Changing Trends of Japanese Retail Stores: An Empirical Study

Takayuki YAMASHITA
Professor
Shizuoka University
Ohya 836, Suruga-ku, Shizuoka City, Japan, 422-8529
E-mail: yamashita.takayuki@shizuoka.ac.jp

Farhana ZAMAN
Assistant Professor
Bangladesh University of Professionals
Mirpur Cantonment, Dhaka-1216, Bangladesh
E-mail: farhana@bup.edu.bd

Abstract

Japanese large-scale retail stores are changing along with the change of time. This paper tries to find out the current trends of Japanese large-scale retail stores. This paper also focuses on scale economies and impact of age groups on the sales of the large-scale stores. Descriptive statistics and different empirical techniques are used to analyze the data. The findings of the paper demonstrate that the convenience stores are competing strongly with department stores and supermarket stores. Small format of retailing is appealing to consumers under a significant change of population. The large-scale retail stores can enjoy a competitive advantage if they emphasize on product differentiation, thinking about mature consumers.

Key words: Large-scale Retail Stores, Scale Economies, Trends, Age Groups.
JEL Classification: D22, M21

Changing Trends of Japanese Retail Stores: An Empirical Study

1. Introduction

The large-scale retail stores in Japan are entering into a period of major transformation. Basic large-scale retailers such as department stores, supermarket stores, and specialty stores have transformed along with the change of time. Department stores purveying mainly luxury items and clothing have seen their markets continue to shrink, due to the entrance and growth of other type retailers including convenience stores. Supermarket chains, which traditionally feature large-scale stores, are defensive in the competition with convenience stores. However, now they are starting to increase the number of small-scale shops in city centers to remain competitive in the industry. This paper tries to depict the changing phenomena of the large-scale retail stores in Japan. This paper also focuses to know about the scale economies and market segment of the Japanese large-scale retail stores.

The main contribution of this paper lies in three areas. First, from the time series data of different important factors of retail stores, we can get an idea about the changing phenomena of the stores. Second, from the analysis of scale economies we can know, which type of retail stores has scale economies. Third, from the analysis of the impact of age groups on sales, we can know whether different age groups have different choice for retail store types or not and reasons of convenience stores' success.

The rest of this paper is organized as follows: the first section includes a review on the history of Japanese large-scale retail stores, and the second section includes changing trends of Japanese retail stores. The third section examines scale economies in retailing. The fourth section examines demography and retailing and the final section includes discussions on findings, conclusion and policy recommendations.

2. Large-scale Retail Stores in Japan

According to Akahori (2007), the first "modern-style" department store in Japan was Mitsukoshi, founded in 1904. However,when the roots are considered; Matsuzakaya has an even longer history, dated from 1611. Mitsukoshi was founded by one of the oldest banks of Japan, named Mitsui. Adopting the American system, Osuke Hibi, the executive manager of Mitsukoshi store, issued the "Department Store Declaration" in 1904, and this marked the dawn of modern department stores in Japan. Following Mitsukoshi's example, four other retail firms, namely Takashimaya began operation as a department store in 1922, Matsuzakaya (incorporated in 1907), Daimaru (founded in 1920) and Shirokiya, embraced western styles to become modern retailers.

During the nation's economic prosperity of the 1980s, which is referred to as "Bubble Period", Japanese department stores had no difficulty attracting consumers even though they were in severe competition with each other in the big cities.

The end of the department store's prosperous period gave rise to a new type of retailer: the supermarket stores[1]. Supermarket stores made their debut in Japan in the 1950s (Iwama, 2009). Kinokuniya was the first supermarket to adopt the self-service format, and it started in 1953 in Aoyama, Tokyo. In 1957 Daiei opened, followed by Ito-Yokado and other supermarket stores. Japanese supermarket stores sell groceries, clothing and household commodities including home appliances and call them *ryohan-ten* (mass retailer) due to the unique characteristic of being supermarket and discounters at the same time. The success of supermarket stores is because of the mass sales and low price.

[1] In this paper, "supermarket stores" are general supermarket stores, excluding specialty supermarket stores, specialty stores and semi-specialty stores.

Both large-scale department stores and supermarket stores were constrained in their development of new stores due to regulation by the Large-scale Retail Store Law. The large-scale supermarket stores put their focus on the development of small-scale retail stores (Takahashi and Fluch, 2009) and Japanese consumers were again deeply influenced by a boom in convenience stores (Iwama, 2009).

The first convenience store[2] in Japan appeared in 1969. In 1974, Ito-Yokado joined forces with the Southland Corporation of the United States and launched Seven-Eleven in Japan. Following this Daiei setup Lawson in 1975, Seiyu set up Family Mart in 1978 and the convenience stores are still growing up in Japan. The stores can respond to shoppers' demands for convenience, and continue to change consumer habits in Japan.

So the Japanese large-scale retail stores have three important periods. First period is the start of department stores in 1904; second period is the start of supermarket stores in 1953 and third period is the start of convenience stores in 1974. So it is important to know what happened in the retail structure after the start of supermarket in 1953 and convenience stores in 1974. So in the following section the changing structure of the retail stores are presented.

3. Changing Structure of Japanese Retail Stores

Retail trade is an important industry in Japan. The retail trade accounts for 6.0% of GDP (2012) and 11.3% in employment (11.3%, 2010). The retail structure of Japan has some distinctive features, and it is said that these are changing gradually. In the following table the changing features of the retail stores are presented:

[2] Convenience stores are self-service retailers who deal mainly in food and beverages, and have a sales floor area between 30m^2 and 250m^2 and whose business is open for 14 hours or more per day.

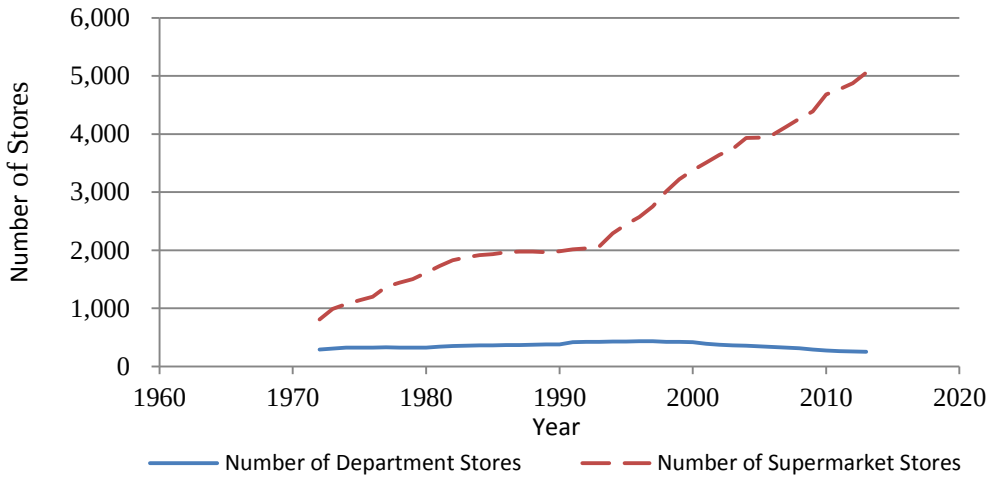
Table 1: Changes in the Structure of Retail Stores

Features / Year	Number of establishments	Number of employees	Annual sales (millions of yen)	Employees per store	Floor space per store (m^2)
1952	1,079,728	2,309,699	...	2.14	...
1954	1,189,045	2,716,761	...	2.28	...
1956	1,201,273	3,005,173	...	2.50	...
1958	1,244,629	3,273,371	3,548,626	2.63	...
1960	1,288,292	3,489,293	4,315,387	2.71	24.13
1962	1,271,975	3,549,811	6,148,961	2.79	25.95
1964	1,304,536	3,810,819	8,349,588	2.92	29.96
1966	1,375,394	4,193,421	10,683,623	3.05	32.60
1968	1,432,436	4,646,212	16,507,256	3.24	33.22
1970	1,471,297	4,926,004	21,773,438	3.35	37.19
1972	1,495,510	5,141,377	28,292,696	3.44	40.86
1974	1,548,184	5,303,378	40,299,895	3.43	43.54
1976	1,614,067	5,579,800	56,029,077	3.46	46.45
1979	1,673,667	5,960,432	73,564,400	3.56	51.23
1982	1,721,465	6,369,426	93,971,191	3.70	55.44
1985	1,628,644	6,328,614	101,718,812	3.89	58.03
1988	1,619,752	6,851,335	114,839,927	4.23	63.00
1991	1,591,223	6,936,526	140,638,104	4.36	69.07
1994	1,499,948	7,384,177	143,325,065	4.92	81.09
1997	1,419,696	7,350,712	147,743,116	5.18	90.22
1999	1,406,884	8,028,558	143,832,551	5.71	95.15
2002	1,300,057	7,972,805	135,109,295	6.13	108.16
2004	1,238,049	7,762,301	133,278,631	6.27	116.42
2007	1,137,859	8,062,196	73,564,400	7.08	131.53
2012	1,033,358	7,831,212	93,971,191	7.57	...

Source: Statistics Bureau, Ministry of Internal Affairs and Communications

From the above table, it is seen that the total number of retailers started decreasing from 1982. However, employees per store and floor space per store are increasing. It seems that the Japanese retail stores are getting larger over the time.

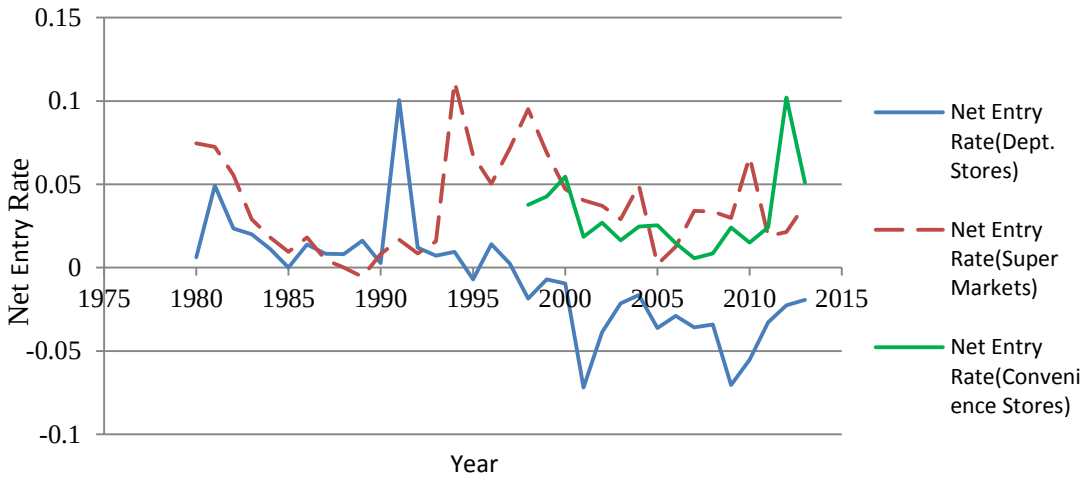
As the Japanese retail stores are increasing its operation in size, so it is important to know about the total number of the large-scale retailers that is department stores and supermarket stores. Figure 1 shows the total number of department stores and supermarket stores from 1972-2013. Figure 1 shows that the number of supermarkets stores is increasing in a very fast way while the number of department stores shows a gradual declining trend.



Source: Statistics Bureau, Ministry of Internal Affairs and Communications

Figure-1: Number of Large-Scale Retailers

Although the number of supermarket stores is increasing, it is said that large-scale retailers are facing tremendous competition from convenience stores. Figure 2 shows the net entry rate of three types' retailers. The net entry rate of department stores shows a downward trend, whereas the net entry rate of supermarket stores and convenience stores shows an upward trend.

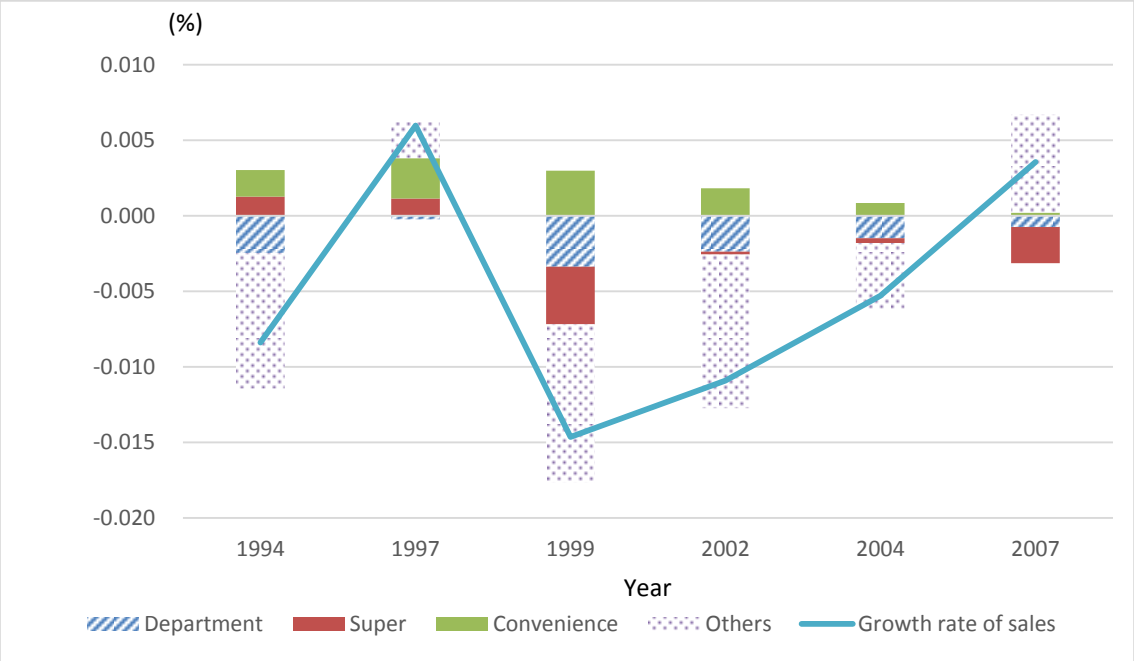


Source: Statistics Bureau, Ministry of Internal Affairs and Communications

Figure-2: Net Entry Rate of Stores[3]

These three types of stores contribute the growth of total sales in retail trade as in follows:

[3] Data of convenience stores are available from 1997. So the net entry rate of convenience stores is shown from 1997.



Source: *Census of Commerce, Consumer Price Index*

Figure-3: Contribution to Total Sales

From a closer look at the contributions of percent change in total sales of the three major types, convenience stores component shown the consistent positive correlation with total sales growth.

Increase in the number of supermarket stores, an upward trend in the net entry rate of the convenience stores, and a positive contribution to the total sales of the convenience stores arise with a question. What can be the reasons of an upward trend in net entry rate? To know the answer to that question, in the next section supply side conditions of the three types' retailers are presented.

4. Economies of Scale in Retailing

In retailing, the term 'scale economies' describes the relationship between efficiency or productivity and size (Zhuang, Zhou &Herndon, 2002). When a particular establishment, organization, or competitive structure converts resources into output less expensively than do other establishments or competitive structures, it is more efficient. When this efficiency is based upon the size of operation, then scale economies are said to exist. There are two methods of measuring scale economies in the economics and marketing literature – the "technical" approach and the "pecuniary" approach. The technical approach is based on the production function, whereas the pecuniary approach is based on the concept of statistical cost curves (Ingene, 1984).

Scale Economies in retailing may occur at company level (in terms of savings from bulk purchasing, efficient use of management, logistics, *etc.*); and at store level (savings on construction costs, store operation, staffing, *etc.* (Guy, Bannison &Clarke 2005).This paper is going to examine scale economies at store level.

To find out the scale economies of the major types of retailer in Japan, the technical approach which is based on the production function is used. The critical inputs into the production function are capital and labor. The production function technique is used to measure the scale economies of stores by Ingene (1984). He considered output as sales, and inputs are measured in physical terms such as square meter of floor space and number of employees. Scale economies are measured by the sum of coefficients with constant returns being denoted as one,

decreasing returns as a value less than one and increasing returns as a value greater than one. Ingene's approach is followed in this paper to find out the scale economies of Japanese retail stores.

The Cobb- Douglas production function is:

$$Q = AL^{\alpha}K^{\beta} \quad (1)$$

where Q=Output, L=Labor and K=Capital. The Cobb-Douglas production function is transformed into the following log–linear function:

$$\log Q = \log A + \alpha \log L + \beta \log K \text{ Log} \quad (2)$$

where,

Q= Sales per store.
A=Constant term.
L = Employees per store (labor)
K= Square meter per store (capital)

Table 2 shows the result of the regression analysis by using equation (2) for department stores. There is an evidence of increasing returns for department stores over time. The marginal contribution to output of a one percent increase in the input is considerably greater for employees than for floor space.

Table 2: Economies of Scale –Department Stores[4]

Year	Constant (lnA)	Employees per store (α)	Square meter per store (β)	Adjusted R^2	Sum of coefficient ($\alpha+\beta$)
1991	-0.245	1.086*	0.374**	0.890	1.456
	(-0.211)	(7.466)	(1.970)		
1994	0.114	1.014*	0.375***	0.892	1.389
	(0.097)	(5.455)	(1.705)		
1997	-0.160	1.007*	0.417	0.850	1.424
	(-0.118)	(3.909)	(1.508)		
1999	-0.742	1.148*	0.385*	0.880	1.533
	(-0.730)	(6.873)	(2.146)		
2002	-0.122	1.143*	0.324	0.808	1.467
	(-0.104)	(6.295)	(1.725)		
2004	-0.922	1.294*	0.326***	0.863	1.62
	(-0.773)	7.16	1.718		
2007	-2.899**	0.842*	0.789*	0.868	1.63
	(-1.934)	(4.767)	(3.472)		
2012	-3.831*	0.608*	1.003*	0.983	1.61
	(-5.902)	(5.958)	(39.464		

Note: * Probability>.01
** Probability>.06
*** Probability>.1
Source: *Census of Commerce, 2012 Economic Census for Business Activity*

[4] t- values are in parenthesis. In Ingene's paper t-values are calculated for individual coefficients and sum of coefficients. In this paper t-values are calculated for individual coefficients only.

Table 3 shows the economies of scale for supermarket stores. The marginal contribution of employees to output is greater than floor space. It seems that having large floor space is no more an attractive strategy for supermarket stores.

Table 3: Economies of Scale –Supermarket Stores

Year	Constant (lnA)	Employees per store (α)	Square meter per store (β)	Adjusted R^2	Sum of coefficient ($\alpha+\beta$)
1991	0.453	0.646*	0.559*	0.710	1.205
	(0.509)	(3.84)	(3.968)		
1994	1.896**	1.118*	0.112	0.800	1.230
	(2.260)	(6.118)	(0.678)		
1997	3.153*	0.699*	0.206	0.590	0.905
	(2.876)	(5.831)	(1.446)		
1999	1.834***	1.019*	0.15	0.770	1.169
	(1.789)	(8.791)	(1.089)		
2002	2.817**	0.797*	0.149	0.697	0.946
	(1.910)	(7.076)	(0.768)		
2004	3.763***	0.724*	0.084	0.702	0.808
	(2.771)	(7.203)	(0.484)		
2007	5.135*	0.703*	-0.063	0.613	0.640
	(4.765)	(7.426)	(-0.456)		
2012	5.308*	0.985*	-0.228	0.762	0.757

Note: * Probability>.01
** Probability>.06
*** Probability>.1

Source: *Census of Commerce, 2012 Economic Census for Business Activity*

Table 4 shows economies of scale for convenience stores. For convenience stores there is a moderately increasing trend of scale economies.

Table 4: Economies of Scale –Convenience Stores

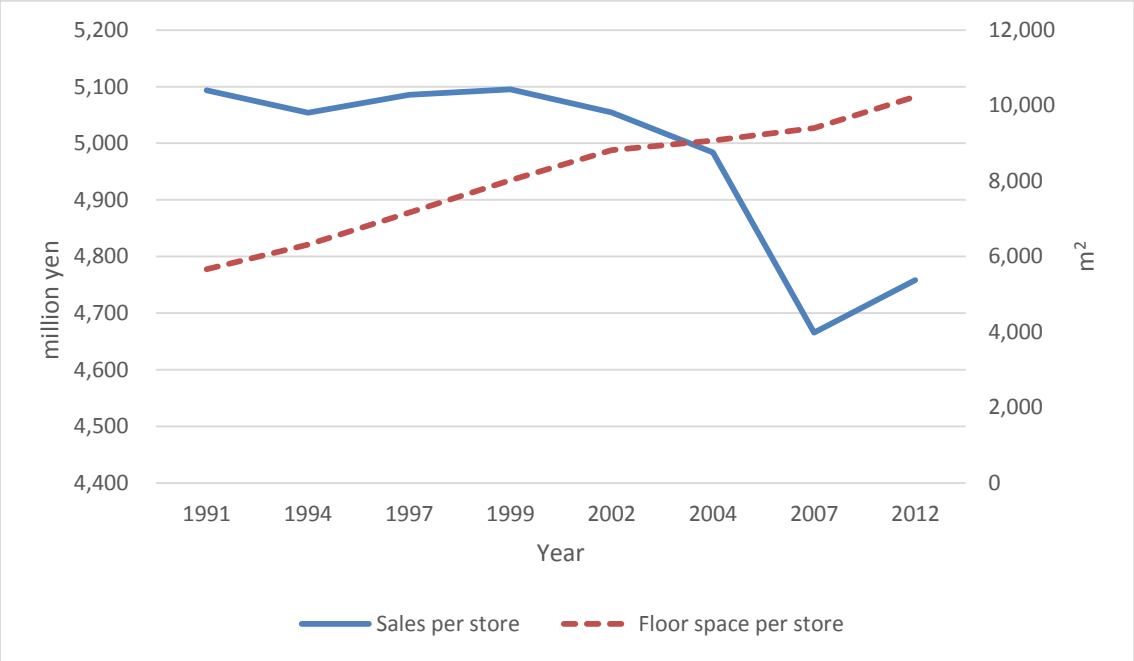
Year	Constant (lnA)	Employees per store (α)	Square meter per store (β)	Adjusted R^2	Sum of coefficient ($\alpha+\beta$)
1991	0.791	0.832*	0.517 **	0.830	1.349
	(0.701)	(12.229)	(1.979)		
1994	-0.458	0.617*	0.855*	0.820	1.472
	(-0.493)	(9.97)	(3.934)		
1997	0.633	0.602*	0.621*	0.800	1.223
	(0.604)	(9.8)	(2.547)		
1999	0.699	0.603*	0.594*	0.790	1.197
	(0.729)	(11.153)	(2.752)		
2002	0.184	0.576*	0.716	0.677	1.292
	(0.182)	(8.66)	(3.252)		
2004	2.426**	0.570*	0.242	0.656	0.812
	(1.903)	(8.552)	(0.86)		
2007	1.505	0.617*	0.401	0.678	1.018
	(1.209)	(9.698)	(1.526)		
2012	1.116	0.442*	0.605*	0.699	1.047
	(1.140)	(8.325)	(2.827)		

Note: * Probability>.01
** Probability>.05
*** Probability>.1
Source: *Census of Commerce, 2012 Economic Census for Business Activity*

Comparing Table 4 with Table 3 gives us an interesting implication. It has been believed that economies of scale offers all kind of advantages to supermarket stores. Low prices are realized by mass display, volume sales, efficient transportation, *etc*. The key to success in retailing was the ability to open more and bigger shops. However, the large outlets seem to be gradually losing their advantages.

Figure 4 shows that a larger size does not lead to the success of sales in supermarket stores. A similar pattern is reported in the UK retail trade[5].

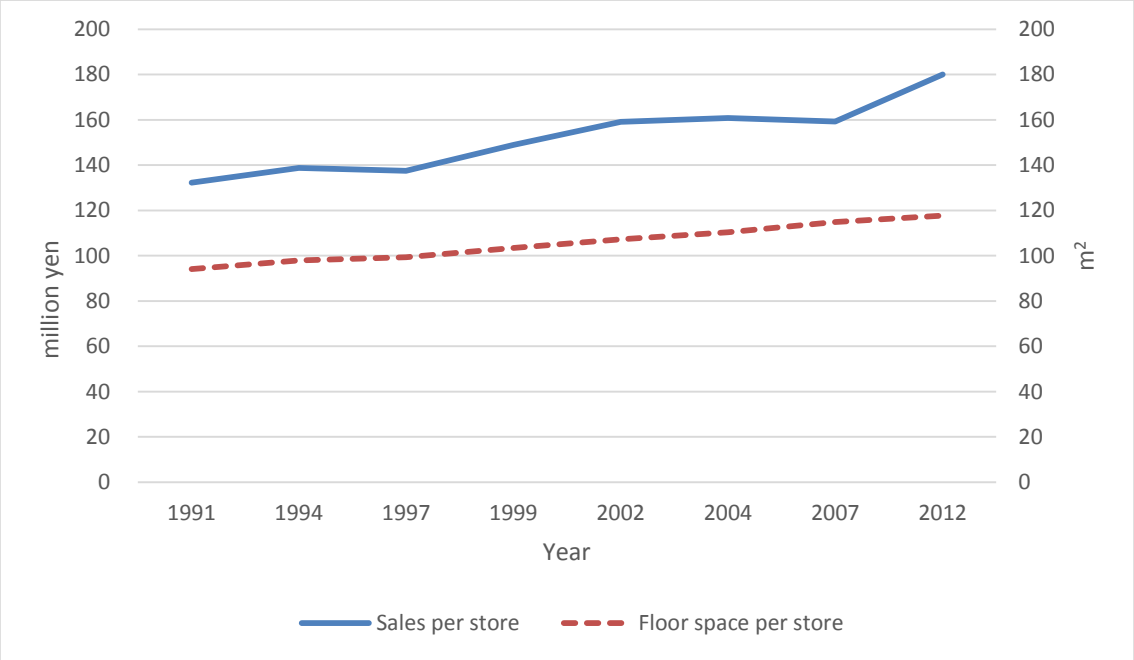
[5] "Supermarkets sense that size may no longer be key to conquering universe," *The Observer*, 17 March 2013, http://www.guardian.co.uk/business/2013/mar/17/supermarkets-realise-size-no-longer-key-to-universe. Access Date: 2014.12.13.



Source: *Census of Commerce, 2012 Economic Census for Business Activity, Consumer Price Index*

Figure-4: Recent Trend in Supermarket Stores

On the other hand, there is a room for executing economies of scale in convenience stores (Figure 5).



Source: *Census of Commerce, 2012 Economic Census for Business Activity, Consumer Price Index*

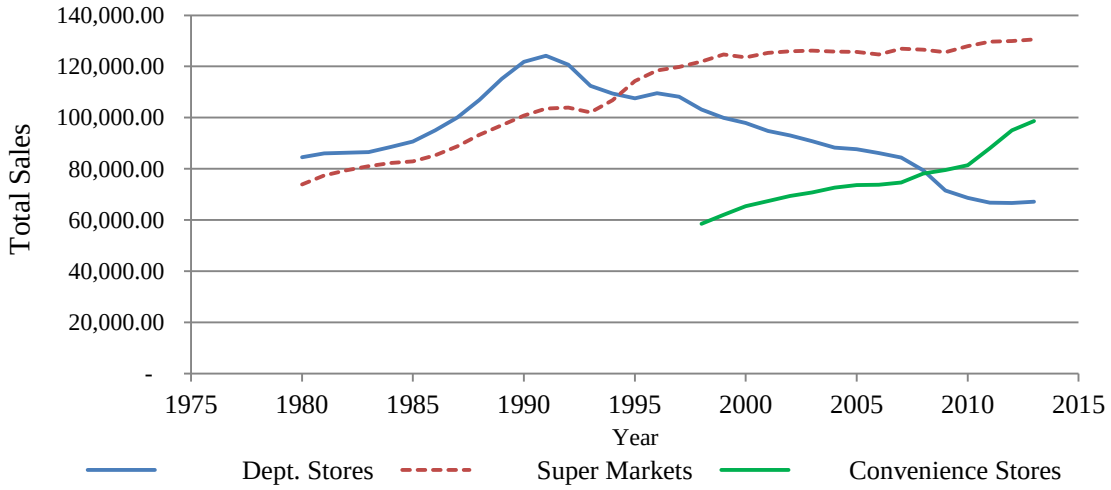
Figure-5: Recent Trend in Convenience Stores

Consequently, we can see an upward trend of net entry rate in supermarket stores and convenience stores and a downward trend in department stores.

Does the increase in net entry rate of convenience stores and supermarket stores also show increase in their total sales? To know the answer of that question, total sales of stores are shown in Figure 3. It seems that as the total number of supermarket stores and convenience stores are increasing, their total sales are also increasing.

Table 2, 3 and 4 also show an evidence of decreasing return in supermarket stores, an increasing return in department stores and a moderately increasing return in convenience stores. Consequently, we can see an upward trend of net entry rate in supermarket stores and convenience stores and a downward trend in department stores.

Does the increase in net entry rate of convenience stores and supermarket stores also show an increase in their total sales? To know the answer of that question, total sales of stores are shown in Figure 6. It seems that as the total number of supermarket stores and convenience stores are increasing, their total sales are also increasing.



Source: Statistics Bureau, Ministry of Internal Affairs and Communications

Figure-6: Total Sales of Stores[6]

According to Ingene (1984) consumer embraced large size stores for some lines of trade and rejected them in other lines. Consumers reveal their preferences through their shopping behavior, then these varied scale economies represent differing routes to enhanced consumer well-being. So the next section of this paper is trying to know whether consumer buying behavior based on their age groups has any impact on the sales of large-scale retail stores and whether convenience stores are competing with large-scale retailers because of the consumer buying behavior.

5. Demography and Retailing

5.1. Demography and Retailing

Now we investigate the demand side. A chronic problem in Japan is its rapidly aging population. The total population of Japan reached 127.8 million in 2011. By 2020, the number of Japanese citizens over the age of 65 years is expected to increase by 20.4% and to reach 35.7 million. Due to these growing numbers, the proportion of old age population within the total population will increase by an average rate of 12% over the 2011-2020 periods. In comparison, the

[6] Total sales are in million yen and adjusted with inflation.

proportions of other population-age segments will see double-digit decreases over the same period (Statistics Bureau of Japan).

Demographic changes are important factors to consider for the retailers to increase their market share. Changes in the age groups may have an impact on the sales of stores. Factors such as age, income, gender, and social class are regarded as reasonably good predictors of buyer behavior. Lumpkin and Burnett (1992) conducted a study on the determinant factors of store type choice of the mature consumer in USA for wearing apparel. They conducted a questionnaire survey on 1,521 mature consumer (65 or over) and found that 54.7% of the mature consumer spend most at department stores, 15.4% at specialty stores, 17.1% at discounts stores and 12.1% at in-home delivery to purchase their wearing apparel.

To know about the effect of age groups on sales per store Pearson correlation analysis is conducted on the population of different age groups and sales per store of department stores, supermarket stores and convenience stores. The population is divided into two groups: 15-64 is working age population and 65 and over is aged population. The sales data for convenience stores are available from 1997. For this, correlation is conducted on the data of 1997-2013.The result of the correlation analysis is presented below.

Table 5: Correlation between Sales per Store and Age Group of Population

Age Groups	Sales per department Stores	Sales per supermarket stores	Sales per convenience stores
Population between 15-24	0.993	-0.665	-0.855
Population between 25-34	0.74	-0.802	-0.605
Population between 35-44	-0.894	0.646	0.853
Population between 45-54	0.907	-0.692	-0.693
Population between 55-64	-0.793	0.508	0.562
Population over 65	0.700	-0.976	0.879

Note: Correlation is significant at the .01 level (2- tailed)

From Table 5, it seems that middle age working people prefer shopping at supermarket stores to shopping at convenience stores and department stores. On the other hand, mature consumers prefer shopping at convenience stores and department stores to shopping at supermarket stores.

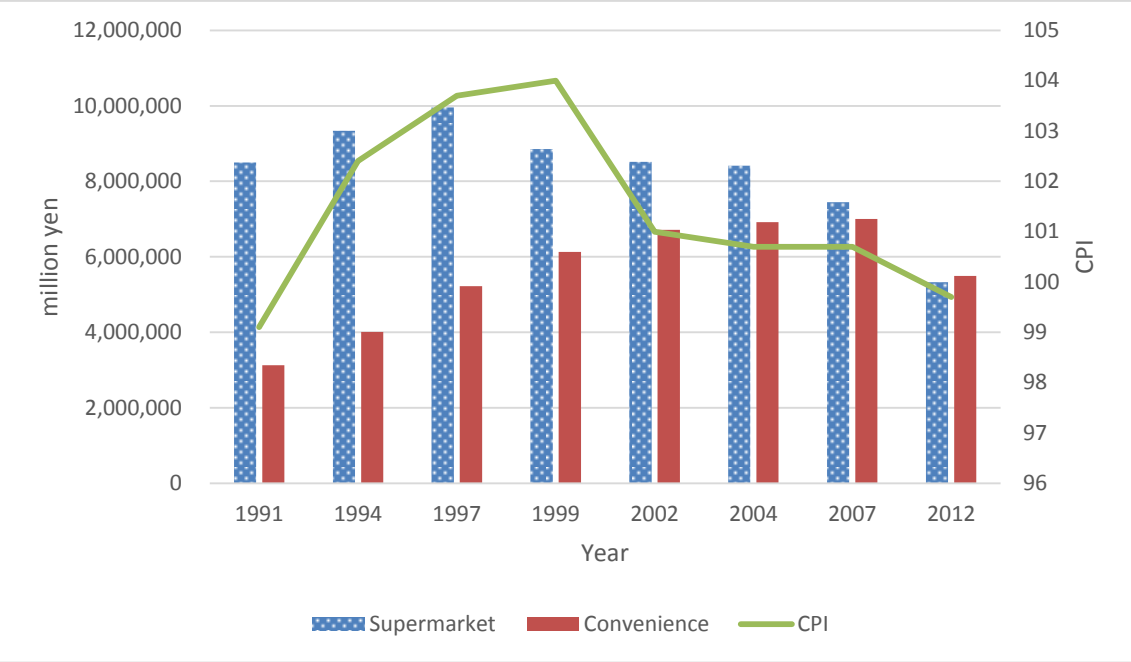
As part of its ongoing research onto the mature consumer, A.T. Kearney's Global Business Policy Council launched a global survey of 2,947 people in 23 countries. Participants are from cities, towns and rural areas, belonging to all income brackets and age groups (60s, 70s and 80s). Geographic breakdown of study participants is roughly one-third in the euro zone, 22 percent in the BRIC countries, 14 percent in other emergent markets and 12 percent in the United States. These countries account for around 60 percent of the global population. The study found that the older the consumers are, the more they prefer smaller stores and shopping closer to home (68 percent), and the more likely they are to walk to the shops rather than drive or be driven. Proximity is almost always the main reason for choosing a specific store. The mature consumers seek quality products, are loyal to brands and are not particularly price sensitive — even if their incomes are below average levels.

So the result of this paper is similar to the findings of previous studies as this paper found that the mature consumer (65 and over) has a positive influence on the sales of department stores and convenience stores.

From the result of the correlation analysis it seems that department stores are getting competitive advantage from their well- known brand and variety of goods, whereas supermarket stores are enjoying the advantage of low priced products and convenience stores are convenient for their location and variety in service.

5.2. Prices and Retailing

Competition among retailers affects retail pricing. Figure 7 shows the relationship between sales and consumer price index.



Source: *Census of Commerce, 2012 Economic Census for Business Activity, Consumer Price Index*

Figure-7: Sales and CPI

Price competition was a key strategy for success among large-scale retailers in 1990s (See Yamashita, Nogata, and Doi (2000)). However, under the deflation phase, consumers change their consumption habit. Low price realized by large store size does not matter. Consumers are shopping in smaller outlets more often than ever before.

6. Conclusion and Policy Recommendations

Japan's domestic retail market is shrinking because of the declining and aging population. The total sales trends of the large-scale retail stores show a mixed picture. Total sales of supermarket stores are increasing, while total sales of department stores are decreasing after 1990. Total sales of convenience stores are increasing in a fast way, and it exceeded the sales of department stores in 2008. Convenience stores establish a dominant presence in certain areas. It seems that the strategy of having convenient characteristics, using an efficient distribution and inventory management system, and ability to develop products closely tailored to consumer needs are working well for the convenience stores.

Average floor space of the retail stores is increasing. However, nowadays, it seems that large floor space is not an attractive strategy to be competitive in retail trade.

From the analysis of scale economies, it is found that there were increasing returns to scale for supermarket stores in 1990s, but there are not in 2000s. Even in 1990s, the coefficient of floor space per store is not significant. Employees are contributed to the sales per store only. Same result is observed for convenience stores, although there are moderate increasing returns to scale. Only department stores are enjoying scale economies from floor space and employees. The large-scale retailers need to consider this fact. Supermarket stores and department stores need to generate innovative ideas and services to survive in competitive retail trade. They must strive to meet the diversifying needs of consumers — ranging from elderly couples to single-member households.

From the analysis of age groups, it is found that sales per supermarket stores are influenced by the young and working age population. The young and working age people are conscious about price of products. The supermarket stores sell products cheaper than convenience stores and department stores. Supermarket stores can attract the working age population for this reason, whereas 65 and over age groups has a positive influence on the sales per convenience store and department stores. Mature consumers prefer convenience stores may be for their convenient locations, and they prefer to visit department stores for the variety of goods and availability of luxury products. The Baby boomers those born during the late 1940s are retiring now and enjoying high disposable income and time. They may prefer to purchase the luxury products. The retailers need to consider the fact. They can earn a good profit margin if they can segment the market based on the changing demography of Japanese society.

All large-scale retail businesses should strive to increase the level of customer convenience. They need to shorten the time for shopping as well as consider offering home delivery of customer purchases, especially in light of the growing ranks of households composed of elderly people.

References

Akahori, N. (2007), "The Japanese Department Store as a Fantasy World", Retrieved from: http://www.apocs.jp/apocs_04_akahori.pdf, Access Date: 2014.10.13.

Guy,C., Bennion, D., and Clarke, R.(2005), "Scale Economies and Superstore Retailing: New Evidence from the UK",*Journal of Retailing and Consumer Services*, pp.73-81, Retrieved from:http://www.sciencedirect.com/science/article/pii/S0969698904000244, Access Date: 2014.10.30

Ingene,C.A.(1984), "Scale Economies in American Retailing: A Cross Industry Comparison",*Journal of Macromarketing*,Vol.4(2),pp.49-63.

Iwama, N. (2009), "The Change of Japanese Department Stores' Cultural Facilities during One Hundred Years," 『地理空間』Vol.2 (1), pp.1-16.

Lumpkin, J.R. and Burnett, J.J. (1992),"Identifying Determinants of Store Type Choice of the Mature Consumer," *Journal of Applied Business Research*, Vol.8 No.1, pp.89-102.

Takahashi,I.and Fluch,H.(2009), "Retailing in Japan: Overview and Key Trends",*Journal of European Retail Research*, Vol. 23, Issue II,pp-145-162.

Walker, M. and Mesnard, X.(n.d.),"What Do Mature Consumer Wants?" *A .T. Kearney's Global Maturing Consumer study*, Global Business Policy Council.

Zhuang,G., Zhou,N., and Herndon Jr,N.C. (2002), "Scale Economies of Department Stores in the People's Republic of China," *International Review of Retail, Distribution and Consumer Research*,Vol.12:1,pp.3-12.

Statistics Bureau of Japan, Ministry of Internal Affairs and Communications, website: http://www.stat.go.jp/english/data/jinsui/tsuki/index.html

Yamashita,T., Nogata,H., and Doi E.(2000), "Why is the Price Level So High in Shizuoka City?: A Comparative Study on the Effect of Regulations," 静岡大学『経済研究』Vol.4(3), pp.41-52.

Yamashita,T. & Zaman,F.(2015), "Contemporary Trends in Japanese Retail Stores,"静岡大学『経済研究』Vol.19(4), pp.27-40.