

# Japanese retail stores

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# 11 Japanese retail stores: Regulation, demand and the dual labour market

*Jeroen C.A. Potjes, Martin A. Caree and A. Roy Thurik*

In this empirical study, the regional development in number of stores in Japan is explained using legal, social, demographic and economic factors. Both demand and supply effects are found to have strong impact on change in number of stores. The effect of the Large Scale Retail Store Law seems only to be limited.

## **1. Introduction**

The Japanese distribution system is generally considered to be inefficiently structured. The abundance of small stores is widely viewed as evidence to this. Additionally, the high number of small retail stores discourages US and EC companies to export to Japan because small Japanese stores are less inclined to sell products from unknown foreign producers [e.g. Batzer and Laumer (1989), Montgomery (1991), US International Trade Commission (1990)]. A decrease in number of stores would imply a trend towards larger stores and therefore also a promising route towards a more efficient Japanese distribution system and a more open Japanese market for European and American products. Insight is required in the determinants of the development in the number of stores. Clearly, this development is influenced by a complex of social-economic and demographic developments as well as government regulation. This study investigates the importance of a variety of determinants over the 1970-1985

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period using a comprehensive data set, covering 58 shop-types and 53 regions.

Four main views on the abundance of small stores in Japan exist<sup>1</sup>. The most popular view, also advocated by the US Congress, concentrates on the effect of the Large Scale Retail Store Law (LSRS Law). This law favours small retailers by regulating the establishment of large stores. Caves and Uekusa (1976) and Patrick and Rohlen (1987) emphasize a supply side approach, arguing that many shopkeepers use self-employment as alternative to being unemployed. This contrasts with the demand side approach of Flath (1990) who shows that a large number of stores is economically feasible because of the small size of Japanese houses and the low degree of car ownership. Batzer and Laumer (1989) similarly stress that the Japanese customer is service- and quality-oriented, creating opportunities for nearby stores as a serviceenhancing characteristic of the distribution system. Furthermore, the traditional shopping behaviour prevails: housewives frequent neighbourhood stores on a daily basis, to buy fresh products and to get an update on the local news [Bestor (1989), Sletmo and Ibhgy (1991)]. The importance of tight relations with wholesalers and clients is a fourth explanation. These tight relations create a protected environment for the retailer. Therefore, stores are able to maintain market positions and to generate a comfortable income for the shopkeeper and his family [Den Hertog, Potjes and Thurik (1992)]<sup>2</sup>.

The social-economic structure of Japan has been changing rapidly since World War II. Since 1970, houses have become larger, car-ownership has increased, consumer expenditure has increased, consumer behaviour has become more diversified, population has aged, more people have moved into densely populated areas and self-employment has decreased. These social-economic developments have had their impact on the Japanese retail structure. Among these are the introduction of supermarkets and large specialty store chains during the 1960s and 1970s. The small stores came

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<sup>1</sup>See Potjes (1992) for a more detailed discussion of these views.

<sup>2</sup>Goldman (1991) argues that the tight relations in Japanese retailing are traditional features of the internal political economy in the distribution system. Sletmo and Ibhgy (1991) claim that the close relations between retailer and client should be incorporated in efficiency models on Japanese retailing.

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under pressure and in 1973 the LSRS Law came into force, putting an end to the rapid development of the superstores and specialty chain stores. In the 1980s the convenience store was introduced in Japan and it proved to be an enormous success. Flath (1990) estimated the effect of demand factors and the LSRS Law on number of stores in 47 regional areas in the year 1985. His conclusion (based on static analysis) is that free entry of large stores would not result in a serious diminution of small stores. In this paper, we extend the statistical analysis of Flath (1990). First, supply factors, such as the importance of self-employment, are included in addition to demand and legal factors also used by Flath (1990). Second, we estimate a dynamic model to investigate the effect of the rapidly changing social-economic and demographic setting of Japan. Third, our analysis uses a more extensive data set.

The outline of the paper is as follows. In the next section we expand on the different views on the Japanese retail sector and on current developments. We consecutively describe the demand for stores, the supply of stores by independent retailers and government intervention in retailing. In Section 3, we describe the determinants of the change in number of stores. We provide results of the regression analysis in Section 4 and discuss sign and significance of the determinants. Section 5 concludes the paper.

## **2. Japanese retail practice**

### *The demand for stores*

Flath (1990) argues that retail stores not only distribute consumer goods but also function as a warehouse for people living in the neighbourhood. Retailers perform this function, because Japanese houses are generally small. Little room is available for keeping stocks inside the house and people buy only small amounts of daily necessities. This makes it important for Japanese retailers to be located close to their clients, in order to make daily shopping possible. In recent years, however, in-house storage space has increased as houses have become larger. In 1970, the living space of a Japanese was 7 tatami mats (one tatami mat is approximately 1.5 square

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meter). It almost doubled to 13 tatami mats in 1985 [Japan Statistical Yearbook (1973,1988)]. Furthermore, car-ownership has increased rapidly, enabling more Japanese to shop by car instead of on foot. On the other hand, Japan has an ageing population, and elderly people are assumed to rely more on neighbourhood stores, because of their lower mobility and their preference for traditional ways of shopping. The Japanese population grew from 100 million people in 1970 to 120 million people in 1985. This growth was accompanied by a substantial growth in personal income and an increase in retail spending per person. The composition of expenditures became more varied per person, with more luxury goods and higher spending on clothing and household appliances. Furthermore, living habits became more and more differentiated [Fields (1988)], creating market niches for new types of retailing (i.e. supermarkets, convenience stores, boutiques, vending machines). The once homogeneous Japanese market [Reischauer (1977), Yoshino (1971)] became more and more fragmented [Dodwell Marketing Consultants (1988)].

The Japanese highly value services and quality products. They are keen on fresh products (in particular fish). Despite the demographic and social-economic developments the Japanese remain buying these fresh products on a daily basis. These persisting habits favour a high density of stores selling fresh products. Young people also eat fresh fish and other traditional Japanese dishes, in addition to bread, spaghetti, curry and other non-Japanese dishes. Their purchasing habit is different in that they would rather buy these products in supermarkets and convenience stores.

#### *The supply of stores*

In Patrick and Rohlen (1987), the large number of small stores is explained by peculiarities of the Japanese labour market. It is reasoned that by screening out certain groups, in particular women, and by retiring workers early, large firms create large pools of people having a high potential of starting their own firm. This duality of the labour market is described in Caves and Uekusa (1976). Compared to other available jobs, their entrepreneurial activity will give more job satisfaction and will create a higher income. Retailing is a sector in which these people have good

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chances because capital requirements are low, no special skills are required, and government policies stimulate small scale retailing. Usually, these new retailers invest all their savings in the store and perceive the store as a long term investment aimed at providing a family income also after the retirement age.

The costs and profit structure of these small scale family enterprises differs substantially from that of large scale retailers. Their labour productivity, measured in total sales value per person engaged, is about half of that of the larger retail stores [Source: Census of Commerce]. The difference in productivity between small and large retail stores does not fail to affect the market share of small stores, which is in rapid decline. However, many small stores seem to survive, despite the competition of large stores [Carree, Potjes and Thurik (1992)].

#### *Government regulations*

The traditional retail institutions in Japan were the small scale family enterprises and the large, luxurious, department stores. During the 1960s, supermarkets were introduced in Japan. Many of these stores became large chain store corporations. Later, specialty chain store corporations emerged, establishing large stores selling only one product line. The large scale department stores, superstores, supermarkets and specialty stores constituted a major threat to the small-scale retailers [Dawson (1989), Dodwell Marketing Consultants (1988), Kurebayashi (1991), Maeda (1981), Tajima (1971), Yoshino (1971)].

The leading Liberal Democratic Party (LDP) in Japan has been strongly dependent upon the support of the numerous small and medium-sized entrepreneurs and their relatives. This is one of the reasons why government policies have been directed towards the protection of these small and medium-sized enterprises [Patrick and Rohlen (1987)]. Considerable political pressure from small retailers on the LDP has led to the Large-Scale Retail Store Law (LSRS Law)<sup>3</sup>. This law favours small stores in three ways.

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<sup>3</sup>The LSRS law is discussed in Kirby (1983), Kurebayashi (1991) and Patrick and Rohlen (1987).

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First, the small stores are allowed to have more flexible opening hours than the large stores. Second, the law only allows for the establishment of a large scale retail store with the prior consent of the small retailers in the area. Third, the procedures to obtain the consent of the retailers delays the establishment of the large scale stores considerably, sometimes by 10 years [US International Trade Commission.(1990)].

The position of small retailers is also strengthened by regulations that are only imposed upon large enterprises. For instance, small retailers are not obliged to administrate their transactions, pay less taxes, and do not have to collect the 3 percent consumer tax.

### **3. Determinants of number of stores**

In this section, we shall present factors assumed to determine the change in number of stores, NUM. The determinants we consider are population growth, POP; growth in expenditures per head in the shop-type, EXP; growth in share of people living in densely populated areas, DEN; increase in car-ownership, MOB; growth in size of consumer's storage space, TAT; regulated increase in number of large retail stores, LRS; growth in share of people older than 65, OLD; and the growth in share of people that is self-employed or works in a family enterprise (all industries) on total population, SELF. For the definitions and sources of the variables we refer to the data appendix.

The variables POP and EXP constitute the changes in regional sales volume per shop-type. In periods of sales growth, entry will be higher in the retail market. We hypothesize that population growth has a higher impact on growth in number of stores than growth in expenditures does, because the capacity of a store is related to number of customers rather than to total sales value<sup>4</sup>. Handling of goods is usually less time consuming than contacts

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<sup>4</sup>In Nooteboom (1982) and Thurik (1986), it is demonstrated that labour costs of a store are determined by the number of customers rather than by the volume of purchases per customer. In other words, labour productivity increases when average purchases per customer increase.

with the clients. This might be especially true in Japan, where retailers have close relations with their clients. Furthermore, higher expenditures are not only related to the purchase of larger quantities but also to the purchase of more expensive products of higher quality. Population growth also has a supply effect, because a growth in population implies an increase in labour supply and thus an increase in the number of potential retail entrepreneurs.

The daily shopping behaviour of the Japanese customers makes a high number of stores in the neighbourhoods economically feasible. In Flath (1990), the number of stores per household in 1985 was explained using the average size of the houses, TAT, the average number of automobiles per 1000 inhabitants, MOB, and the share of people living in densely populated areas, DEN. The rationale for the use of TAT is that in areas with small houses, people keep fewer stocks of non-durables, which means that more stores selling non-durables are needed. On the other hand, in these small houses a minimum amount of furniture is used implying fewer stores selling durables. In areas with a high number of cars per 1000 inhabitants, people can travel further to do their shopping at larger stores and usually purchase larger amounts at one time. Finally, the distance between customer and store is smaller in densely populated areas. The height of population density is inversely related to the number of stores sufficient for daily shopping practice.

We follow Flath (1990) in testing whether the growth in number of large scale stores, LRS, affects the number of stores. In Flath (1990), it is hypothesised that in areas with a large number of department stores, competition has been more severe and inefficient small stores were not able to survive, implying fewer stores. In our study, we use the change in number of stores larger than 500 square meters per main shop-type,  $LRS^{app}$ ,  $LRS^{food}$ ,  $LRS^{house}$  and  $LRS^{other}$ . We distinguish four main shop-types: apparel, food, housing and other shop-types. The number of department stores larger than 500 square meters is added to the number of large stores of all four main shop-types, because department stores sell products in all categories.

The ageing of the Japanese population, OLD, is hypothesized to have three effects on number of stores. First, elderly people are less mobile and do their shopping in the neighbourhood. Second, aged people are more traditional and do their shopping in the traditional small stores. Third,



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retired people have the opportunity to set up a store themselves from their lump sum pension [Patrick and Rohlen .(1987)]. We test whether the number of stores has grown in areas with an ageing population.

We include the regional change in share of self-employed and family workers in all industries on total population, SELF, to estimate the effect of the dual structure of the Japanese labour market on number of stores. In areas where there is a strong demand for labour in large businesses, many self-employed and family workers will change occupation and join a large enterprise. This reduces the supply of low-cost labour in retailing and diminishes incentives for small store establishment.

In summary, following the demand side approach we would expect growth of population, POP, per person expenditure, EXP, and ageing, OLD, to positively influence the change in number of stores and growth of population density, DEN, mobility, MOB, and house storage space, TAT, to negatively influence the change in number of stores, NUM. A supply side view would be supported in case population, POP, ageing, OLD, and increasing self-employment, SELF, have a positive effect on NUM, whereas the magnitude of the effect of the LSRS Law depends upon the extent to which changes in number of large stores, LRS, negatively effect NUM.

In contrast to Flath (1990), who used a stationary model to estimate the impact of these social-economic variables on the number of stores in 1985, we investigate the impact of the change in these social-economic variables in a dynamic approach to determine the impact on the level of change in number of stores from 1970 to 1985. This is of particular interest, because in this period living space per person has almost doubled, possession of automobiles has more than tripled, a growing number of people are living in densely populated areas, while the number of large scale stores almost remained stable and the percentage of people being self-employed or working in family business decreased.

#### **4. Empirical results**

We investigate the importance of the developments discussed in the preceding section, using a large data set of 58 shop-types for 53 regional

entities<sup>5</sup> yielding a total of 3074 observations. All variables are taken in logarithms [cf. Flath (1990)]. We refer to the data appendix for a detailed description of the variables and the data sources. The regression results are obtained by using weighted least squares with the total sales value of the respective shop-types in the respective regions as weights. Our data set has the characteristics of a panel data set, because the data have a shop-type and regional dimension. Regular estimation techniques for panel data include the technique of fixed effects [Judge et al (1985)]. Many of our exogenous variables however vary only in the regional dimension, viz. POP, DEN, MOB, TAT, LRS, OLD and SELF. Therefore we could only include fixed effects,  $\alpha_{oi}$ , in the shop-type dimension. The following regression results are obtained (standard errors between brackets):

$$\begin{aligned}
 \text{NUM}_{ip} = & \hat{\alpha}_{oi} + 0.893 \cdot \text{POP}_p + 0.370 \cdot \text{EXP}_{ip} - 0.080 \text{DEN}_p - 0.075 \cdot \text{MOB}_p \\
 & (0.032) \quad (0.011) \quad (0.046) \quad (0.025) \\
 & + 0.350 \cdot d_i^{nd} \text{TAT}_p - 0.025 d_i^{dur} \text{TAT}_p \\
 & (0.094) \quad (0.101) \\
 & - 0.138 \cdot \text{LRS}_{ip}^{app} - 0.005 \text{LRS}_{ip}^{food} + 0.104 \cdot \text{LRS}_{ip}^{house} + 0.009 \text{LRS}_{ip}^{other} \\
 & (0.035) \quad (0.018) \quad (0.034) \quad (0.028) \\
 & + 0.122 \cdot \text{OLD}_p + 0.132 \cdot \text{SELF}_p \quad n=3074, R^2=0.679 \\
 & (0.047) \quad (0.045)
 \end{aligned} \tag{1}$$

The population elasticity<sup>6</sup> is approximately 0.9. The number of retail facilities increases almost proportionally with population. This finding supports three views on Japanese retailing, the supply side explanation, the demand side explanation, and the closeness of retailer-client relations.

<sup>5</sup>The regional areas are 46 prefectures and 7 cities with more than one million inhabitants in 1970. The data cover entire Japan, except the islands of Okinawa, which have not been returned to Japan until 1974.

<sup>6</sup>With elasticity we mean the elasticity of the change in number of stores. i.e. the population elasticity is defined as:  $\partial \text{NUM} / \partial \text{POP}$ . One should bear in mind that all variables are expressed in logarithms.

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Population growth implies an increase in the number of potential retail entrepreneurs and a higher demand for stores. Existing stores are not flexible enough to extend their customer capacity and keep market share, which may well be related to the close relations between Japanese retailers and their customers. The expenditure elasticity is 0.37. In shop-types and areas with growing demand new stores are needed but fewer than proportional to the growth in expenditures.

The hypothesis that growth of population density, DEN, is negatively related to growth in number of stores, NUM, is confirmed at the 10 percent significance level. The hypothesis that a higher degree of mobilization, MOB, leads to fewer stores is confirmed. The hypothesis that an increase in living space per person, TAT, leads to fewer stores selling non-durable goods is rejected<sup>7</sup>. In fact, a significant positive effect is found. A possible explanation for this remarkable fact is that the increase in living space is not used to increase consumer's storage capacity, leading to fewer stores, but is used by many to start a family business. This would imply that TAT becomes a supply factor.

The change in number of large scale stores per head of population, LRS, exerts a negative effect on the change in the number of stores dealing in apparel and a positive effect on stores dealing in household goods. It has no effect on the number of food and other stores. This implies that there would have been fewer apparel stores if the LSRS Law would not have been in effect. The effect of the LSRS Law on the number of food, household and other stores is not in accordance with Flath (1990). It is possible that the small retailers in these sectors have been successful in applying the LSRS Law to the extent that large scale stores only were permitted in areas where small retailers had nothing to fear of large store competition. The empirical model is not able to detect whether this is the case. However, there is no support for a strong effect of the LSRS Law, and we agree with Flath (1990) that the effect of the LSRS Law on the number of stores has only been limited and that the amendment of the law will not wipe out small stores.

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<sup>7</sup>For shop-types selling non-durable goods, the dummy variable  $d_i^{nd}$  is one and it is zero for other shop-types. The dummy variable  $d_i^{dur}$  is one for shop-types selling durable goods and zero for other shop-types.

Our two social determinants, OLD and SELF both exert a strong positive effect on number of stores, confirming the hypothesis of supply side advocates that the dual structure of the Japanese labour market has a significant impact on the Japanese retail structure. The growing number of elderly enlarges the supply of potential entrepreneurial activity, while increases in job availability in large firms in manufacturing and service industries make self-employment as retailer less attractive.

### **5. Concluding remarks and implications**

Several explanations on the abundance of retail stores in Japan have been tested in this empirical study. We conclude that the effect of the Large Scale Retail Store Law on number of stores is only limited. However, the dual character of the Japanese labour market and the demand for retail facilities have a significantly positive effect on the large number of stores in Japan. Furthermore, the results of the study allow for the argumentation that retailer-client relations are important in Japanese retailing. Extending these findings to future developments in Japanese retailing, we expect the number of stores per number of inhabitants to decline gradually. The shortages on the labour market are expected to become more and more intense, indicating the disappearance of the dual structure of the labour market. This means that fewer people are inclined to set up a store, because they can find employment in more prestigious sectors of the Japanese economy. Many small family stores will stop in the years to come, because the shopkeeper is too old and there is no successor [Suzuki (1991)]. Consumer behaviour seems to evolve slowly. Modern shop-types become more popular at the expense of small retail outlets. The amendments on the LSRS law will only limitedly facilitate the modernisation process of the Japanese retail sector.

## Appendix Data

The following data have been obtained from the Census of Commerce (CoC) and the Japan Statistical Yearbook (JSY). The index  $i$  refers to shop-type,  $p$  to region and  $t$  to year.

variable	description	Source
$NUM_{ipt}$	number of stores	CoC 3.2
$Q_{ipt}$	total sales value	CoC 3.2
$POP_{pt}$	population	JSY
$DEN_{pt}$	share of persons living in densely populated area's	JSY
$MOB_{pt}$	number of cars per 1000 citizens	JSY
$TAT_{pt}$	living space per persons in tatami mats	JSY
$DEP_{pt}$	number of department stores larger than 500 square meters per inhabitant	CoC 3.5
$LRS_{pt}^{app}$	number of apparel stores larger than 500 square meters per inhabitant	CoC 3.5
$LRS_{pt}^{food}$	number of food stores larger than 500 square meters per inhabitant	CoC 3.5
$LRS_{pt}^{house}$	number of household stores larger than 500 square meters per inhabitant	CoC 3.5
$LRS_{pt}^{other}$	number of other stores larger than 500 square meters per inhabitant	CoC 3.5
$OLD_{pt}$	share of people of 65 and older on total population	JSY
$SELF_{pt}$	share of self-employed and family workers on total population	JSY

$\dot{NUM}_{ip}$  growth in number of stores from 1970 to 1985:

$$\dot{NUM}_{ip} = \ln(NUM_{ip1985}) - \ln(NUM_{ip1970})$$

$\dot{POP}_p$  population growth:

$$\dot{POP}_p = \ln(POP_{p1985}) - \ln(POP_{p1970})$$

$\dot{EXP}_{ip}$  growth of expenditures per head in the shop-type:

$$\dot{EXP}_{ip} = \ln\left(\frac{Q_{ip1985}}{POP_{p1985}}\right) - \ln\left(\frac{Q_{ip1970}}{POP_{p1970}}\right)$$

$D\dot{E}N_p$  change in share of population living in densely populated areas:

$$D\dot{E}N_p = \ln(DEN_{p,1985}) - \ln(DEN_{p,1970})$$

$M\dot{O}B_p$  change in car-ownership:

$$M\dot{O}B_p = \ln(MOB_{p,1985}) - \ln(MOB_{p,1970})$$

$T\dot{A}T_p$  change in living space per capita:

$$T\dot{A}T_p = \ln(TAT_{p,1985}) - \ln(TAT_{p,1970})$$

$L\dot{R}S_{ip}^k$  change in number of large scale stores of main shop-type  $k$ ;

$$\begin{aligned} L\dot{R}S_{ip}^k &= \ln(LRS_{p,1985}^k + DEP_{p,1985}) - \ln(LRS_{p,1970}^k + DEP_{p,1970}) \quad \forall i \in k \\ &= 0 \quad \forall i \notin k \end{aligned}$$

$O\dot{L}D_p$  change in share of people older than 65:

$$O\dot{L}D_p = \ln(OLD_{p,1985}) - \ln(OLD_{p,1970})$$

$S\dot{E}L\dot{F}_p$  change in self and family employment;

$$S\dot{E}L\dot{F}_p = \ln(SELF_{p,1985}) - \ln(SELF_{p,1970})$$

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