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The Longevity of the Japanese Big Businesses

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Abstract: Though survival is important to firms, especially to the Japanese big businesses, there are few empirical studies on their longevity. This paper conducts the statistical analysis on the longevity of the Japanese big businesses using data on 1,273 listed firms in the first section of Tokyo Stock Exchange. The result indicates that the longevity of the Japanese big businesses may go beyond a century on average, and the longevity had increased gradually in the post-WWII period. These findings suggest that the Japanese big businesses are stable. This paper also explores the relationship between this stability and the Japanese corporate systems.

Keyword: Longevity, Japanese big businesses, corporate systems

Survival is one of the most substantial goals for the Japanese big businesses. For one thing, presidents of Japanese firms are frequently quoted talking about the company's aim for survival (see, for example, Nihon Keizai Shinbun, 2002, January 5), and many refer to survival purposes in their cases of mergers (Shimizu, 2001).

Besides, survival has been repeatedly credited of its importance in classical management studies. For example, Drucker (1954) suggested that survival is of importance for firms, especially for the big businesses. Selznick (1957) also pointed out that an organization had a concern for self-maintenance (chap. 1, especially pp. 15-22). Problems related to the survival of firms are also mentioned in Barnard (1938) and Simon (1947)

Moreover, some population ecology and strategic management studies have investigated the effects of firm behavior on survival (Hannan & Freeman, 1989; Suarez & Utterback, 1995).

Nevertheless, not much empirical study exists on the time period of survival with the Japanese big businesses, that is, longevity of the Japanese big businesses. Nikkei Business (1984) conducts

something close to longevity analysis of the Japanese big businesses, however, its analytic method is not quite dependable (Shimizu, 2001).

Thus, this paper will study the Japanese big businesses on their length and aspects of longevity, and furthermore, will investigate how these length and aspects of longevity are reflected in corporate management. First, we will discuss how we measure the longevity of the Japanese big businesses.

Measurement of the Longevity

To conduct our research, we have to consider how we measure longevity first.

In this paper, we concentrate on the Japanese big businesses. As for the "Japanese big businesses," firms listed in Tokyo Stock Exchange (TSE), especially ones listed in the first section of TSE, has commonly been sampled (Odagiri, 1992, Sheard, 1994). Thus we will use the listed firms in the first section as our sample.

Generally speaking, a firm in the first section is recognized as an important and outstanding firm. To put it the other way round, delisting from the first section may indicate the downfall of the delisted firm, even if the firm does not go bankruptcy. Accordingly, it seems reasonable to think that the duration for which firms are listed in the first section of TSE (hereafter, the listed duration) indicates a kind of "vitality," that is, something related to their longevity.

Because of this, we will use the listed duration as the surrogate of firm longevity.

Research Design

Data

We conducted our statistical analysis on a set of 1,273 firms that were listed in the first section of TSE from 1949, when TSE was established, to 1998. Since there are some institutional differences between the pre-WWII and post-WWII security markets, we have omitted the 485 firms that were already listed at the time of the establishment of TSE in 1949 (see Shimizu, 2001, for detail on the data set).

We divided the reasons of delisting into five categories: bankruptcy, having been absorbed by another firm, the application of delisting criteria, reassignment to the second section, and others. Table 1 gives details on the composition of the sample.

The primary sources of our data are *Soritsu 40 Shunen Kinen Tokyo Shoken Torihikijo Shiryoshu* [40 Year History of the Tokyo Stock Exchange], *Soritsu 30 Shunen Kinen Tokyo Shoken Torihikijo Shiryoshu* [30 Year History of the Tokyo Stock Exchange], *Tokyo Shoken Torihikijo 20 nen-shi* [20 Year History of the Tokyo Stock Exchange], *Tokyo Shoken*

Table 1. Composition of the Data Set

Total Number of Firms	1,273
Firms Listed by 1999	1,107
Number of Firms Delisted	166
Bankruptcy	47
Absorbed	48
Application of Delisting Criteria	21
Reassignment to the 2nd Section	47
Others	3

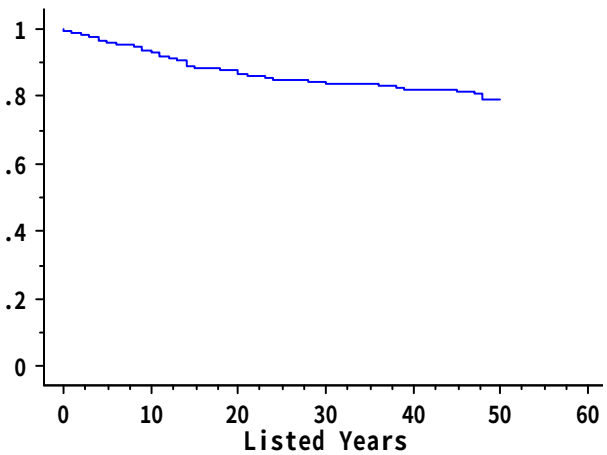
Torihikijo 10 nen-shi [10 Year History of the Tokyo Stock Exchange]. The secondary sources are *Shoken Torihiki Nenpo* [The Annual Securities Statistics], formerly *Tosho Tokei Nenpo* [The Annual Statistics Report of the Tokyo Stock Exchange], and *Daiyamondo Kaisha-Yoran* [Diamonds' Corporate Directory].

Statistical Method

We made our analysis using event history analysis. We first performed nonparametric and parametric estimations of the pattern of the listed duration (Blossfeld, Hamerle, & Mayer, 1989). Next we analyzed the effect of changes in the times using Cox regression model (Cox & Oakes, 1984).

For further details on these statistical methods, see, for example, Kalbfleish and Prentice (1980), Cox and Oakes (1984), and Blossfeld, Hamerle, and Mayer (1989).

Figure 1. Kaplan-Meier Plot of the Listed Duration



Result

First, we investigated the listed duration of the overall population of our observations. Figure 1 presents the Kaplan-Meier estimate of the listed duration. The figure shows that the curve falls gently, and approximately 20 percent of the firms had been delisted within the 45 year period.

However, this curve is truncated on the right because our observation period was relatively short compared to the listed durations of our samples. We therefore used Weibull distribution, commonly used in event history analysis, to analyze the duration and calculated the mean and the median listed duration. The results are shown in Table 2. This table indicates that both the mean and the median listed duration may exceed a hundred years.

Moreover, the results shown in Table 2 indicate another characteristic of the listed duration. The scale parameter estimate, which denotes the shape of the distribution, is approximately 1. This result

Table 2. Weibull Regression Model

Variables	Coef.
Intercept	5.38***
	(0.17)
Scale	1.10
	(0.08)
Mean duration of listing (year)	228.28
Median duration of listing (year)	145.22
Log likelihood	–634.88

note: †p<0.1, *p<0.05, **p<0.01, ***p<0.001.
Standard errors are in parentheses.

Table 3. Cox Regression Model for the Effects of the Times

	All Delistings		Bankrupt and Absorbed	
Variables	Coef.	Hazard Ratio	Coef.	Hazard Ratio
1949-54	4.47***	87.04	3.90***	49.18
	(0.62)		(0.69)	
1955-59	2.31***	10.07	2.32***	10.18
	(0.65)		(0.70)	
1960-64	3.64***	38.27	2.53***	12.61
	(0.56)		(0.62)	
1965-69	3.01***	20.34	2.43***	11.36
	(0.57)		(0.61)	
1970-74	1.83*	6.25	1.22†	3.41
	(0.59)		(0.62)	
1975-79	0.93	2.54	-0.14	0.87
	(0.64)		(0.88)	
1980-84	0.29	1.34	-0.25	0.78
	(0.66)		(0.78)	
1990-94	0.03	1.03	0.10	1.10
	(0.66)		(0.66)	
1995-98	1.32*	3.76	1.32*	3.76
	(0.56)		(0.56)	
Recession Period	0.78	2.19	0.14	1.15
	(0.18)		(0.25)	
Log Likelihood	252.44		131.18	
Test				
d. f.	37		37	

Notes: †p<0.1, *p<0.05, **p<0.01, ***p<0.001. Standard errors are in parentheses. All variables are dummy variables. We added category of business dummies (27 variables) as control variables, the result of which we do not show for abbreviation.

suggests that the (instantaneous) rate of delisting at any moment is nearly independent of the listed years. To put it another way, the result is not consistent with the "liability of newness" hypothesis, which have been argued by researchers in organizational ecology (e.g., Hannan & Freeman, 1989).

Finding 1: The average (mean and median) listed duration may go beyond a century.
Finding 2: The rate of delisting is nearly constant.

Second, we also investigated the effects of changes in the times. It seems reasonable to suppose that the times, to some extent, would affect the listed durations of firms. To consider this issue, we divided our observation period into ten periods: 1949-54, 1955-59, 1960-64, 1965-69, 1970-74, 1975-79, 1980-84, 1985-89, 1990-94, and 1995-98. Then, we included these ten periods as dummy variables (except for the period 1985-89).

The column titled "All Delistings" of Table 3 shows the result. It indicates that the listed duration extended gradually until the early 1980s, and then remained steady from the 1980-84 period to the 1990-94 period. However, there is also some fluctuation. The result shows that in the period 1949-54 firms have a very high delisting rate, that is,

a very short listed duration, and the delisting rate decreased during 1955-64. In the period 1960-64, the rate increased slightly and then decreased gradually in the following periods until the 1980s. Moreover, the delisting rate has increased in the latter half of 1990s. The rate of delisting in 1995-98 is lower than the rate in 1970-74.

However, these results might have been influenced by institutional change in 1961 (the establishment of the second section of TSE). Therefore, we concentrated on the cases involving bankruptcy and absorption. The result of this analysis is shown in the column titled "Bankrupt and Absorbed" of Table 3. This result indicates a similar trend for the most part to the "All Delisting" case. However, the rates in 1975-79, 1980-84, 1990-94 are approximately equal to the rate in 1985-89. Furthermore, the rate in 1995-98 is about the same as the rate in 1970-74.

Finding 3: The listed durations of firms increased gradually, and then remained steady from 1949-54 to 1991-94, however there was some fluctuation.

Finding 4: In the latter half of the 1990s there has been a high rate of delisting, compared to 1980s and the first half of 1990s.

Discussion

In this section, we consider the implications of our findings.

Finding 1 implies that the Japanese big businesses have considerably longer life spans than small firms in Japan and in the U.S., since the listed duration of the Japanese big businesses, which is only a part of a firm's life span, is longer than the life span of small firms.

Judging from evidence about the life span of small firms in Japan and in the U.S., it seems reasonable to suppose that the average life span of these firms runs from several years to ten years. *The White Paper on Small and Medium Enterprises in Japan* (1999) reported on the ability of Japanese small firms to survive, and showed that the median survival time of business establishments (places of business) is approximately five years to eight years. Also, calculating from Takase's (1988) data on the business establishments in two industries in a particular prefecture, the median survival times in these industries are 2.2 and 3.6 years respectively. Moreover, Carroll (1984) surveyed and reanalyzed 52 data sets of previous studies on organizational mortality. Calculating from the results of his reanalysis, the median survival times of these data sets range from 1.1 to 12.0 years. Therefore, we can conclude that the life span of the Japanese big businesses is longer than that of small firms, or rather, the Japanese big businesses are more stable than small businesses.

This result is consistent with several researches on the Japanese corporate systems, which suggest that the survival of firms is especially valid for the Japanese big businesses because of their lifetime employment system (Odagiri, 1992; Sheard, 1994). Sheard (1994) pointed out that "to the extent that employees of the large Japanese firm expect to enjoy a long-term association with the firm, they must

entertain the notion that the firm will be in a position to offer ongoing employment." Moreover, Aoki (1994) suggested that the corporate systems of the Japanese firms are based on long-term relationships to the stakeholders, not only to the employees, but also to the suppliers and to the investors. If so, it is reasonable to think that the survival of firms is especially important to the Japanese big businesses, which are based on long-term relationships.

The fact that the listed duration is only a part of a firm's life span may explain our Finding 2. The "liability of newness" is sometimes related to the difficulty in the startup period, and our data does not contain this period.

Furthermore, in this study we found that the listed duration of firms lengthened from 1949 to the first half of 1980s, though it shortened temporary in the first half of the 1960s. The listed duration also shortened in the latter half of the 1990s. These findings suggest that the stability of the Japanese big businesses might have been undermined in these two periods. Especially in the second half of the 1990s, shorter listed duration seems to have caused a threat to firm stability, and this may imply that the Japanese corporate systems are under threat as well. Thus it is possible that recent criticism of the lifetime employment system in Japan is partly due to the shorting of listed duration firms have experienced. There is room for further investigation on this point.

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