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**The Distribution Structure in Three Continents:
An Evolutionary Analysis of Italy, Japan
and the United States**

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**The Distribution Structure in Three Continents:
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Abstract

Relying on internationally comparable input-output tables, the paper compares the cost of distribution services to market prices in Italy, Japan, and the United States between 1970 and 1990, for various types of final buyers and for various product groups. While this ratio is shown to be stable over time in the United States, it rises significantly in both Italy and Japan over the last two decades. However, disaggregate rates for product groups reveal significant differences between Italy and Japan. We present an evolutionary interpretation of this observed behaviour based on the industrial organisation of the distribution system. (JEL: L16, L81, P52)

1. INTRODUCTION

The distribution sector is of significant economic importance.¹ Thus, retail and wholesale trade alone accounted for as much as one fifth to one quarter of total employment and 14 to 17 percent of value added in Italy, Japan and the United States in 1990 (Table 1). In spite of its importance, however, there has been little research on the role of distribution in long-run economic growth and international competitiveness. This may be due to the fact that the sector is very heterogeneous: the distribution of agricultural products, for example, is very different from that of machinery. Such heterogeneity requires careful disaggregate analysis, but detailed and internationally comparable disaggregated data are not easily available in most countries.

Moreover, the study of the distribution sector may also have been hampered by a conceptual problem. Mainstream macroeconomics often considers the distribution sector as mimicking its manufacturing counterpart. It is assumed, in other words, to produce 'distribution services' that have no connection with the goods it sells, and these services are provided to consumers independently of the goods themselves. Once this assumption is accepted, there is no special need for a separate examination of distribution channels.

Following this line of reasoning, macroeconomists find that there is a vast 'productivity' difference between Japan and Italy on the one hand, and the United States on the other. Table 1 shows, for instance, that labour productivity in distribution is substantially lower in Japan than in the United States and this difference is even more pronounced if the value added data are converted at purchasing power parity (PPP) rather than at market exchange rates. Although the market-exchange rate productivity figure is similar in Italy to that of the United States, it is at least one third lower if one uses the more appropriate PPP conversion. Moreover, the differences become even greater, at least between Japan and the United States (data for Italy are not available), if one takes output per man-hour instead of per person or considers total factor productivity rather than labour productivity alone [McKinsey Global Institute (1992)]. Using these various figures, it has often been argued that Italy's and Japan's distribution sectors are highly inefficient and at least in part responsible for the high prices faced by consumers, when compared to the situation in the United States.

In the following, we argue that this conventional wisdom is inadequate in understanding the dynamic evolution of distribution in a growing economy, and propose a new way of looking at the sector based on its role in connecting producers and consumers. Although we do not deny the existence of inefficiencies due to government regulations and other factors, the difference between Japan and Italy on the one hand and the United States on the other is more likely to reflect the efficient adaptation of the distribution sector to local conditions. These, in turn, are strongly dependent on the evolution of a country's industrial structure. In the present context we distinguish two types of distribution structures: a manufacturer-controlled and a retailer-controlled one. These two modes cope differently with the inefficiency that inevitably arises in an atomistic distribution system that faces product complexity and uncertainty. We examine the validity of our claim using internationally comparable input-output tables over twenty years. We argue that the aggregate dynamic behaviour of Italian and Japanese distribution can be considered as a transition from a manufacturer-oriented to a retailer-oriented system, while the history of the United States can be interpreted as an evolution within a retailer-oriented distribution set-up. We also provide an explanation of the industrial differences between Japan and Italy,

taking into account the type of competition present in the relevant mode of distribution of each country.

The plan of this paper is as follows: Section 2 develops the basic framework of manufacturer-oriented and retailer-oriented distribution and discusses in detail its implications. In Section 3, we define and clarify the concept of the 'distribution margin ratio' and look for evidence on its evolution in the input-output tables of the three countries. Section 4 presents an interpretation of the main results, while Section 5 sets out some concluding remarks.

2. THEORY

2.1 The Old Dichotomy and its Problems

The conventional view about how the distribution sector is organised in most economies is based on the following dichotomy: the sector is either a modern, large-scale system, as is the case in the United States and the United Kingdom, or an old-fashioned 'mom and pop' store system characteristic of less mature economies, such as Japan and Italy. Table 2 illustrates the point. The table shows that many Japanese and Italian retail stores are very small and that their productivity, measured by sales per worker, is very low indeed compared to that of the larger shops. In contrast, large stores dominate distribution in the United States and the differences in sales per worker between small and large establishments are relatively limited.

Thus, the conventional characterisation is that Japan and Italy have too many inefficient small outlets, while efficient large-scale stores pervade the U.S. market. Consequently, the argument goes, consumers have to pay higher prices to cover the high costs of such an inefficient system. It is also pointed out that inefficiencies have been encouraged in both countries by widespread restrictions on the opening of large retail shops (via detailed government regulation in Italy and the operation of the Large-Scale Retail Store Law in Japan).

This rather simple characterisation poses, however, at least two major questions. First, how can such 'inefficiency' persist for such a long time-period? When inefficiencies are present, this always means that new business opportunities also present themselves. And if the inefficiencies are really as large as the conventional view suggests, this means that the opportunities are also large. Second, why are consumers content with such high prices? If the so-called inefficiencies really hurt them, they would presumably try to change the system through the political process.

In fact, it will be argued in this article that the so-called 'immature' structure of these economies can be considered as an 'efficient' adaptation of the distribution system to the particular local conditions of each economy. First, the existence of a large number of retail outlets can be seen as the consequence of consumer tastes. Consumers in these economies show a strong preference for handiness, freshness in the case of food, and personal attention. These are services typical of small shops, which are clearly differentiated from large stores' services such as low price, wide range of products, and one-stop shopping. Second, the low labour productivity of small shops may simply reflect an efficient use of the low-productivity labour of 'grand-pa's and grand-ma's' who would otherwise not be employed. In addition, not all small shops have low productivity. The success of 'convenience stores' (or ubiquitous, mini self-

service outlets open for long hours) in Japan is a case in point. Thus, in order to be 'efficient', retail shops do not need to be large.

Of course, we do not argue that the small-store-dominated distribution system is always efficient. In fact, one of the present authors has examined the issue in detail and has shown that, even when a framework is used which takes proper account of the efficiency argument, the Japanese distribution system shows signs of inefficiency [Nishimura and Tachibana (1996)] because of government regulations of large stores and tax distortions favouring small ones. However, we argue that a variant of the efficient adaptation approach, which will be explained in the remainder of this section, provides us with a framework for analysing both institutional changes through time and differences across countries in distribution systems. This, it seems to us, cannot be done by the conventional approach in which the distribution sector is treated as a sector producing distribution services independently of the products that are sold.

2.2 A New Dichotomy: Manufacturer-Controlled versus Retailer-Controlled Distribution

The starting point of our analysis is an *atomistic distribution* system in which manufacturers and retailers are independent of each other and there are active wholesale markets. Both wholesale and retail markets are assumed to be imperfectly competitive. It is well known that in such an industrial structure a problem of 'successive monopoly' can arise (i.e., monopoly inefficiencies are accumulated at both the retail and wholesale stages). Thus, vertical integration would be efficiency-improving. However, vertical integration between manufacturing and retailing is rather rare in reality for reasons that have been extensively discussed in the literature [see, for instance, Tirole (1988)].

Moreover, products are becoming increasingly complex so that their quality is no longer apparent and various services must be provided to make full use of them (cars and sophisticated consumer electronics are cases in point). In such circumstances, the producer is now dependent on the retailer providing an adequate service to the customer, while the retailer is dependent on the manufacturer supplying him with a product of good quality.

Here we encounter a problem of bilateral (or two-way) moral hazard. When product quality is high, consumers will go on buying a particular product, even if the retailer (in order to reduce his costs and raise his profits) were to lower the standard of the services he provides. Similarly, when the quality of the services provided by the retailer is high, consumers will go on purchasing various products even if the manufacturer were to reduce these products' quality (so as to cut costs and increase his profits). Clearly, in such circumstances, both the manufacturer and the retailer have an incentive to reduce the quality of the good or service they provide, as long as the other party maintains its commitment to quality. Theoretically, a combination of so-called non-linear pricing contracts can eliminate this kind of moral hazard [see Tirole (1988)]. In practice, however, given that we live in a world of uncertainty and imperfect information, this is virtually impossible. Hence, the market will tend to end up with both low quality and low service.

Moreover, as an economy grows and demand expands, manufacturing shifts from made-to-order production to mass-production with inventory build-ups. This creates an additional problem of risk-taking. Production now takes place in anticipation of

demand, not after actual orders are placed. Such a mode of production, though it enables cost-cutting, introduces considerable risk both for manufacturers and retailers.

To cope with these various problems, two distinctive types of industrial organisation seem to have evolved in the world economy. The main difference between them lies in who of the manufacturer or the retailer has the upper hand in the distribution channel and bears the major risk.

Retailer-controlled channel. The first type is the distribution channel in which the retailer has the upper hand over the manufacturer. In the United States and the United Kingdom, for instance, large retail companies operate various chains with many private brands. The retailer determines the specification of the products he wishes to sell, and procures them from the lowest bidder among the manufacturers. The retailer also determines the various after-sale services that accompany their products.

However, the retailer cannot directly control the quality of the products he purchases. If there is no such control, quality will eventually deteriorate and this will hurt him. In order to check for quality, the retailer has to institute costly inspection mechanisms. He may also be able to persuade his suppliers to invest in expensive machines, which produce more reliable products, by incurring part of the investment cost. Such additional expenses incurred so as to maintain quality are not present in the case of vertical integration.

In this mode of distribution, the major risks are borne by the retailer. Well-diversified large retail companies, often equipped with a better standing in financial markets than their manufacturers, are capable of absorbing the risk of occasional over- or under-production. It is this capacity to absorb risk that allows the retailer to buy his supplies at lower prices than otherwise, since he virtually provides insurance for the manufacturer.

Manufacturer-controlled channel. The second type is the distribution channel in which the manufacturer has the upper hand over the retailer. A typical example is found in Japan, whose system is often called the *keiretsu*, or exclusive distribution, system. In this instance, the manufacturer virtually determines the final sales price (i.e., *de facto* imposes resale price maintenance). However, the manufacturer cannot directly control the service provided by the retailer. Hence, he himself often supplies the same, or a similar kind of, service by setting up his own after-sales service centre and by providing product information through various channels that by-pass the retail store.

In this mode of distribution, it is the manufacturer who bears most of the risk by allowing the return of unsold merchandise by the retailer with no or only token fees (a so-called 'liberal returns' policy). Typically, the manufacturer is a large and well-diversified firm while retailers are small, so that there are considerable differences in risk-bearing capacity. By using this capacity, the manufacturer collects a virtual insurance premium from the retailer, by squeezing retail margins.

An historical digression may help the reader understand the development of the *keiretsu* system as an attempt by manufacturers to cope with inefficient atomistic distribution channels [see Miwa and Nishimura (1991)]. Just after the devastation of World War II, the Japanese retail market was very underdeveloped. The low skills of the retailers caused serious difficulties for the manufacturers and the quality of service they provided was considered inadequate. In order to overcome these various marketing problems, the manufacturers established distribution channels in which only a single retailer was given the right to deal with one type of product in a particular area. Thus, intra-brand competition was, *de facto*, abolished. The *keiretsu* distribution channel was characterised by the active commitment of the manufacturer to support

his retailers. There was no franchise fee. On the contrary, manufacturers usually incurred substantial training and financial costs on behalf of their retailers.

Although Italian manufacturers do not have the same degree of dominance over retailers, the Italian system seems, on the whole, to be closer to the manufacturer-oriented than to the retailer-oriented one [see Pellegrini (1996)]. Italy does not have large retail outlets that dominate the market (the only exceptions to this can be found in the grocery line of products and in some Northern areas partly as a result of a recent inflow of foreign capital and outlet models, such as hypermarkets and discount stores). Basically, therefore, manufacturers tend to vertically control the distribution of their products. A typical example is provided by the car industry in which, since World War II, Italy has had very much the same arrangements as Japan, with manufacturers controlling the outlets for automobiles. The move in this branch towards a more retailer-oriented market has, so far, been rather slow. It has been basically led by the parallel market for imported cars breaking into the first-hand market for domestically produced ones.

Benetton's success is also in accordance with our view of the Italian system as being primarily a manufacturer-oriented one. Benetton can be considered as a 'merchant-producer', organising a large number of formally independent manufacturers of miniature or family size. Although it does not produce directly, Benetton controls production and has an upper hand over retailers who are franchisees.

In reality, of course, both types of industrial organisations co-exist side by side in the same economy. For example, although most of the U.S and U.K distribution channels are considered as retailer-controlled, the car distribution system, which is controlled by manufacturers in both countries, is a conspicuous exception. Moreover, both types can even exist in the same industry. Thus, in the distribution of TVs, videos, and CD players in Denmark, Bang and Olufsen, the high-end product manufacturer, has a distinctive manufacturer-controlled distribution network, even though the majority of the Danish distribution channels can be characterised as retailer-oriented. Usually, high-quality products tend to have a manufacturer-oriented distribution, while bulk-products are traded through a retailer-oriented one. The recent tendency, noted above in Italy, for the grocery line to develop large outlets, fits with this conclusion which can, perhaps, be taken as a stylised fact.

Interactions between the two systems. The distribution system is not static. There are constant changes or switches between the two modes,² under the influence of changes in product-standardisation and in product-reliability. Product standardisation, for instance, makes quality rather transparent, while more reliable products make both point-of-sale and after-sale service less relevant. Standardisation also reduces the cost of quality inspection and the perceived need for service provision by manufacturers since it allows the emergence of an independent service industry to which consumers can turn when they face problems with the products. This evolution, at some point, leads to the emergence of a number of large-scale retailers. In some instances the two distribution systems may coexist, in others the manufacturer-oriented distribution may be completely replaced by the retailer-oriented one.

The Japanese camera industry is one example of this transition. After World War II, camera makers tried to develop their own manufacturer-oriented distribution system. But, as camera technology became more standardised and reliable thanks to the advancement of electronics, the need for point-of-sale and after-sale service declined, and the camera makers eventually abandoned their attempt to build their own distribution network.

On the other hand, if an entirely new and complex product is created (such as personal computers) whose quality, at least in the early stages of development, is not readily assessable, a need for point-of-sale and after-sale retail services clearly re-emerges. Thus, a large-scale major product innovation is likely to bring about a switch-back from a retailer-oriented system to a manufacturer-oriented one. It is interesting to note that manufacturers producing high-end products often have, or have tried, to develop manufacturer-oriented distribution channels which, they stress, are the best way to market their high-quality products. The previously mentioned case of Bang and Olufsen is one such example in consumer electronics, while IBM in its global operations and Olivetti in Italy are similar examples in computers.

3. EVIDENCE

In this section, we first introduce the concept of the 'distribution margin ratio', a variable widely used in analysing the behaviour of the distribution system. We then examine the implications of the two modes of distribution presented in the previous section for this ratio and calculate its value for Italy, Japan and the United States.

3.1 The Distribution System and the Distribution Margin Ratio

The *distribution margin* is defined as the difference between the manufacturer's factory gate price and the price paid by the final buyer (or purchaser's price). The *distribution margin ratio* is the ratio of the distribution margin to the purchaser's price and can be considered as a measure of the cost of distribution services that the buyer incurs. Since the services provided are likely to differ among product groups and among types of final goods, aggregate analysis of this ratio may be quite misleading. Thus, we supplement such aggregate analysis with a more disaggregated breakdown which looks at types of final goods and, within the same type of final goods, at groups of products.

In the analysis of the distribution system, it is often assumed that the distribution margin ratio measures not only the cost of distribution services but also the efficiency of the system itself.³ However, it is confusing to use this ratio as an 'efficiency' measure, because efficiency is traditionally associated in economics with production efficiency and the absence of allocational distortions. A distribution system which is technologically inefficient in producing distribution services may still show a low cost of producing such services (a low distribution-margin ratio) if operating costs are low (for example, due to low wages in the system). Thus, we stick to the 'cost-of-distribution-service' interpretation of the distribution margin ratio.

The definition of this ratio used in the following discussion assumes an economy with no indirect tax. The possible complications due to the existence of indirect taxes are discussed in Nishimura and Punzo (1998) where it is shown that the definition is still generally valid even in the presence of such taxes. If there is no indirect tax, then the market price that users of the manufactured goods pay is the sum of the manufacturer's factory gate price and various distribution margins added on at the wholesale, retail and transportation stages (for more detail, see the Appendix).

Let us now consider the effect on the distribution margin ratio so defined of the difference between the two modes of distribution.⁴ The basic difference, discussed above, is whether the manufacturer or the retailer incurs the cost of reducing inefficiency due to bilateral moral hazard, and bears the risk of over- and under-

production. In the retailer-oriented distribution, the retailer incurs costs in the form of, for example, quality inspection, and bears the risk of buying products outright from the manufacturer. In contrast, in the manufacturer-oriented distribution, the manufacturer incurs costs, such as manufacturer-originated marketing activities to supplement inadequate retailer services, and bears risks by, for example, adopting a liberal returns policy. This suggests that, in order to cover such costs and risks, retail margins (and hence the distribution margin ratio) should be higher in a retailer-oriented system, while factory-gate prices should be higher in a manufacturer-oriented one.

To examine this hypothesis, we look at the distribution margin in Italy, Japan and the United States for the distribution of consumption-goods and investment-goods. To do this, we use the three countries' input-output tables which can be considered as the most comprehensive and internationally comparable data set showing information about both factory gate and retail prices (the Appendix provides a full list of the input output tables that were used). For consumption-goods distribution, we calculate the distribution margin ratio of household consumption, while the distribution margin ratio of private fixed investment is taken as representative of investment-goods distribution. We do not consider public consumption or public investment, since the definition of these two variables differs considerably among countries (notably so for defence spending).

3.2 Similarities and Differences between Italy, Japan and the United States

Table 3 shows the evolution over three decades of the aggregate distribution margin ratio for the two types of final good for each country. It will be seen that the ratio in the consumer goods sector is more than twice as high as that for investment goods. This difference reflects the extra costs involved in the distribution of consumer goods, for which demand is heterogeneous and scattered geographically. Thus, transportation, handling and information costs (such as advertising, etc.) are all higher in the distribution of consumption goods.

Although the Japanese ratio for both types of final goods is usually higher than the Italian one, the table shows a remarkable similarity in the ratio's longer-run behaviour in these two countries in contrast with what happens in the United States. In consumer-goods distribution, for instance, both the Italian and Japanese ratios start far below the U.S. level, but increase steadily, with the Japanese ratio now close to the American one. In contrast, the United States figure is stable in the period we consider. In fact, it has been remarkably stable over the past century, fluctuating around a 37-39 per cent level except in war-time.⁵ In investment-goods distribution, the Japanese ratio is higher while the Italian one is lower than the U.S. ratio. However, both the Italian and Japanese ratios show a substantial increase of a similar order of magnitude over time. By contrast, the U.S. ratio shows no trend over the period.

4. INTERPRETATION

4.1 Aggregate Movements in the Three Countries

Bearing in mind the evidence from the previous section, we can explain the similarities between Italy and Japan, particularly in the consumer goods sector, as being evidence of a long-run transition from a manufacturer-oriented distribution system to a retailer-

oriented one. Product innovations in the post-war period (especially in consumer durables and motor vehicles) induced the widespread development of a manufacturer-oriented distribution system in both economies. As a result, distribution margin ratios were relatively low in the early years of the period under investigation. However, the subsequent development of more standardised and reliable products made retailer-oriented distribution more viable, leading to the present system in which both distribution modes coexist. Since, as was argued earlier, the distribution margin ratio is higher in a retailer-oriented system than in a manufacturer-oriented one, the ratio has increased over time in the transition from the latter to the former.

The similarity between the two countries is also founded on the similarity of regulatory laws concerning their distribution systems and of recent (in some cases still ongoing) attempts at structural reforms. In both countries, distribution was heavily regulated, as has often been the case in so-called 'immature' economies in which 'excess labour' finds employment as owner-appropriator of small retail and wholesale shops. Governments in such economies frequently restrict the entry and operation of large stores fearing that these may drive small shops out of business and cause serious employment problems and political unrest. Japan has a long history of restrictive regulations starting from the 1937 Department Store Law and its descendant, the 1973 Large-scale Retail Store Law. The latter, in particular, prevents the achievement of scale economies through large-scale retailing. Although the current structure of Japan's retail market can be considered as an efficient adaptation of the distribution system to the country's particular conditions, this does not mean that there is no need for change. In particular, there is a growing demand for large-scale retailing, allowing what has been called 'one-spot shopping' of a wide range of products at low prices. However, regulation severely restricts experimentation with new forms of large-scale retailing, and inevitably adds to inefficiencies.⁶

In Italy, similar laws have long created similar entry barriers (and, no doubt, similar inefficiencies) by giving local authorities the power to licence the opening of new outlets, their allowed sizes and the types of goods that could be sold. In addition, these licences had to comply with pre-defined commercial development guidelines, not always designed by the local authorities themselves. Inevitably, these various regulations have stifled competition and the distribution sector has kept its traditional links with the manufacturing sector. This has led to the emergence of a polarised distribution structure that evolved unevenly, with the grocery branch on one side undergoing a process of concentration (and, as a result, becoming more retailer-oriented), while the rest of the sector remained largely centred on the classical family-based, or small scale, outlet.

It would have been impossible for the distribution system to gradually move away from the manufacturer-controlled mode of small shops to the retailer-controlled mode of large stores, if such regulations had continued to be in place. In order to make the transition possible, regulatory reforms were inevitable, but, as could have been expected, they met with stiff opposition from vested interest groups. Interestingly, in both countries the driving forces of regulatory reform were external. U.S. pressures to open the domestic market to international competition were most important in the case of Japan, while the progress of European integration, and especially the 1992 Single Market Programme, was paramount in the case of Italy. Gradually, if slowly, regulatory reforms resulted in an increase in the number of large stores in both countries and in a continuing shift of control from manufacturers to retailers. Now, in both Japan and Italy, small neighbourhood shops and large suburban commercial

outlets coexist. The national distribution margin ratios are in fact the average over the two, with their steady increase reflecting the structural shift from small to large stores.

The United States differs from both Italy and Japan in so far as various kinds of retail innovation made large-scale retailers viable and endowed them with an upper hand over manufacturers from as early as the turn of the twentieth century (except for war-time and possibly for automobile distribution). Thus, the U.S. distribution system has been a retailer-oriented one for a long period of time. The country's very stable distribution margin ratio is in fact the result of constant changes and innovations in retailing. Thus, new 'no-frill' modes of retailer-oriented distribution channels are usually introduced with substantial price discounts from existing ones. These eventually 'upgrade' themselves into high-cost distribution systems. Then, a new kind of 'no-frill' mode invades the market. It is largely through this continuous process of change⁷ that the distribution margin ratio has remained constant for such a remarkably long period of time.

It is interesting to note that the Japanese ratio reached the level of the U.S. one around 1985-1990, a period that experienced a drastic change in the distribution system, often called 'price destruction'. A clear development towards the retailer-oriented mode was seen at the time in various distribution channels. A similar, but less pronounced, change can also be found in Italy in recent years. Thus, we expect that Japan's distribution margin ratio will stabilise around its current rate, while the increase in the Italian ratio will taper off as it comes closer to the U.S. one.

Although this paper does not attempt to directly analyse the efficiency of the Italian or Japanese distribution systems, the decomposition of the distribution margin ratio into its commerce (wholesale and retail trade) and transportation components sheds some light on this issue. Table 4 presents this decomposition for Japan and the United States over twenty-five years, following the procedure outlined in the Appendix (lack of the relevant data prevented a similar calculation for Italy).

The United States is a large continental economy, and thus one can safely assume that its transportation margin ratio should be substantially higher than the Japanese one. This was, indeed, the case in the 1960s when the U.S. ratio was almost twice as high as the Japanese one. However, the U.S. ratio fell substantially in the 1970s and 1980s, thanks to technological advancement and government de-regulation. In contrast, the Japanese ratio has remained almost unchanged during the entire period and is now (marginally) higher than the American one despite Japan's territorial concentration. This would seem to imply that the technological progress that has so forcefully affected the United States has had little impact on Japan. This disappointing performance is likely to reflect the inefficiency of the transportation sector due, in turn, to government regulation. Transportation is one of the most heavily regulated industries in Japan, and not only entry but also various business practices are screened by the Ministry of Transportation. These regulations suffocate entrepreneurial initiative without which the diffusion of technological advance becomes extremely difficult.

4.2 Industrial Differences between Italy and Japan

The aggregate similarities in the distribution margin ratio between Italy and Japan noted above can, however, be somewhat deceptive since the two countries exhibit large differences in this ratio for specific product groups, as shown in Table 5 (which also reports data for the United States, as a standard of reference).⁸ It will be seen that the

distribution margin ratio is substantially higher in 'livestock, agricultural and fishery products' and in 'food and kindred products' in Italy than in Japan. By contrast, the Japanese ratio is far higher than the Italian one in a range of manufactured goods, such as 'fabric and textile products', 'apparel', 'furniture, fixture and wood products', 'petroleum products', 'electric equipment including household appliances', and 'motor vehicle and other transportation equipment'. That, despite this, Japan's overall rate is only marginally higher than Italy's is due to the large share in total expenditure of low-margin food products.

Japan's low cost wholesale and retail operations in agricultural products and processed foods (lower even than in the United States) is partly due to public intervention in food distribution, especially in rice and tobacco whose share is large in household consumption. The government, and institutions under the government's influence, provide wholesale functions, and their costs are not properly represented in the official statistics.⁹ A further reason is linked to the high producer prices of Japanese agricultural products - though the margin ratio may be low, the absolute level of the margin is still high. Finally, there are elements of manufacturer control reducing retail margin in some products (e.g., beer) and there has also been some innovation in food distribution.¹⁰ Italy's high margins, on the other hand, simply reflect a costly and atomistic food distribution system, with many traditional small shops still dominating the industry (the earlier mentioned shift to large grocery stores is too recent to have significantly affected the 1988 Italian figure).

By contrast, Italy's low margin ratios in 'fabric and textile products', 'apparel', and 'furniture, fixture, and wood products' are the result of fierce competition among retailers at home. Italy's international competitiveness in these industries may well be helped by this, while Japan's high margin ratios in the same sectors may be a manifestation of the country's loss of ground in these product groups. However, high margin ratios do not necessarily mean a lack of competitiveness. The high margin ratios in Japan for electric equipment and, especially, motor vehicles (two areas in which Japan has traditionally been very competitive) may well reflect the influence of the *keiretsu*-dominated system, in which the distribution channels are virtually controlled by producers.

This may seem to be at odds with our earlier conclusion that manufacturer-oriented distribution systems would normally exhibit low retail margins. Yet, this is not inconsistent if firms compete primarily via the provision of services rather than through price competition. In a manufacturer-oriented distribution mode, the retail price or, more precisely, the retail margin becomes a device for controlling the level of services provided by the retailer. Price cutting in such circumstances could cause a reduction in the provision of such services that would be harmful to the manufacturers. In the Japanese context, in which consumers seem to be sensitive to services more than to price, it makes sense to compete by providing better services. Intense competition (for which these industries are well known) would thus imply higher retail margin ratios in Japan than in Italy and would also constitute a significant barrier to entry. Automobiles are a case in point. Although car distribution is largely manufacturer-oriented in all the three countries, Japan's distribution margin is almost double the Italian and American margins *and* has doubled between 1970 and 1990. This, however, comes as no great surprise if it is borne in mind that service competition in Japan takes the very labour-intensive form of in-house calls (with sales persons making frequent visits to current and potential customers and providing personalised services). Not

only is this very costly, but it also drives up the margin through time given the rising trend in wages.

Finally, the extremely low distribution margin ratio in 'petroleum products' in Italy is the joint outcome of (i) a retail price administered by a set of government agencies, (ii) the high operating costs of the producers of oil and other related products, and (iii) the direct control over retailing exercised by these producers. Together, these have resulted in a squeeze on distribution margins as producers have attempted to maintain their profits. The licensing system for the equipment of petrol stations has virtually transformed the retail sellers of oil and related products into the status of mere 'representatives' or 'employees' of the petroleum companies.

Table 6 extends the analysis through time and looks at the changes that have occurred in Italy and Japan over the last two decades. Unfortunately, the Italian input-output tables of the 1970s do not provide sufficiently detailed information for all the sectors considered above. Thus, we concentrate on four 'key' and somewhat more aggregated industries: (1) 'food and kindred products', (2) 'textile and apparel', (3) 'machinery and precision instruments' and (4) 'motor vehicle and other transportation equipment'. Qualitatively the results are similar to those already shown for the aggregate distribution margin ratio in Table 3 above: the ratio shows a steady increase in all the four sectors and in both countries, with motor vehicles in Italy as the single exception. Thus, the increase in the overall ratio discussed in the previous sub-section is not due to shifts in the structure of demand from low-margin to high-margin industries, but is a virtually universal feature in both countries.

5. CONCLUSIONS

Relying on detailed, and internationally comparable input-output tables, we have investigated how much final buyers of products pay for the service provided by the distribution sector in Italy, Japan, and the United States. The distribution margin ratio, or the distribution sector's share in the final product price, has been taken to be the cost of distribution services. This has been calculated for various years between 1970 and 1990, for different kinds of buyers and for different product groups.

The results are striking. Although Japan and Italy are far apart from each other geographically, they are similar in the behaviour over time of the aggregate distribution margin ratio: both exhibit a substantial increase in this ratio over the last two decades, be this for the distribution of consumer goods or investment goods. By contrast, these two ratios in the United States have been stable, at a higher level, for almost a century.

However, aggregate similarity is somewhat deceptive, since disaggregated rates for product groups reveal substantial difference between Italy and Japan. In general, agricultural and food products have higher retail margins in Italy than in Japan, while most other manufactured products show the opposite pattern. The major reason for these differences lies in the differing structures and degrees of competition of the various industries, themselves, at least in part, a reflection of the varying presence or absence of government regulation.

We have explained these empirical results by appealing to a new framework that analyses the evolving industrial structure of the distribution sector. We have proposed a dichotomy between a manufacturer-controlled and a retailer-controlled distribution system. The Italian and Japanese movements in the distribution margin ratios have been shown to reflect a gradual evolution from a manufacturer-controlled to a retailer-

controlled mode, while U.S. developments have taken place within a retailer-controlled one. In addition, some of the major industry differences found between Italy and Japan have also been explained in terms of the forms of competition that exist within a basically manufacturer-controlled distribution system.

Italy and Japan are now in the midst of important changes in their distribution systems. Large-scale retailing, found in the United States and the United Kingdom (and in other European countries such as France), seems to be spreading. From our standpoint, this is simply the manifestation of a gradual change from a manufacturer-controlled distribution to a retailer-controlled one, a change that has been ongoing since the 1960s, with consumer demand for large-scale retailing as its main driving force.

As explained in Section 2, two conflicting forces are operating to bring about changes in distribution: standardisation, which gives cost advantages to retailer-controlled systems, and product innovation which ensures the continuing superiority of manufacturers in distribution. At the present stage, standardisation seems to prevail over product innovation. However, manufacturers are attempting to counter this movement by introducing new products and strengthening their existing distribution channels. The future of Italian and Japanese distribution will depend, at least in part, on the result of these attempts.

It is clear that this international investigation of the distribution system is only at its beginning. Although Italy and Japan, as well as the United States, are important economies, our analysis should be extended to other European, Asian and Latin American countries, so as to obtain a wider set of international 'stylised facts' about the distribution sector.

Appendix: Construction of Distribution Margin Ratios and Data Sources

This appendix provides a more precise definition of the distribution margin ratio and briefly explains how the ratios' values, reported in Tables 3 to 6, were constructed from the base-year input-output tables of Italy, Japan and the United States.

As already mentioned in Section 3.1 above, the distribution margin ratio is defined as follows:

$$\text{Market Price} = \text{Manufacturer's Factory-gate Price} + \text{Distribution Margins} \quad (3.1)$$

where:

$$\text{Distribution Margins} = \text{Wholesale and Retail Margins} + \text{Transportation Margins} \quad (3.2)$$

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

$$\text{Distribution Margin Ratio} = \text{Distribution Margins/Retail Price} \quad (3.3)$$

$$\text{Commerce Margin Ratio} = \text{Wholesale and Retail Margins/Retail Price} \quad (3.4)$$

$$\text{Transportation Margin Ratio} = \text{Transportation Margins/Retail Price} \quad (3.5)$$

The data needed to compute the ratio were obtained in the base-year input-output tables which contain information about producers' prices and purchasers' prices for all transactions between sectors, as well as wholesale and retail margins, and transportation margins in the case of Japan and the United States. The distribution margin ratios are constructed from this information, on the assumption that the purchasers' price for buyers of final-goods is the final retail price, and that the producers' price is the manufacturers' factory-gate price.

Two types of final-goods buyers are considered: buyers of consumer-goods and of investment-goods. For consumer goods, transactions are further disaggregated into nineteen product groups. Detailed explanations of the choice of data and the classification of the various products are reported in Nishimura and Punzo (1998), which is available from the authors upon request

The base-year input-output tables used are: ISTAT, *Tavola intersettoriale dell'economia italiana* for Italy, Economic Planning Agency, *Sangyo-Renkan Hyou: Torihiki Kihon Hyou* for Japan, and Department of Commerce, *Benchmark Input-Output Accounts for the U.S. Economy* for the United States. The base-years are 1970, 1972, 1980, 1982, 1985 and 1988 for Italy, 1970, 1975, 1980, 1985 and 1990 for Japan, and 1972, 1977, 1982 and 1987 for the United States.

In the base-year tables, there are two different tables: the *Producer Price Table* (or *Tavola a prezzi ex-fabbrica*, for Italy), and the *Purchaser Price Table* (*Tavola a prezzi di mercato*). The Producer Price Table shows the value of products evaluated at the factory gate prices that manufacturers charge, while the Purchaser Price Table exhibits the value of products at the retail prices that buyers pay. The differences between the two sets of prices are commerce and transportation margins as well as indirect taxes.

FOOTNOTES

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1. It is important to define the distribution system at the outset of our study, because the word is often used rather vaguely. We are concerned with the distribution system of final goods; and we define this system as the system of distributing manufactured goods from producers to final users. Thus, the distribution system consists of the wholesale trade, retail trade and transportation sectors. Intermediate-goods transactions are ignored. This does not imply that such transactions are unimportant, but lack of data and theoretical difficulties in distinguishing inter-firm from intra-firm transactions simply prevent us from including them in our study.

2. We are in no way suggesting that these are the only possible modes of distribution that can exist. There may well be others, but these two are by far the most important.

3. See, for example, Ito (1992).

4. For a theoretical investigation of the two modes of distribution and, especially, for an analysis of their macroeconomic consequences, see Nishimura and Nakayama (1998).

5. This long-run constancy is theoretically puzzling and we lack, at present, a good interpretation for such a 'stylised fact'.

6. Thus, Nishimura and Tachibana (1996) find that the Large-scale Retail Store Law results in large shops charging higher prices than if there were no such law.

7. This process is often called the 'wheel of retailing' in the marketing literature.

8. More detailed information can be found in Nishimura and Punzo (1998).

9. See Nishimura and Tsubouchi (1990) for detail.

10. Thus, the distribution of bread, for instance, seems to be more efficient than in the United States since the final price to consumers is similar, despite higher producer prices in Japan. The main reason for this lies in the streamlined distribution channels set up by the breadmakers.

TABLE 1

The Importance of the Distribution Sector in the Economy, 1990

	Share in Economy (per cent)		Productivity (\$ 000's)	
	Employment	Value added	Net output per employed (at market exch.rat.)	(at PPP exch.rat.)
Italy	21.0	16.7	42.2	35.8
Japan	19.4	13.8	34.4	29.7
United States	25.3	17.0	41.4	51.4

Source: OECD, *Economic Surveys: Japan, 1995*.

TABLE 2

Establishment Size and Worker 'Productivity' in Retail Sector

	Sales Share (per cent)	Sales per Worker (>100 employees=100)
Italy (1994)		
1-9	49.4	25
50-99	5.2	89
>100	19.1	100
Japan (1994)		
1-9	43.5	43
50-99	7.0	56
>100	16.2	100
United States ^a (1992)		
0-9	8.6	70
50-99	16.6	84
>100	16.6	100

a Excluding owner-appropriator.

Sources: ISTAT, *I conti economici delle imprese con 20 addetti ed oltre, 1994* and *I conti economici delle imprese con addetti da 1 a 19, 1994* for Italy; MITI, *Census of Commerce, 1994* for Japan; Department of Commerce, *Census of Retail Trade, 1992* for the United States.

TABLE 3

Distribution Margin Ratios by Types of Final Goods
(per cent)

Years: Italy	1972	1982	1988
Japan	1970	1980	1990
United States	1972	1977	1987
<i>Consumer goods</i>			
Italy	30.5	30.9	34.6
Japan	28.9	34.9	37.8
United States	38.6	37.5	38.9
<i>Investment goods</i>			
Italy	10.1	13.7	14.8
Japan	15.6	18.2	19.7
United States	12.8	16.0	14.8

Source: authors' estimates using the input-output tables listed in the Appendix.

TABLE 4

Commerce^a and Transportation Margin Ratios: Consumer Goods
(per cent)

Years: Japan	1965	1970	1975	1980	1985	1990
United States	1963	1967	1972	1977	1982	1987
<i>Commerce^a</i>						
Japan	24.4	27.4	30.9	33.0	35.1	35.9
United States	35.3	37.5	36.3	35.7	35.5	37.2
<i>Transportation</i>						
Japan	2.0	1.5	1.7	1.9	1.6	1.9
United States	3.9	3.1	2.2	1.8	1.7	1.7

^a Wholesale and retail.

Source: authors' updating of Nishimura (1993).

TABLE 5

Distribution Margin Ratios for Selected Consumer Goods
(per cent)

	Italy 1988	Japan 1990	United States 1987
Livestock, agricultural and fishery products	56.5	41.0	46.8
Food and kindred products, including tobacco	35.4	31.3	35.0
Fabrics and textile products	30.3	41.7	47.6
Apparel	31.7	53.5	46.2
Footware and leather products	40.5	41.0	50.3
Furniture, fixtures and wood products	29.9	44.6	46.9
Chemicals, including drugs	35.9	42.9	41.7
Petroleum products	13.2	32.8	37.1
Electric equipment, including household appliances	30.2	34.6	45.1
Motor vehicles and other transportation equipment	19.5	40.8	22.8

Source: as for Table 3.

TABLE 6

Longer-run Changes in Distribution Margin Ratios for Selected Consumer Goods
(per cent)

Years: Italy	1972	1982	1988
Japan	1970	1980	1990
<i>Food and kindred products, including tobacco</i>			
Italy	30.3	31.4	35.4
Japan	24.4	27.0	31.3
<i>Fabric, textile products and apparel</i>			
Italy	27.9	28.5	31.5
Japan	32.9	47.9	49.9
<i>Machinery, scientific and electric equipment</i>			
Italy	25.9	29.1	31.0
Japan	32.7	40.3	36.8
<i>Motor vehicles and other transportation equipment</i>			
Italy	28.3	18.4	19.5
Japan	19.4	33.9	40.8

Source: as for Table 3.

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