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OF JAPAN AND THE UNITED STATES:
A COMPARATIVE STUDY
FROM THE VIEWPOINT OF CONSUMERS**

by

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**THE DISTRIBUTION SYSTEM
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ABSTRACT

This paper assesses two conflicting views about the Japanese distribution system: one stressing its inefficiency, and the other emphasizing its high performance for consumers. Using the distribution-margin ratio, I compare the Japanese system with the U.S. counterpart.

I find that the Japanese ratio for consumer goods and investment goods was not different from the counterpart of the United States around 1980, which suggests the same performance between the two countries. However, the Japanese ratio was rapidly increasing while the U.S. ratio was stable. Thus, in 1990, the Japanese ratio was likely to be significantly higher than the U.S. counterpart, suggesting poor performance of the Japanese system. A persistent increase in the retail margin ratio for consumer goods was the major source of this rapid increase. I also examine possible causes of this deterioration of performance.

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1. INTRODUCTION: "PERFORMANCE" OF THE JAPANESE DISTRIBUTION SYSTEM

The Japanese distribution system attracted much attention in recent years both in Japan and in the United States. This growing interest was partly due to the importance of the distribution sector relative to the manufacturing sector in the Japanese and the U.S. economies. Table 1 indicates this point. The wholesale and retail trade sectors in the Japanese distribution system increased their weight in the nominal GDP and in employment over last 30 years. Their share in nominal GDP increased from 12.2% in 1960 to 14.6% in 1985.¹ By contrast, the manufacturing sector's importance gradually declined from 36.4% in 1960 to 31.8% in 1985. We can find the same trend in the share in employment. The wholesale and retail trade sectors' share in employment increased from 17.3% in 1970 to 19.2% in 1985, while the manufacturing's share declined from 28.8% to 26.7%. If we look at the United States, the importance of the distribution sector is all the more apparent. Thus, in order to forecast the future of the economy, it is absolutely necessary to investigate how the distribution system will be shaped in the near future.

Another source of the growing interest in the Japanese distribution system is the concern about whether the Japanese distribution system is efficient or not, compared with the efficiency of the Japanese manufacturing sector and also compared with the efficiency of other countries' distribution system. Although the Japanese manufacturing sector is considered as one of the most efficient in the world, it has been long debated whether the Japanese distribution system is efficient or not.

On one hand, the Japanese distribution system was criticized as being inefficient. For example, the 1988 OECD Report on the Japanese Economy stated that the Japanese distribution system was inefficient, and that

various factors causing the inefficiency should be removed in order to improve the welfare of Japanese consumers. The argument was often based on casual observation that many Japanese consumer products, such as cameras and VCRs, were sold cheaper in New York City than in Tokyo. Another example was that European brand goods such as Louis Vitton and Hermes were sold in Japan at an extraordinary premium. Such price differential between home and abroad was often attributed to the inefficiency of the Japanese distribution sector. The inefficiency argument became conventional wisdom, and the "modernization" or "rationalization" of the distribution sector was one of the aims of many government policies in this sector (see, for example, Kuribayashi (1991)).

On the other hand, a strong counter-argument recently emerged in Japan. This counter-argument stressed that the Japanese distribution system was at least as efficient as most OECD countries including the United States, and in some cases more efficient than those countries. Examples included the 1988 White Paper of the Ministry of International Trade and Industry and the 1989 White Paper of Economic Planning Agency. Maruyama et al. (1989) and Ito and Maruyama (1992) presented basically the same argument as the two White Papers. These studies used various government statistics of Japan and the United States, and showed that the difference between Japan and the United States was not as much significant as people, including economists, often believed. They argued that, although there were some isolated inefficient distribution channels as demonstrated in the home-abroad-price-differential examples, the Japanese distribution system was as a whole as efficient as other countries' distribution system. Based on these arguments, the editorial (1989/6/16) of the influential Nihon Keizai Shinbun

declared that the inefficiency argument was unfounded and not based on data.²

The purpose of this paper is, first, to measure the performance of the distribution system from the clear viewpoint of consumers, and second, to assess these conflicting views about the efficiency of the Japanese distribution system, relying on this measure. In Section 2, I clarify the scope of the distribution system, and proposes one criterion of assessing the performance of the distribution system from the viewpoint of consumers. Then, I examine arguments stressing the inefficiency of the Japanese distribution system, and argue that they are mostly concerned with the performance of the distribution system from the viewpoint of distribution-sector firms, not of consumers.

In Section 3, I show that the ratio of the margin of the distribution sector to purchasers' price, which is sometimes called the "distribution-margin ratio", can be considered as one measure of the performance of the distribution system. In this section, I examine the efficiency arguments, which relied on the distribution-margin ratio or the like. Although there were several problems in the data that proponents of these arguments used to support their positions, I argue that their conclusion still held true qualitatively at least before 1980. That is, the performance of the Japanese distribution system was as good as, and even better than the U.S. counterpart before 1980. However, the performance of the Japanese distribution system was rapidly deteriorating since 1960, especially in the distribution system of consumer goods. If this tendency was taken into consideration, it was quite likely that the performance of the Japanese distribution system in 1990 was significantly lower than the U.S. counterpart.

In Section 4, I examine the cause of this rapid deterioration in the performance of the Japanese distribution system. I investigate three possible macroeconomic explanations: the first stressing productivity differentials between manufacturing and distribution sectors, the second emphasizing the effect of government regulations, and third pointing out the high urban rents. I show in this section that the first one roughly accounted for more than half of the reported increase in the consumer-goods distribution margin ratio, and that the other two had little explanatory power. However, almost half of the increase was still unaccountable, suggesting that commodity-specific factors played a significant role in increasing the retail margin ratio. Finally, Section 5 discusses the limitation of this study and suggests topics for further research.

2. PERFORMANCE OF THE DISTRIBUTION SYSTEM: FROM THE VIEWPOINT OF BUYERS

2.1. The Scope of the Distribution System

It is important to define the distribution system at the outset, because the word is often used rather vaguely. I define the distribution system as the system of distributing manufactured goods from producers to consumers. Thus, the distribution system is composed of the wholesale trade sector, retail trade sector, and transportation sector.

Although transportation is often ignored in the efficiency discussion about the distribution system, transportation costs consist of a significant part of distribution costs 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 paper is, to my 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 service performed by many agents in industrialized countries. For example, the above definition of distribution is based on transportation of commodities, and ignores informational aspects of distribution. Specifically, this definition does not take into consideration informational service that 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 (1991: 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 service performed by manufacturers is important in understanding trade practices in Japan (see Miwa and Nishimura (1991: Ch.1)).

Although distribution service offered by manufacturers is important to understand the distribution system, I do not have adequate data about it. This service is usually submerged into production activities of manufacturers, and it is usually very difficult to discern distribution

activities from production ones in published statistics. Thus, I am obliged to focus distribution service of wholesale, retail and transportation sectors in the following discussion, and to ignore those of manufacturers altogether.

2.2. A criterion about the performance of the distribution sector

In this paper, I propose one criterion about the performance of the distribution sector which is based on the viewpoint of buyers. The natural criterion of the performance for buyers is the relative price of distribution service offered by firms in the distribution sector. Suppose that the quality of distribution service is the same and manufacturers' shipping price is also the same. Then, the lower the relative price of distribution service is, the less expensive the price of goods is that buyers have to pay to firms in the distribution sector. Thus, from the viewpoint of buyers, the performance of the distribution sector is better if the relative price of its distribution service is lower.

Using this criterion about the performance of the distribution sector, I examine the efficiency arguments and the inefficiency ones mentioned in the INTRODUCTION in the following two sections.

2.3. The Conventional Inefficiency Argument: Efficiency from the Viewpoint of Distribution-Sector Firms

Let me consider the inefficiency argument. I briefly discuss three major arguments, and I show that the conventional inefficiency arguments are based on the efficiency criterion from the viewpoint of distribution sector firms, and that they do not necessarily imply poor performance of the distribution sector from the viewpoint of buyers.⁴

First, it is argued that (1) many small (family-run) establishments survived thanks to various government regulations, (2) these establishments could not exploit economies of scale, and thus (3) they were inefficient. Table 2.1 shows the difference between Japan and the United States. The difference is clear especially in retail trade. The number of workers per establishment in Japan was only a half of that in the United States in 1982. There were almost twice as many retail establishments per 1000 residents in Japan as in the United States. These figures were relatively stable over years.

In the retail trade sector, it is argued that small retail stores survived because of Large-Scale Retail Stores Law (DAITEN HO). Administrative guidance (GYOUSEI SHIDOU) accompanying Large-Scale Retail Stores Law virtually restricted the construction and operation of large retail outlets, although the law itself was stipulated so as to lift such restrictions in Department Stores Law which Large-Scale Retail Stores Law replaced. Moreover, additional restrictions were placed by local governments. (See Tsuruta and Yahagi (1991) for a vivid account of how Large-Scale Retail Stores Law has been implemented.)

It should be noted that Large-Scale Retail Stores Law was only a part of government regulations in the retail trade. Entry restrictions were placed on the distribution of various goods. Rice, liquor and drug were three best-known examples. In order to enter the distribution business of these goods, one had to obtain a permit from local authorities. These local authorities allegedly restricted new entry by, for example, requiring a new entrant obtain a consent of existing stores. Thus, these regulations also contributed to the survival of small, inefficient retail stores. (See Uekusa and Sasaki (1991) for details.)

Strict government regulations were not confined in retail trade. For example, wholesale trade of tobacco and rice were virtually controlled by the government for a long time. Transportation was also a heavily regulated industry, having many small establishments. Most of these regulations were aimed to protect small- and medium-size companies for so-called social policy purposes, which enhanced social stability.

Second, many layers in the wholesale trade and complex trade practices allegedly made the Japanese system inefficient. The Japanese goods typically went through more than one wholesaler. The Census of Commerce identified three layers of wholesalers: primary, secondary, and tertiary. Although practices differed considerably between commodities, the distribution of many goods had a multi-layer wholesale system. TABLE 2.2 is the ratio of wholesale sales to retail sales, which is often called the W/R ratio. From this, it is evident that Japan had an extraordinary high W/R ratio. The Japanese ratio was three times as high as the corresponding United States ratio. A high W/R ratio was consistent with the multi-layer wholesale system. It is often argued that such a multi-layer system was in fact unnecessary, and resulted in high costs of distribution.

The inefficient system could not survive unless there was mechanism to restrict entry. In fact, in wholesale trade, there was no government regulation comparable with Large-Scale Retail Stores Law. However, it was often argued that "unique trading practices" found in the Japanese distribution system played a crucial role in keeping this system.

Many layers were only a part of the complex distribution system in Japan. Other so-called unique trading practices included a liberal returns policy [HENPIN SEI] in which retail stores could return unsold merchandise and be reimbursed for it without penalty, a complex rebate system allowing

after-the-trade adjustment of distribution of joint profits, a persons-on-loan practice in which manufacturers and wholesalers sent sales persons to retail stores on their own payroll. The multi-layer and complex distribution system was maintained by personal relationship and long-term contracts between manufacturers and wholesalers, between wholesalers themselves, and between wholesalers and retailers. They constituted a high barrier of entry, and thus kept the inefficient system.

Third, low "productivity" in the Japanese distribution sector was long pointed out in the literature. Here productivity is measured by sales per worker and/or sales per establishment. Because sales are the product of price and quantity, a better term may be "nominal productivity." Since price may reflect firms' monopoly power, nominal productivity is the hybrid of conventional physical productivity and monopoly power.

TABLE 2.3 shows the difference between Japan and the United States. In 1958, Japanese nominal productivity was only 16.2% of the United States counterpart. The gap between the two countries was wide and thus confirmed the conventional wisdom, although the difference was narrowed sharply in recent years.

The sales-per-worker and sales-per-establishment figures are also used in the first argument ("many small inefficient stores" argument) as its supporting evidence. For example, the difference in the sales-per-worker ratio between small-size and large-size stores was much wider in Japan than in the United States (Table 2.4). This is often cited as a supporting evidence of inefficiency of the Japanese distribution system, which failed to exploit the economy of scale in the production of distribution service.

So far, I have looked at three major arguments stressing inefficiency of the Japanese distribution system. However, these inefficiency arguments

at most show that Japanese distribution system might be inefficient in producing distribution service from the viewpoint of firms. They do not necessarily imply that the performance of the Japanese system was poor from the viewpoint of buyers.

Take the third argument, the low-nominal-productivity one. The low sales-per-worker and sales-per-establishment figures do not necessarily imply that buyers pay much to distribution service of these establishments, because sales do not measure the quantity of such services. Low nominal productivity is perfectly consistent with a large quantity of services and their low price. In this case, low sales-per-establishment figures may in fact imply low relative prices of distributive services, that is, a high-performance distribution system from the viewpoint of consumers. The sales-per-worker and sales-per-establishment figures are simply efficiency, or more precisely, profitability measures from the viewpoint of firms in the distribution sector, which are producers of distribution service.

Moreover, the multi-layer wholesale system in the second argument may rather increase the efficiency through division of labor,⁵ and may in fact decrease the relative price of distribution service. In this case, multi-layer system is the efficient distribution system from the consumers' viewpoint. In addition, even the existence of small-size, family-owned stores may even increase the efficiency if this type of stores is the efficient way to organize labor that may not be organized efficiently in the form of large-size stores. (An example might be part-time family labor.)

2.4. Distribution-Margin Ratio as a Measure of the Performance of the Distribution Sector

One way to measure directly the performance of the distribution system from buyers' viewpoint is the distribution-margin ratio. The distribution-margin ratio is the percentage of the distribution margin to purchasers' price. Note that purchasers' prices consist of producers' shipping prices, wholesale trade margins, retail trade margins, and transportation costs. That is, we have

$$\begin{array}{rcccc} \text{Purchasers' Prices} & = & \text{Producers' Prices} & + & \text{Wholesale and Retail Trade Margins} & + & \text{Transportation Costs} \\ & & & & \text{<----- Distribution Margins ----->} & & \end{array}$$

Then, the distribution-margin ratio is defined as follows.

$$\text{Distribution-Margin Ratio} = \frac{\text{Distribution Margins}}{\text{Purchasers' Prices}}$$

Similarly, we define

$$\text{Wholesale Trade Margin Ratio} = \frac{\text{Wholesale Trade Margins}}{\text{Purchasers' Prices}}$$

$$\text{Retail Trade Margin Ratio} = \frac{\text{Retail Trade Margins}}{\text{Purchasers' Prices}}$$

and

$$\text{Transportation Margin Ratio} = \frac{\text{Transportation Margins}}{\text{Purchasers' Prices}}$$

If producers' prices are the same, the lower the distribution-margin ratio, the lower the purchasers' prices. Thus, if the quality of

distribution service is the same, the performance of the distribution system is higher from buyers' viewpoint when the distribution margin ratio is lower.

Because I do not have any good measure of the quality of distribution service, I maintain throughout this paper that the quality of distribution service do not significantly differ between Japan and the United States, and between periods I examine. (I consider possible difference in quality between the distribution of rice and tobacco and that of other products in Japan, but it is an exception.) This assumption is admittedly too simplistic, but I hope it will provide a reasonable first-order approximation of reality.

It is also noted here that we should cover all types of distribution in order to get a correct distribution margin ratio as a measure of performance. The only government statistics which covers all distribution activities is Input-Output Tables both in Japan and the United States. The Census of Wholesale and Retail Trades in the United States and The Census of Commerce in Japan do not cover transportation activities associated with distribution. Moreover, the Japanese census does not cover all distribution in Japan, excluding, for example, much of distribution activities of agricultural cooperative associations and government agencies. In addition, Input-Output Tables are constructed to avoid double counting of sales that may arise due to multi-layer wholesale system in Japan. 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. However, because of the difference between the two countries about compiling data, a careful data analysis is needed.

3. COMPARATIVE STUDIES ABOUT THE PERFORMANCE OF THE DISTRIBUTION SECTOR BETWEEN JAPAN AND THE UNITED STATES

In this section, I examine the arguments stressing the efficiency of the Japanese distribution system, which I mentioned in the INTRODUCTION. These arguments are mostly based on the distribution-margin-ratio comparison or the like between Japan and the United States. In fact, proponents of these arguments stress that the Japanese distribution system is as efficient as the U.S. counterpart because Japan has a distribution-margin ratio comparable to that of the United States.⁶

However, it might be confusing to use the distribution-margin ratio as the "efficiency" measure, because efficiency is usually attributed to production efficiency.⁷ The distribution-margin ratio is the performance measure from the viewpoint of buyers. A distribution system which is inefficient in producing distribution service may show high performance from the viewpoint of buyers if the cost of operation is low (for example, due to low wages in the system). Thus, efficiency in producing distribution service is a sufficient condition of high performance, but not its necessary condition. In order to avoid confusion, I hereafter use the term "high-performance" instead of "efficiency" in the remainder of this paper in order to describing a low distribution-margin ratio. Thus, I describe the distribution system as a high-performance one if its distribution-margin ratio is low, instead of describing it as an efficient one.

3.1. The High-Performance Argument I: 1988 MITI White Paper (Commerce Margin Ratio Based on 1981 Intermediate-Year Input-Output Tables)

The first attempt to measure the performance of the distribution system by the distribution-margin ratio or the like was reported in the 1988 White

Paper of the Ministry of International Trade and Industry of Japan. The White Paper was concerned solely with the commerce (wholesale and retail trades) margin ratio, and ignored the transportation margin. The result is shown in Table 3. This table shows that the commerce margin ratio was much lower in Japan than in the United States in 1981 in the distribution of consumer goods.

Based on this figure, the White Paper suggested that the Japanese distribution system was likely to show higher performance than the U.S. counterpart. In fact, if one believes these figures, the Japanese price of the same product was about 14% less than the American price when the manufacturer's shipment price was the same. The result seemed to be clearly inconsistent with the conventional wisdom stressing the inefficiency of the Japanese system. This study was quite influential as was mentioned in the Introduction.

3.2. The High-Performance Argument II: Commerce Margin Ratios Based on Base-Year Input-Output Tables and Adjusted Figures

The subsequent analyses, however, showed that the 1981 Input-Output Tables in Japan and the United States grossly under-estimated the Japanese commerce margin ratio, and at the same time over-estimated the United States counterpart (see Nishimura and Tsubouchi (1990a)). The over-estimation of the United States figure was partly due to the insufficient treatment of non-comparable imports of the United States in the analysis of the White Paper. The major cause of the under-estimation of the Japanese figure was insufficient data used in the 1981 Japanese Input-Output Tables, which were substantially less reliable intermediate-year tables. There was a tendency that intermediate-year tables under-estimate wholesale and retail trade

margins, compared with base-year tables. For example, in 1985, the intermediate-year table under-estimated commerce margins by 17.55% compared with the base-year table. (See Nishimura and Tsubouchi (1990a) for these and other sources of biases in using intermediate-year Input-Output Tables of Japan and the United States.)

Although base-year Japanese tables are more reliable than her intermediate-year tables, they still have bias toward under-estimation of the commerce margin ratio. The bias stems mainly from Japanese classification convention concerning repair services (they are included in the manufacturing sector) and wholesale establishments of manufacturing firms (they are classified to the manufacturing sector). Moreover, one should consider the effect of government-controlled distribution (tobacco, and rice). Retail prices of rice and tobacco were virtually controlled by the government until recently and their distribution was implicitly and explicitly subsidized, so that the commerce margin ratio for these two products based on published data is unbelievably low (5.7% for rice and 9.6% for tobacco). All of them tend to contribute to under-estimation, even in the case of published base-year tables (see Nishimura and Tsubouchi (1990a) for details).

TABLE 3 shows the commerce margin ratio of Japan and the United States based on published base-year Input-Output Tables, and the figure is corrected for the biases described above. The corrected figure reveals that the Japanese commerce margin ratio was likely to be higher than the U.S. counterpart, suggesting poor performance. But the difference was not so large, implying that the performance of the Japanese wholesale and retail trade sectors around 1980 was quite comparable to that of the U.S. counterparts in the distribution of consumer goods. Moreover, subsequent

researches in this field (Maruyama et al. (1989) and Ito and Maruyama (1992)) using different data sources about wholesale and retail trade sectors also obtained similar results around 1980.⁸ Thus, if the basic message of the 1989 MITI White Paper was that the performance of the Japanese distribution system was not so poor around 1980 as often argued in the past, this conclusion seemed supported by these recent researches.

3.3. Assessing the High-Performance Arguments

Around 1980: Distribution-Margin Ratio of Various Distributions

The researches reported so far concerned only with wholesale and retail trade sectors. However, as argued earlier, the distribution system must be analyzed as a whole, including transportation activities in the distribution. Table 4 reports the distribution-margin ratio based on base-year Input-Output Tables both in Japan and the United States. These figures are constructed so as to eliminate possible under-estimation biases in the Japanese data. However, it is impossible to eliminate all the biases, so that the Japanese figures are somewhat underestimated. The distribution-margin ratio is the sum of the wholesale-margin ratio, retail-margin ratio, and transportation-margin ratio.

Table 4 shows that in the period of 1977-1980, the efficiency of the distribution system was quite similar between the two countries in the consumer-goods distribution. If we extend the analysis to the distribution of investment goods, the Japanese distribution-margin ratio was somewhat higher than the U.S. counterpart. But the difference was not so significant. By contrast, the distribution-margin ratio in the distribution of export goods was significantly lower in Japan than in the United States, implying that the performance of the Japanese export-goods distribution

clearly exceeded that of the U.S. export-goods distribution. Thus, the basic conclusion obtained in the commerce-margin-ratio analysis still held true even in a broader framework of distribution.

Trend in the Performance and Performance of the Distribution Sector around 1990

Using the results based on the data around 1980, the MITI White Paper and subsequent studies suggested that the performance of the Japanese distribution system around 1990 was as good as the U.S. counterpart. However, it was misleading to draw conclusions about the performance of the distribution system around 1990 from the results obtained around 1980.

Table 4 shows that in the distribution of consumer goods, the Japanese distribution-margin ratio shows a rapid increase over the whole period (1960-1985), whereas the United States distribution-margin ratio exhibits a gradual decline in the whole period (1963-1977). (Note that the 1977 Input-Output Table is the most recent base-year table in the United States.) Thus, so long as the trend was not reversed between 1985 and 1990, the fact that Japan and the United States were comparable around 1980 implies that the Japanese distribution ratio around 1990 was likely to be higher than the U.S. counterpart. The movement of the distribution-margin ratio in both countries was steady and did not fluctuate very much.

The same upward trend was also found in the distribution-margin ratio for investment goods before 1980, but the ratio actually decreased during 1980-1985 period. There was no clear trend in the distribution-margin ratio for investment goods in the United States. It decreased from 1963 to 1967, but increased from 1972 to 1977. Because of the break around 1980 in Japan,

it is difficult to predict whether the Japanese ratio in the investment-goods distribution was larger or smaller than the United States ratio in 1990.

As for the distribution of export goods, the distribution-margin ratio did not have clear trend both in Japan and in the United States. This implies that the distribution-margin ratio was still likely to be substantially lower in Japan than in the United States in 1990.

Summing up

To sum up, the performance of the consumer-goods distribution system from the viewpoint of buyers in Japan rapidly deteriorated during the period between 1965 and 1985. Contrary to the view expressed in the 1988 MITI White Paper and in the subsequent researches of Maruyama et al. (1989) and Ito and Maruyama (1992), the performance of the Japanese consumer-goods distribution in 1990 was likely to be lower than that of the U.S. counterpart.

As for the efficiency of the investment-goods distribution, the apparent break in trend around 1980 in Japan made it difficult to predict which country had more efficient distribution system in 1990. By contrast, the distribution of export goods was still likely to be more efficient in Japan than in the United States around 1990.

3.4. Nature of Deteriorating Performance: Breakdown of Distribution-Margin Ratio

Wholesale Trade, Retail Trade, and Transportation Margin Ratios

Next, let us identify the main source of the rapid decrease in the performance in the Japanese consumption-goods distribution. Table 5 breaks

down the distribution ratio into three components: wholesale-trade-margin, retail-trade-margin, and transportation-sale-margin-ratio ratios.

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

As was explained earlier, the multi-layer wholesale system and the existence of many small wholesalers were often pointed out as one of the sources of poor performance of the Japanese distribution system. However, from the viewpoint of buyers, the performance of the wholesale trade sector was stable, or might be described as being improved somewhat. Thus, the wholesale sector was not the main source of the decreasing performance in the consumer-goods distribution.

Similarly, transportation did not cause deterioration of the efficiency. The transportation margin ratio was stable around 1.5 to 2%. Transportation was sometimes considered as a possible bottle neck in the Japanese distribution system in the past. However, the figures in Table 5 imply that the relative size of transportation costs did not change over time.

However, the performance of the Japanese transportation might be disappointing, if the Japanese transportation sector was compared with the U.S. transportation sector. The stability of the Japanese transportation-margin ratio was 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 decreased from 3.9% to 1.8% in 15 years, and this decrease was the major cause of the declining distribution ratio in the United States. Thus, although the Japanese transportation sector was not the main cause of deteriorating efficiency of the Japanese distribution

sector, it might prevent it from realizing efficiency increase due to technological and managerial advancement in transportation.

Finally, let us consider the retail-trade-margin ratio. 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%. Thus, a steady and rapid increase in the retail-trade-margin ratio was the major source of the increase in the overall distribution-margin ratio.

Diversity

Although the retail-trade-margin ratio increased steadily in the Japanese consumer-goods distribution, it does not mean that the increase was uniform among commodity groups. Table 6 shows the movement of the retail-trade-margin ratio for specific commodity groups. Here I report the ratio of commodity groups on which households pay more than 5% of their budget.

It is evident from this table that the increase in the retail-trade-margin ratio differed considerably between commodity groups and periods. Agricultural products (fresh vegetables, raw fish and livestock) showed a steady increase in all periods. However, the ratio of processed food (including liquor and tobacco) increased rapidly from 1965 to 1970, but remained stable thereafter. The increase in the retail-trade-margin ratio between 1970 to 1975 could be traced to a hike in the ratio of petroleum products (mostly gasoline and LPG) and electric products (consumer electronics). From 1975 to 1980, the retail-trade-margin of motor vehicles and textile and fabrics showed a rapid increase. In the period 1980 to 1985 the retail-trade-margin ratio in the chemical products (pharmaceutical and cosmetic products) distribution was the dominant factor in the overall increase.

Japan and the United States

Table 7 compares Japan and the United States in various commodity groups. Because I am unable to obtain wholesale and retail-trade-margins separately from published data of the United States, the commerce margin ratio (the sum of wholesale and retail-trade-margin ratios) is presented in this table. The same commodity groups as in Table 6 are reported in this table.

This table shows that the two countries differed from each other considerably in several commodities. Especially, it is not true that the distribution system of one country showed uniformly better performance than that of the other. Processed food and motor vehicles are good examples. Around 1980, the performance of the Japanese processed-food distribution was significantly better than the U.S. counterpart. The commerce-margin ratio in the Japanese processed-food distribution was only 2/3 of the U.S. ratio.⁹ By contrast, the commerce-margin ratio of the Japanese motor-vehicles distribution was 1.5 times as high as the U.S. ratio, suggesting poor performance of the Japanese distribution.¹⁰

As for other commodity groups, I obtained mixed results. The distribution of fabric and textile goods showed a slightly better performance in Japan. The commerce-margin ratio of electric products was almost the same in both countries. The Japanese commerce-margin ratio of agricultural products and chemical products was lower than the U.S. ratio around 1980, but it showed a substantial upward trend so that it is likely that they too exceeded the U.S. ratios in 1990.

4. SOURCES OF POOR PERFORMANCE: CONSUMER GOODS

Finally, let me consider the sources of the poor performance of the Japanese consumer-goods distribution. Three possibilities have been pointed out to explain this increase. They are closely related to the inefficiency arguments explained earlier.

The first explanation is based on productivity differentials. It is often speculated that, since productivity growth in the trade sector was sluggish, the wage/sales ratio rapidly increased as real wages increased because of the tight labor market during this period. This increase in the wage/sales ratio might cause an increase in the relative price of the services of the trade sector.

The second explanation looks into the possibility of the effect of government policies about trade sectors. Many policies of the Japanese government virtually restricted entry in trade sectors. Such policies increased monopoly of existing trade sector firms, and the increase in monopoly raised the prices of their services.

The third popular explanation points out the possibility that high urban rents might bring about high costs of keeping urban stores. It argues that the hike of land prices during the period reflected a rapid increase in rents (if land was owned by store-owners, imputed rents), which made the trade sectors' service expensive.

In the following, I assess these macroeconomic explanations based on aggregate variables affecting the wide range of commodities. Unfortunately, Input-Output Tables do not provide me 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 three explanations. 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. However, there are several shortcomings in this data set, which must be taken into consideration in using this data set. I briefly discuss them before proceeding with analysis.

First, unlike Input-Output Tables, the Survey does not have separate information about consumer goods, investment goods, and export goods, but gives only "total" figures for all distribution including transactions of intermediate goods. Thus, it is not possible to single out the consumer-goods distribution from this data set.

Second, the basic unit is a firm in this Survey, although the unit is an establishment in Input-Output Tables. Because many retail and wholesale firms engage in other business activities than wholesale and retail trades, published figures in the Survey do not solely correspond to retail and wholesale trade activities.¹¹

Finally, because of data availability, analysis is confined to the period 1973-1986, and in the case of retail trade, retail firms in the following analysis are those having more than five workers. Thus, the following analysis is biased to efficiency, because many small (possibly inefficient) retail firms having less than four workers are excluded. However, wholesale firms in the following analysis are all wholesale firms.¹²

Taking these shortcomings in mind, let us look at Table 8. Table 8 shows gross-margin/sales ratios for 1973, 1979, and 1986 for retail and wholesale firms and their breakdowns, which are based on the Survey.¹³ Here the following definitions are used.

gross margin = sales - merchandise purchase

+ beginning-of-period - end-of-period
inventories inventories

= payroll + profit + other operating expenses.

This table shows essentially the same result as in the previous tables. The gross-margin/sales ratio steadily increased, although the rate of increase was substantially smaller compared with that of consumer-goods distribution in Table 4. 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 above. Both made the sharp increase in the consumer-goods distribution-margin-ratio being "diluted".

Table 9 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 half of the increase in the gross-margin/sales ratio. This result suggests that the sluggish productivity growth (the first explanation) was the major cause of the increase in the price of the service of trade sectors.¹⁴ In fact, Table 10 shows that the sluggish productivity growth is behind the increase in the retail-trade-margin ratio. Although the rate of increase in real wages was lower in trade sectors than in manufacturing sectors, the productivity growth was much lower. The real wage increase dominated the productivity growth, and thus raised the price of the service of trade sectors.

By contrast, Table 9 shows that the profit/sales ratio declined, rather than increased, from 1973 (the year when Large-Scale Retail Stores Law was

enacted) to 1986. From the macroeconomic viewpoint, this suggests at most a small role of monopoly power in explaining the change in the distribution-margin ratio. A declining profit/sales ratio seemed inconsistent with the second explanation of the increase in the distribution-margin ratio that Large-Scale Retail Stores Law and other government regulations restricted new entry and thus gave monopoly power to existing large scale retail stores so as to increase the price of their service. Moreover, there was a sharp decline from 1979 (the year more restrictive measures were added to the 1973 Law) to 1986.¹⁵

Finally, as to the third explanation (the effect of high rents), I examined prefectural data, and investigated whether high-rent areas (especially Tokyo metropolitan area) have a high gross-margin/sales ratio. I found no systematic relationship between high rents and high gross-margin/sales ratios. This implies that the effect of high rents was small compared with the effect of sluggish productivity (see Nishimura and Tsubouchi (1991)).

5. CONCLUDING REMARKS

This paper has examined two conflicting views about the Japanese distribution system: one stressing its inefficiency, and the other emphasizing its high performance for consumers. Using the distribution-margin ratio, I have compared the Japanese system with the U.S. counterpart.

I have obtained three major findings. First, the Japanese ratio for consumer goods and investment goods was not different from the counterpart of the United States around 1980 and substantially lower before 1975. This suggests the same or better performance of the Japanese distribution system before 1980. However, second, the Japanese ratio was rapidly increasing while the U.S. ratio was stable. Thus, in 1990, the Japanese ratio was likely to be significantly higher than the U.S. counterpart, suggesting poor performance of the Japanese system. A persistent increase in the retail margin ratio for consumer goods was the major source of this rapid increase. The third finding was that the major source of the rapidly decreasing performance of the retail trade sector was sluggish productivity growth compared with the manufacturing sector.

In this paper, I have concerned mostly with macroeconomic explanations of performance based on aggregate variables. However, this does not mean that commodity-specific factors are not important. On the contrary, as the diversity among commodity groups point out, these aggregate explanations can at best give only a partial account of the sources of deteriorating distributional efficiency. In fact, almost a half of the change in the gross-margin/sales ratio is due to the change in the other-operating-expenses/sales ratio, which cannot be adequately explained by aggregate variables examined earlier. To augment analysis with commodity-specific

factors is an important agenda for future research about the efficiency of the distribution system in Japan.

NOTES

1. The year 1985 is the most recent year in which reliable base-year Input-Output Tables are available, which will be used in the following analysis.
2. Moreover, proponents of the efficiency argument pointed out the success of Japanese companies in the distribution sector in the world market. The success of Seven-Eleven Japan (member of the Ito-Yoka Do group) and the fall of Southland (franchiser of Seven-Eleven stores in the United States) were among oft-cited examples.
3. Here the rate of exchange is $\$1 = \text{¥}130$. A large part of its payment is related to distribution service just described, although they are intertwined with production.
4. Here I do not go into details of these arguments and their plausibility. See Ito and Maruyama (1992) for a concise survey of inefficiency arguments and counter-arguments in the literature.
5. Those who stress that a multi-layer wholesale system causes inefficiency implicitly assume that wholesale margins are accumulated in such a multi-layer system. However, data about margins show that margins are negatively correlated with the number of layers, so that the simple margin-accumulation argument does not hold true.
6. This is clearly stated in Ito and Maruyama (1992).
7. Usually, inefficiency implies that production takes place off its production possibility frontier.
8. However, there was a problem of data comparability in these studies. They compared the distribution-margin-ratio-like figures between Japan and the United States, relying on the Basic Survey of Commerce Structure and Activity in Japan and the Capital Expenditures Survey in the United States. However, the Japanese Basic-Survey data were based on data about actual firms, while

the U.S. Capital-Expenditure-Survey data were based on establishments. Thus, these two data sets are not comparable. For example, if a retail firm also has eating and drinking outlets, its figures about sales, employment and others include those of its drinking and eating outlets in Japan, while they are excluded in the United States. For more details of this and other problems in using published statistics about the distribution system in Japan and the United States, see Nishimura and Tsubouchi (1999b).

9. The commerce margin ratio of the Japanese processed-food distribution is under-estimated because of government control on rice and tobacco distribution (see Nishimura and Tsubouchi (1990b)). However, even after correction is made for this bias, the commerce margin ratio of processed-food distribution in Japan is substantially lower than that in the United States.

10. In the case of motor-vehicle distribution, the difference in services offered by automobile dealers between the two countries must be taken into consideration. In Japan, salespersons of automobile dealers make many house calls and provide customers with various services. For example, in the Tokyo area where it is now very difficult to find a parking lot, these salespersons search for a parking lot on behalf of new customers. By contrast, many U.S. dealers wait for customers dropping by at their show rooms. However, it is not likely that the difference in the commerce margin ratio can be explained solely by the difference in services.

11. This important fact is often overlooked in previous studies using the Survey.

12. See Nishimura and Tsubouchi (1990b) for these and other problems and limitations in using the Survey.

13. Note 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 (1990b), where necessary corrections are made.

14. See Nishimura and Tsubouchi (1991) for more detailed discussion.

15. However, these results must be cautiously evaluated, since I could not control other factors such as taste changes and business cycles because of the lack of sufficient time-series data.

Although a sharply declining profit/sales ratio during the period suggested that the effect of governmental policies might not be large from the macroeconomic viewpoint, this does not mean that Large-Scale Retail Stores Law and other government regulations had no microeconomic, cross-sectional effect. In fact, tentative analysis using prefectural data in 1985 shows that Large-Scale Retail Stores Law had a significant impact on the monopoly profit of large-scale retail stores (See Nishimura and Tachibana (1991)). The proxy of the degree of Large-Scale Retail Stores Law restriction on new entry is statistically significant in explaining prices of large retail stores.

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TABLE 1
THE SHARE OF WHOLESALE AND RETAIL TRADE SECTORS

YEAR	Percentage in Nominal GDP		Percentage in Employment	
	1960	1985	1970	1985
JAPAN				
Wholesale and Retail Trades	12.2%	14.6%	17.3%	19.2%
Manufacturing	36.4%	31.8%	28.8%	26.7%
UNITED STATES				
Wholesale and Retail Trades	18.6%	18.8%	23.4%	25.2%
Manufacturing	31.4%	22.5%	30.1%	22.2%

SOURCE: National Accounts, Japan: NIPA, U.S.

TABLE 2
STYLIZED FACTS "SUPPORTING" THE INEFFICIENCY ARGUMENT

TABLE 2.1.
MANY SMALL-SIZE ESTABLISHMENTS

	JAPAN			UNITED STATES		
	1966	1976	1982	1967	1977	1982
(1) Worker per establishment						
Wholesale	10.6	10.3	9.3	10.5	12.0	12.6
Retail	3.0	3.5	3.7	5.4	6.2	8.1
(2) Number of establishments per 1000 residents						
Wholesale	**	2.9	3.3	**	1.6	1.5
Retail	13.9	14.1	14.5	6.6	6.7	8.3

Source: Maruyama et al. (1989) and Tajima and Miyashita (1985).

TABLE 2.2.
MULTI-LAYER WHOLESALE SYSTEM:
WHOLESALE SALES/RETAIL SALES (W/R) RATIO

JAPAN				UNITED STATES			
1966	1976	1982	1985	1967	1977	1982	1986
4.87	3.98	3.53	3.44	1.41	1.75	1.09	0.97

Source: Maruyama et al. (1989) and Tajima and Miyashita (1985).

TABLE 2.3
"NOMINAL PRODUCTIVITY" OF JAPANESE RETAIL TRADE SECTOR
IN RELATION TO THAT OF UNITED STATES RETAIL TRADE SECTOR

United States = 100%			
YEAR	1958	1968(JAPAN)/1967(U.S.)	1982
Sales per worker	16.2%	28.3%	90.9%
Sales per establishment	8.6%	15.9%	41.6%
Exchange Rate	\$1 = ¥360	\$1 = ¥360	\$1 = ¥237

Source: Maruyama et al. (1989) and Tajima and Miyashita (1985).

TABLE 2.4
"PRODUCTIVITY" DIFFERENCES BETWEEN SMALL-SIZE AND LARGE-SIZE STORES
JAPAN AND THE UNITED STATES

SALES-PER-WORKER:	AVERAGE = 100%	
	JAPAN (1985)	UNITED STATES (1982)
Retail		
Small-size	52.9%	79.1%
Large-size	206.7%	108.1%
Wholesale		
Small-size	30.5%	99.4%
Large-size	287.9%	154.7%

Note: Small-size stores employ at most one employee except for the store owner. Large-size stores employ more than 100 employees.

Source: The Report of the 7th Ryutuu Mondai Kenkyuukai, Economic Planning Agency, (1990).

TABLE 3
STYLIZED FACTS "SUPPORTING" THE HIGH-PERFORMANCE ARGUMENT

**COMMERCE (WHOLESALE AND RETAIL) MARGIN RATIOS
 IN CONSUMER-GOODS DISTRIBUTION:
 JAPAN AND THE UNITED STATES**

YEAR	JAPAN			UNITED STATES	
	1980	1981	1985	1977	1981
MITI White Paper		29.78%			39.44%
Official Base	33.4%		34.4%	35.7%	
Corrected	36.8%		38.6%	35.7%	

Source: Nishimura and Tsubouchi (1990a).

TABLE 4
TREND IN DISTRIBUTION MARGIN RATIO
JAPAN AND THE UNITED STATES

BASE YEAR: JAPAN	1965	1970	1975	1980	1985
U.S.	1963	1967	1972	1977	
Consumer Goods					
Japan	26.4%	28.9%	32.6%	34.9%	36.7%
U.S.	39.2%	40.6%	38.6%	37.5%	
Investment Goods					
Japan	12.1%	15.6%	17.6%	18.3%	16.0%
U.S.	14.7%	12.4%	12.8%	16.1%	
Export Goods					
Japan	na	7.0%	5.4%	5.8%	7.6%
U.S.	11.6%	11.6%	11.9%	12.7%	

Source: Nishimura and Tsubouchi (1990b).

TABLE 5
BREAKDOWN OF CONSUMER-GOODS DISTRIBUTION MARGIN RATIO

BASE YEAR: JAPAN	1965	1970	1975	1980	1985
U.S.	1963	1967	1972	1977	
JAPAN					
Total	26.4%	28.9%	32.6%	34.9%	36.7%
Commerce	24.4%	27.4%	30.9%	33.0%	35.1%
Wholesale	9.2%	9.4%	9.6%	10.1%	8.3%
Retail	15.2%	18.0%	21.3%	23.0%	26.8%
Transportation	2.0%	1.5%	1.7%	1.9%	1.6%
U.S.					
Total	39.2%	40.6%	38.6%	37.5%	
Commerce	35.3%	37.5%	36.3%	35.7%	
Wholesale	na	na	na	na	
Retail	na	na	na	na	
Transportation	3.9%	3.1%	2.3%	1.8%	

Source: Nishimura and Tsubouchi (1990b).

TABLE 6:
RETAIL MARGIN RATIO
IN CONSUMER-GOODS DISTRIBUTION IN JAPAN
Selected Product Groups

Base Year	1965	1970	1975	1980	1985
Agricultural Products	14.8%	18.1%	20.6%	22.1%	28.6%
Processed Food	12.9%	18.6%	17.5%	17.6%	19.8%
Fabrics and Textile Goods	19.5%	18.6%	21.5%	27.8%	28.7%
Chemical Products	16.3%	16.0%	23.0%	22.0%	37.8%
Petroleum Products	12.8%	12.5%	30.7%	24.8%	24.4%
Electric Products	17.9%	17.1%	26.8%	30.1%	30.5%
Motor Vehicles	**	**	16.8%	28.0%	31.9%

Source: Nishimura and Tsubouchi (1990b).

TABLE 7
COMMERCE (WHOLESALE AND RETAIL) MARGIN RATIO
IN CONSUMER-GOODS DISTRIBUTION:
SELECTED PRODUCT GROUPS:
JAPAN AND THE UNITED STATES

BASE YEAR:	1965	1970	1975	1980	1985
	U.S. 1963	1967	1972	1977	
Agricultural Products					
Japan	28.0%	30.8%	34.0%	38.4%	42.5%
U.S.	38.3%	38.1%	39.1%	34.4%	
Processed Food					
Japan	18.4%	24.4%	24.3%	24.3%	25.7%
U.S.	33.5%	35.2%	30.4%	33.6%	
Fabrics and Textile Goods					
Japan	31.1%	30.0%	33.5%	41.2%	40.3%
U.S.	45.2%	49.1%	45.1%	47.6%	
Petroleum Products					
Japan	24.5%	20.9%	37.9%	35.6%	35.6%
U.S.	47.9%	49.1%	50.4%	30.7%	
Chemical Products					
Japan	28.9%	28.4%	32.8%	34.8%	47.2%
U.S.	41.4%	40.1%	37.7%	39.0%	
Electric Products					
Japan	29.3%	28.0%	37.1%	39.0%	39.2%
U.S.	35.4%	35.9%	41.3%	40.4%	
Motor Vehicles					
Japan	22.2%	19.4%	24.4%	33.5%	38.6%
U.S.	18.3%	16.6%	20.9%	20.2%	

Source: Nishimura and Tsubouchi (1990b).

TABLE 8
GROSS-MARGIN/SALES RATIO:
BASIC SURVEY OF COMMERCE STRUCTURE AND ACTIVITY

	1973	1979	1986
Retail Firms			
gross-margin/sales	24.11%	26.92%	27.09%
profit/sales	5.61%	6.17%	5.29%
payroll/sales	9.26%	10.61%	10.95%
other/sales	9.23%	10.14%	10.86%
Wholesale Firms			
gross-margin/sales	10.32%	11.87%	11.21%
profit/sales	4.17%	4.20%	3.40%
payroll/sales	2.88%	3.65%	3.65%
other/sales	3.27%	4.02%	4.16%

TABLE 9
CHANGES IN GROSS-MARGIN/SALES RATIO

	1973-1986	1973-1979	1979-1986
Retail Firms			
gross-margin/sales	+2.99	+2.82	+0.17
profit/sales	-0.32	+0.56	-0.88
payroll/sales	+1.68	+1.35	+0.33
other/sales	+1.63	+0.91	+0.72
Wholesale Firms			
gross-margin/sales	+0.89	+1.55	-0.66
profit/sales	-0.77	+0.03	-0.80
payroll/sales	+0.77	+0.77	+0.00
other/sales	+0.89	+0.75	+0.14

TABLE 10
ANNUAL GROWTH RATE OF LABOR PRODUCTIVITY AND WAGE/SALES RATIO

	1973-1986	1973-1979	1979-1986
LABOR PRODUCTIVITY			
WHOLESALE FIRMS	1.92%	0.09%	4.05%
RETAIL FIRMS	1.11%	0.42%	2.05%
MANUFACTURING ESTABLISHMENTS	4.06%	4.40%	3.76%
WAGE/SALES RATIO			
WHOLESALE FIRMS	1.84%	4.03%	0.00%
RETAIL FIRMS	1.30%	2.29%	0.45%
MANUFACTURING ESTABLISHMENTS	0.39%	0.10%	0.64%

Source: Nishimura and Tsubouchi (1991).