAY PRODUCTS

Japan: from 2511 to 2599.

United States: 35, 36.

9. PRIMARY IRON, STEEL, AND NONFERROUS METAL PRODUCTS

Japan: from 2611 to 2722.

United States: 37, 38.

10. METAL PRODUCTS

Japan: from 2811 to 2899.

United States: 39, 40, 41, 42.

11. MACHINERY AND EQUIPMENT

Japan: from 3011 to 3112, 3541-021, and 3611-031 (excluding 3032).

United States: 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

12. ELECTRIC EQUIPMENT

Japan: from 3211 to 3432 (excluding 3432).

United States: 53, 54, 55, 56, 57, 58.

13. MOTOR VEHICLES AND OTHER TRANSPORTATION EQUIPMENT

Japan: from 3511 to 3629 (excluding 3541-021, 3611-031, and 3551).

United States: 59, 60, 61.

14. SCIENTIFIC INSTRUMENTS AND PHOTOGRAPHIC EQUIPMENT

Japan: from 3711 to 3719 (excluding 3719-101).

United States: 62, 63.

15. OTHER PRODUCTS (INCLUDING APPAREL)

Japan: 1521, 1522, 1911, from 2211 to 2412, and from 3911 to 3919.

United States: 13, 18, 26, 32, 33, 34, 64.

Table 1:
Commerce (Wholesale and Retail) and Transportation Margin Ratios
In Japan and the United States: Types of Final Goods

BASE YEAR Japan:	1965	1970	1975	1980	1985	1990
BASE YEAR U.S.:	1963	1967	1972	1977	1982	1987
1. Consumer goods						
	<i>Japan</i>					
Commerce(%)	24.4	27.4	30.9	33.0	35.1	35.9
Transportation(%)	2.0	1.5	1.7	1.9	1.6	1.9
	<i>U.S.</i>					
Commerce(%)	35.3	37.5	36.3	35.7	35.5	37.2
Transportation(%)	3.9	3.1	2.3	1.8	1.7	1.7
2. Investment goods						
	<i>Japan</i>					
Commerce(%)	10.7	14.6	16.0	17.2	15.0	18.5
Transportation(%)	1.4	1.0	1.6	1.1	1.0	1.3
	<i>U.S.</i>					
Commerce(%)	13.0	10.9	11.4	14.9	13.3	13.6
Transportation(%)	1.7	1.5	1.4	1.2	1.2	1.2
3. Export goods						
	<i>Japan</i>					
Commerce(%)	na	6.0	4.5	4.9	6.8	4.7
Transportation(%)	na	1.0	0.9	0.9	0.8	1.1
	<i>U.S.</i>					
Commerce(%)	6.9	7.5	7.6	9.7	9.4	9.5
Transportation(%)	4.7	4.1	4.3	3.0	3.7	3.1

Table 2:
Investment Goods: Selected Product Groups

Japan:	1965	1970	1975	1980	1985	1990
U.S.	1963	1967	1972	1977	1982	1987
Machinery and equipment	<i>Japan</i>					
Expenditure share (%)	(37.1)	(43.5)	(41.9)	(37.4)	(39.7)	(39.5)
Commerce(%)	6.1	15.1	15.2	15.3	15.2	17.7
Transportation(%)	1.7	1.1	1.4	1.2	1.0	1.2
	<i>U.S.</i>					
Expenditure share(%)	(44.5)	(43.6)	(37.8)	(39.7)	(39.1)	(36.1)
Commerce(%)	12.6	10.8	9.6	19.3	16.3	18.1
Transportation(%)	1.7	1.3	1.3	1.0	0.9	1.0
Electric equipment	<i>Japan</i>					
Expenditure share(%)	(15.8)	(21.5)	(23.8)	(24.8)	(31.0)	(29.2)
Commerce(%)	7.8	11.6	13.6	13.3	15.3	17.7
Transportation(%)	1.2	0.8	1.7	1.1	0.8	1.3
	<i>U.S.</i>					
Expenditure share(%)	(13.9)	(12.2)	(12.1)	(13.8)	(16.7)	(11.5)
Commerce(%)	6.0	5.3	6.7	8.6	8.3	10.3
Transportation(%)	1.1	1.0	1.2	0.7	0.6	0.9
Motor vehicles and other transportation equipment	<i>Japan</i>					
Expenditure share(%)	(37.8)	(26.0)	(21.2)	(24.3)	(17.6)	(19.7)
Commerce(%)	16.0	14.8	17.2	21.5	14.2	21.2
Transportation(%)	1.0	0.8	2.1	0.9	1.2	1.1
	<i>U.S.</i>					
Expenditure share(%)	(27.3)	(31.2)	(35.2)	(30.7)	(24.5)	(28.0)
Commerce(%)	13.4	11.0	14.5	11.7	10.3	6.4
Transportation(%)	1.9	1.8	1.6	1.9	2.4	2.0

Table 3
Export Goods: Selected Product Groups

Japan:	1965	1970	1975	1980	1985	1990
U.S.	1963	1967	1972	1977	1982	1987
Machinery and equipment						
	<i>Japan</i>					
Expenditure share (%)	(7.2)	(10.4)	(12.1)	(14.3)	(14.3)	(17.0)
Commerce(%)	3.8	4.1	3.9	4.0	6.6	5.2
Transportation(%)	0.6	1.1	1.0	1.2	0.6	0.8
	<i>U.S.</i>					
Expenditure share(%)	(17.4)	(18.4)	(18.7)	(18.1)	(18.2)	(15.7)
Commerce(%)	8.5	8.2	9.5	14.4	14.2	14.1
Transportation(%)	1.9	1.3	1.2	1.0	1.0	1.6
Electric equipment						
	<i>Japan</i>					
Expenditure share(%)	(9.3)	(13.9)	(11.9)	(17.9)	(25.6)	(30.0)
Commerce(%)	3.7	8.8	6.9	6.6	8.8	5.9
Transportation(%)	0.4	0.3	0.3	0.4	0.3	0.8
	<i>U.S.</i>					
Expenditure share(%)	(5.8)	(6.8)	(7.7)	(8.4)	(9.0)	(10.6)
Commerce(%)	7.2	6.1	7.5	10.1	9.8	10.5
Transportation(%)	1.3	0.8	1.0	0.6	0.7	1.0
Motor vehicles and other transportation equipment						
	<i>Japan</i>					
Expenditure share(%)	(15.1)	(18.7)	(26.3)	(26.8)	(29.0)	(25.8)
Commerce(%)	2.1	2.9	2.8	3.6	6.0	1.4
Transportation(%)	0.1	0.2	0.2	0.3	0.6	1.2
	<i>U.S.</i>					
Expenditure share(%)	(11.2)	(14.4)	(16.6)	(17.4)	(14.2)	(21.7)
Commerce(%)	3.4	10.1	5.3	7.0	4.2	3.7
Transportation(%)	1.5	1.6	1.8	2.4	1.8	1.7

Table 4:
Consumer Goods: Selected Product Groups

Japan:	1965	1970	1975	1980	1985	1990
U.S.	1963	1967	1972	1977	1982	1987
Processed food (rice, meat, other food and kindred products, and tobacco)						
	<i>Japan</i>					
Expenditure share (%)	(44.2)	(43.0)	(42.2)	(40.0)	(41.0)	(37.9)
Commerce(%)	18.4	24.4	24.3	24.3	25.7	29.0
Transportation(%)	1.6	1.7	1.8	2.6	2.2	2.3
	<i>U.S.</i>					
Expenditure share(%)	(39.8)	(39.4)	(32.3)	(31.9)	(31.2)	(29.1)
Commerce(%)	33.5	35.2	30.4	33.6	33.6	33.5
Transportation(%)	1.4	1.4	2.0	1.7	1.6	1.5
Electric equipment (household appliances, radio, TV and communication equipment)						
	<i>Japan</i>					
Expenditure share(%)	(4.9)	(6.3)	(4.8)	(5.1)	(6.4)	(8.1)
Commerce(%)	29.3	28.0	37.1	39.0	39.2	33.4
Transportation(%)	1.2	0.9	1.1	0.8	0.7	1.2
	<i>U.S.</i>					
Expenditure share(%)	(4.4)	(5.2)	(5.7)	(5.5)	(4.7)	(5.0)
Commerce(%)	35.4	35.9	41.3	40.4	41.0	44.2
Transportation(%)	1.9	1.5	1.4	0.9	1.1	1.0
Motor vehicles and other transportation equipment (motor vehicles and parts)						
	<i>Japan</i>					
Expenditure share(%)	(1.8)	(2.0)	(3.4)	(3.9)	(5.4)	(9.2)
Commerce(%)	22.2	19.4	24.4	33.5	38.6	39.8
Transportation(%)	1.0	1.0	1.1	0.4	1.2	1.0
	<i>U.S.</i>					
Expenditure share(%)	(9.7)	(7.8)	(11.5)	(11.7)	(8.7)	(15.3)
Commerce(%)	18.3	16.6	20.9	20.2	21.8	21.0
Transportation(%)	2.0	2.0	2.0	2.3	2.6	1.9

Table 5:
Japanese Wholesale and Retail Margin Ratios for Consumer Goods

Year	1965	1970	1975	1980	1985	1990
1. Wholesale and retail margin ratios						
Wholesale (%)	9.2	9.4	9.6	10.1	8.3	10.8
Retail (%)	15.2	18.0	21.3	23.0	26.8	25.0
2. Retail margin ratios of selected product groups						
Agricultural products (livestock, other agricultural, and fishery products)						
(Expenditure share, %)	(13.4)	(12.4)	(11.0)	(10.3)	(8.3)	(6.8)
	14.8	18.1	20.6	22.1	28.6	24.7
Processed food (rice, meat, other food and kindred products, and tobacco)						
(Expenditure share,%)	(44.2)	(43.0)	(42.2)	(40.0)	(41.0)	(37.9)
	12.9	18.6	17.5	17.6	19.8	19.9
Fabrics and textile goods (excluding apparel)						
(Expenditure share,%)	(10.6)	(9.7)	(6.6)	(5.7)	(5.2)	(4.7)
	19.5	18.6	21.5	27.8	28.7	28.9
Chemical products (drugs, soap, and toilet preparations)						
(Expenditure share,%)	(3.9)	(4.4)	(3.6)	(3.8)	(4.9)	(4.5)
	16.3	16.0	23.0	22.0	37.8	32.5
Petroleum product (gasoline)						
(Expenditure share,%)	(1.6)	(2.0)	(5.4)	(7.1)	(5.4)	(3.9)
	12.8	12.5	30.7	24.8	24.4	20.3
Electric equipment (household appliances, radio, TV and communication equipment)						
(Expenditure share,%)	(4.9)	(6.3)	(4.8)	(5.1)	(6.4)	(8.1)
	17.9	17.1	26.8	30.1	30.5	22.6
Motor vehicles and other transportation equipment (motor vehicles and parts)						
(Expenditure share,%)	(1.8)	(2.0)	(3.4)	(3.9)	(5.4)	(9.2)
	na	na	16.8	28.0	31.9	24.9

**Table 6: Gross-Margin / Sales Ratio And Its Components:
Retail Firms With More Than Five Employees**

	Level (%)				Change (point)	
	1973	1979	1986	1992	1973-1979	1986-1992
Gross-margin / Sales	24.10	26.92	27.09	28.10	+2.82	+1.01
Profit / Sales	5.61	6.17	5.29	7.82	+0.56	+2.53
Payroll / Sales	9.26	10.61	10.95	10.82	+1.35	-0.13
Other / Sales	9.23	10.14	10.86	9.45	+0.91	-1.41

Source: Basic Survey of Commerce Structure and Activity, Various Issues.

Table 7:
Annual Growth Rate Of Labor Productivity and Wage / Sales Ratio:
Retail Firms with More Than Five Employees
vs.
Manufacturing Establishment

		(%)	
		1973-1979	1973-1979
Labor Productivity			Wage / Sales Ratio
Retail firms	0.42		Retail firms
			2.29
Manufacturing establishments	4.40		Manufacturing establishments
			0.10