Exit and Entry Behavior as a Business Portfolio Management

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Keyword: business governance, exit, entry, selection and focus, business portfolio management

Ⅰ. Introduction

Japanese firms once succeeded to recover from the long period of struggle following the burst of the bubble economy, though today they face depression triggered by the crisis in the U.S. financial markets. How was this remarkable comeback achieved? We would like to examine this question, focusing on the business realignment that Japanese diversified firms have carried out in the period from 1995 to 2003.

The corporate behavior of business realignment is often studied *quantitatively* from the viewpoint of the change of diversification index and *qualitatively* by the method of Rumelt(1974)[1]. However we adopt somewhat different way from the most existing studies. We analyze the business realignment through the behavior of exit and entry. When a diversified firm exits from an existing business, it means the focusing of business lines, and when it enters into new business, it enhances diversification. If a firm executes both behaviors at once, it is true that the degree of diversification remains unchanged, but the firm's configuration of lines of business is certainly changed. Therefore taking our stand on the two-way behavior of the exit and entry enable us to richen the analysis of the business realignment.

In order to investigate the qualitative characteristics of such behavior, we employ two kinds of indicators, *input relevance* and *marketing relevance* which express the relationship between the core business existing and the business exited from or entered into. These indicators measure the resemblance between these businesses as to the input and output structure in the interindutry-relations table. Using those enables us to grasp the relevance of the business exited from or entered into in the relation to the core business.

We analyze both quantitative and qualitative features of the business realignment

[1] There are many researches that find diversification can impair firm values (For example, Berger and Mongomely(1988), Lang and Stulz(1994), and so on). Moreover, Comment and Jarrel(1995) argue that a focusing strategy is consistent with the maximization of shareholder value. In addition, Denis, Denis and Sarin(1997) and Berger and Ofek(1999) suggest that focusing is caused by outside governance pressure. However, recent studies such as Compa and Kedia(2002), Graham, Lemmon and Wolf(2002) point out that diversification does not always destroy the firm value. There researches commonly take the viewpoints of diversification or focusing.

of Japanese diversified firms to answer the following questions.

Question (i) *How broadly was the tendency observed that Japanese firms exited from existing businesses and entered to new businesses? What factors did determine them and how did they affect?*

Japanese firms made the business portfolio restructuring efforts in the end of 1990s and the beginning of 2000s. They selected some businesses and withdrew from the other businesses; it is called the 'selection and focusing' strategy. This tendency of the business consolidation is observed broadly across Japanese firms regardless of their size based on our dataset and the tendency becomes strong recently. In addition, when we focus on the relation between the core business and the businesses entered into or exited from, a firm with a steadily growing core business tends to withdraw from the business other than the core business. It means that the firm actively consolidates in order to strengthen its core business. In contrast, a firm with a less growing core business extends to a new business. These actions are quite different from the tendency that is generally believed – a firm with a lower performance withdraws from some businesses and a firm with a higher performance begins new businesses.

It is true that there was tendency of exiting from some businesses and entering into new businesses during this period, but this does not mean one firm pursued both behaviors. Thus our next question is the relation between these exit and entry action.

Question (ii) *Are exits and entries conducted by different firms? That is, do some firms only exit and other firms only enter? Or does one firm conduct both of them at the same time? In the latter case, do more entries accompany less exits (substituting relation) or more exits (supplementary relation)?*

Our analysis shows that there are many firms that do only exit and pursue business consolidation. However, it is the important fact that there are quite many firms that not only exit but also enter at the same time. It is impossible to grasp this type of business restructuring from the viewpoint of diversifying or focusing as the past analysis because the degree of diversification does not change if the degree of exit is same as the degree of entry. Therefore, it is crucial to understand the business governance as the process of the business restructuring instead of the business structure as the result. To do it, we need the viewpoint of exit and entry.

The next question is why the firm undertakes both exit and entry at same time. It seems to be contradictory, however, we can answer this question by investigating the features of the industry that firms exit from or enter into. Implement both exit and entry is a *replacement* of business, in other words, it is the shift of business portfolio. In this case, the problem is what type of the shift is.

Question (iii) *What sorts of lines have been selected by firms as business from which*

they exit or into which they enter, and what factors lead the firm to do so?

The results of our analysis are that the business which the firm exits is remote from its core business and the business which the firm enters is close to its core business. As a result, the firm shifted from the business portfolio which were weak relevancy between businesses to the business portfolio which is strong relevancy between businesses, that is, to the related diversification (or it may be called as the related consolidation if the degree of exit exceeds that of entry). This tendency of the business action is observed broadly across Japanese firms regardless of their size from our analysis. The feature of business restructuring and generality might prepare for the recover of Japanese firms.

Literature on the qualitative features of the business is scarce[2]. One of the reason is that it is not easy to quantification the qualitative features of the business. The method mostly used in classifying the type of the diversification is Rumelt(1974) and Yoshiwara et al.(1981), which divides into 4 and more categories, single, dominant, related, unrelated, and so on. However, it is difficult to use in an econometric analysis because this has many types and this is not a continuous measure.

In this research, we employ two types of indicators, input relevance and marketing relevance in order to measure relevancy between the business which the firm exits from and the core business or between the business which the firm enters into and the core business. The largest contribution of this study is to analyze the business governance using these qualitative features.

The last problem is that these business portfolio management leads to improve the performance of the firm. It is important because the purpose of the business governance is to improve the performance of the firm[3].

Question (iv) *How does the feature of exit/entry behavior affect the performance of the firm?*

We confirm that these improve the performance of the firm by the estimation using the indicators of the input relevance and the market relevance.

Ⅱ. A Preliminary Analysis by Descriptive Statistics

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[2] Berger and Ofek(1995) find that unrelated diversification has negative effects on the value of the firm. Daley, Mehrotra and Sivakumar(1997) find that the firm can increase its value through spinning off of the unrelated lines of business.

[3] There are many relevant researches. Yoshihara et al.(1981), Ueno(1993), Genba and Kodama(1999), Hiramoto(2002), and Kikutani and Saito(2006b) analyze Japanese case.

1. Data and definitions of exit and entry

Our research requires the data that indicates the business structure of the firm. For instance, in the case of an analysis using segment information provided in financial statements, only listed firms are covered. It is also difficult to compare business structures because each firm classifies its products, or segments, by its own standards. Then we use *Basic Survey of Japanese Business Structure and Activities*(BSJBSA). This is a compulsory survey by the METI(the Ministry of Economy, Trade and Industry). The survey covers all firms of 50 or more employees and paid-in capital of ¥30 million or more (except for financial institutions and firms belonging to some other specific sectors), which means this discussion is not limited to large listed firms. Firms in the survey were asked to indicate their sales composition by product group, which corresponded to an industry group that was given a three-digit classification code. Actual business structures should be more segmented than a mere three-digit classification, but this common, standardized classification is meaningful in that it enables comparison of business structures among firms.

In BSJBSA, a lot of business fields in the service industry are not assumed to be a survey object and their ranges are not consistent by year, we limit our sample to the firms whose core business is manufacturing, wholesale, or retail trade. (However, we cover all the diversified business fields other than the core business.) We exclude affiliate firms from our sample because this research doesn't deal with issue ①. Moreover we exclude single business firms (firms which have one business unit at the beginning of the period and the end of the term.) from our sample because we want to analyze "exit from an existing business" or "entry into a new business." Then, we have about 7,000 firms as the object of our analysis. We divide the post-bubble period into Phase I - 1995-1999 and Phase II - 1999-2003. 2003 is the latest year when we can obtain data. We can learn the change of the way of the business restructuring by comparing both periods.

Using the survey results on sales composition based on the three-digit classification, the definition of *exit from an existing business* and *entry into a new business* can be written as follows[4],

Exit: The case that the firm ceased to report sales for a certain product category during a designated period.

Entry: The case that the firm started to report sales for a new product category during a designated period.

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[4] Morikawa(1998a) is the first paper that analyzed exits and entries by this method using BSJBSA.

By definition, we can't find the exit or the entry behavior when there is an exit or an entry in same three-digit classification code. The number of exits or entries is measured in a designated period. If we measure the degree of diversification using the number of the businesses, the expansion of diversification in this meaning is *the number of entries is more than the number of exits* situation, oppositely, the consolidating is *the number of exits is more than the number of entries* situation[5]. Therefore, the expansion of diversification or consolidating diversification is merely the effect of the net of the exit and the entry. In this sense, it can be said that the number of exits or entries is more original variable than the degree of diversification.

First of all, let's take a general view of the characteristics of the sample used in this study. Table1 shows that the number of firms, the average of total asset, the ratio of listing firm, the average number of businesses, the average number of entries and the number of exits during PhaseI (1995～1999) and PhaseII (1999～2003), when we divide our sample into following criteria, lower 10 percentile, lower 25 percentile, median, upper 25 percentile, and upper 10 percentile of total asset in the beginning of each phase. The mean value and the median of the total asset are 30,348 million yen and 4,371 million yen respectively in 1995, and 32,870 million yen and 4,447 million yen respectively in 1999.

Table 1. Features of Sample and Average Numbers of Entry and Exit

Total Assets	Obs	Avg. Total Assets (1 million Yen)	Ratio of Listed Firms	Avg. Number of Segments	Avg. Number of Exit	Avg. Number of Entry	Number of Single-segment Firms	Ratio of Single-segment Firms
Phase I(1995～99)								
Lower 10 percentile	739	875.08	0.14%	2.6820	0.7348	0.5467	578	43.9%
Between Lower 10- Lower25 %	1076	1704.77	0.46%	2.7658	0.6533	0.5781	692	39.1%
Between Lower 25-50 %	1846	3100.00	1.25%	2.7844	0.6354	0.5184	1154	38.5%
Between 50- Upper 25 %	1801	7097.30	11.49%	2.8634	0.6180	0.5230	975	35.1%
Between Upper 25- Upper 10 %	1109	19787.01	37.42%	3.1190	0.6105	0.5816	443	28.5%
Upper 10 percentile	738	245346.70	81.03%	3.7900	0.6992	0.5705	155	17.4%
Phase II(1999～2003)								
Lower 10 percentile	694	895.46	0.00%	2.7248	0.9236	0.5778	538	43.7%
Between Lower 10- Lower25 %	1041	1698.66	0.48%	2.7819	0.9251	0.5735	621	37.4%
Between Lower 25-50 %	1734	3116.58	1.10%	2.8397	0.8570	0.5490	1035	37.4%
Between 50- Upper 25 %	1734	7136.18	10.15%	2.8679	0.7907	0.5271	876	33.6%
Between Upper 25- Upper 10 %	1041	20142.38	40.63%	3.1412	0.8405	0.5101	380	26.7%
Upper 10 percentile	693	269667.50	82.40%	3.6941	0.9091	0.6032	155	18.3%

Source: Calculated from Basic Survey of Japanese Business Structure and Activities(Ministry of Economy, Trade and Industry)

The scale of total asset of upper 10 percentile of diversified firms is about 280~300 times larger than lower 10 percentile of them, and 12~13 times larger than the next hierarchy, there is a large bias of the scale. We show the number of the firms which have one business in the right side of this table. The ratio of the firms which have one business is high in the lower 10 percentile, however, the difference isn't large compared

with the other classifications. Oppositely, in the upper 10 percentile, there are few single business firms. (This corresponds to the fact that the number of businesses described as follows increases in the firms within this range.)

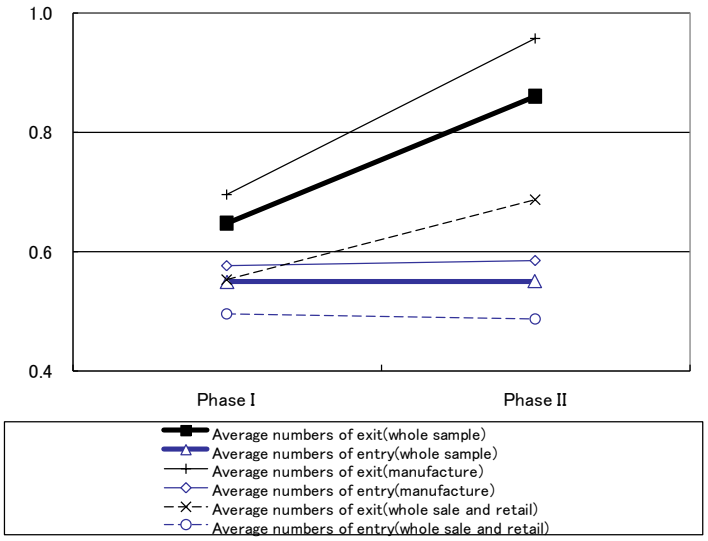
The ratio of listed to stock markets rises rapidly as the size of a firm is large. It is about 0~1% in the firms below the median and most firms are non-listed firms, while the ratio of listed firms exceeds 80% in the upper 10 percentile.

2. Transition of exits and entries

Let's take a look at the business structure in the table 1. The average number of business is about 2.7 in the lower 10 percentile firms and it is about 3.7~3.8 in the upper 10 percentile firms, it increases as the scale of firm is large. The number of businesses in the upper classification which contains a lot of listed companies is clearly larger compared with the other classifications, however, the difference isn't large considering the difference of scale. The differences of an average number of businesses are only about one. Needless to say, the degree of diversification of small firms is also small, nevertheless, we consider that there is no essential difference about the character of the business governance problem that firms face when the effect of the scale is excluded in this study.

When we take a look at the business realignment, the average number of exits is 0.6~0.7 and the average number of entries is 0.5~0.6 during Phase I. In any hierarchy, the number of exits is more than the number of entries, so we confirm that the business was consolidated in the wide range. The decrease of number of businesses that is equal to the difference of entries and exits is 0.2 at most, however, we should not overlook here the fact that firms executed the three times or more exits or entries behind the scene. That is, consolidating is only a net result of the business realignment in both directions, this shows that the viewpoint of exit or entry

Figure 1. Transition of the number of exits and entries



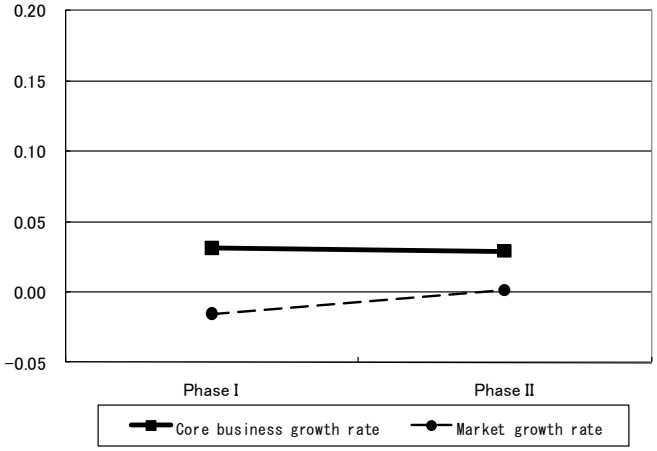
Source: Same as Table 1.

[5] In this case, it will be assumed that sales of each business are equal.

is indispensable to capture the business governance as the gross action[6]. Moreover, it is surprising that the number of exits and entries is almost constant regardless of the size of a firm or the number of businesses. It seems that reorganizing business is easy for the small-scale firm because it is easy to exit from the small scale business or to enter the niche market. These tendencies generally remained unchanged in Phase II. But the proportion of firms that withdrew from an existing business increased to 60% compared to 46% in Phase I. Companies that pursued only exit accounted for 31% of the entire sample (those that pursued both entry and exit were 29% and those that pursued only entry 10%). Seen in this context, business consolidation in Phase II outpaced that in Phase I.

Next, let's see the transition of the number of exits and entries in another angle. Figure1 shows it when we divide our sample into manufacturing, wholesale, and retail industry. It is found that the number of exit increase in all three industries, however, we can see that the number of exits of manufacturing industry is consistently more than that of the wholesale and retail trade industry. And it is found that the number of entries is level-off in all three industries. However, we can see that the number of entries of manufacturing industry is also consistently more than that of the wholesale and retail trade industry. This shows that the business reorganization of manufacturing industry was more active on both sides of the exit and entry than wholesale and retail trade industry. It is worth noting that there is no great divergence in manufacturing and the wholesale retail trade when such a difference is excluded.

Figure 2.1 Relationship between the core business growth rate and the market growth rate(Part1)
—Whole sample—



Source: Same as Table 1.
Note: The core business growth rate is the average growth rates in the sales of a firm's core business. The market growth rate is the average growth rate in the sales of "the entire market" to which the core business (3-digits classification) of the concerned firm belongs.

3. Exits/entries and core business growth rate

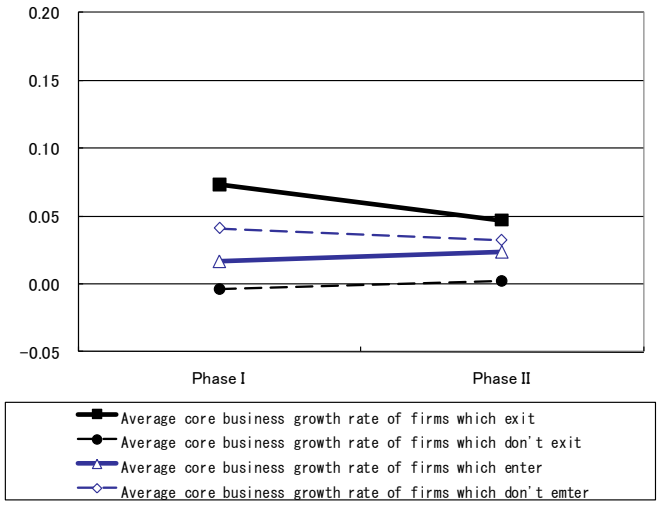
We next see the features of the firm that executed exit or entry in detail. Figure 2.1 shows the relationship between the core business growth rate and the growth rate of market to which the core business belongs. The core business growth rate is the

[6] However, Kikutani et al.(2006) pointed out this point.

average growth rates in the sales of a firm's core business (the largest business segment (in 3-digits classification) in terms of sales within each firm's business portfolio) over a period of time, and the "market" growth rate of the core business is the average growth rate in the sales of "the entire market" to which the core business (3-digits classification) of the concerned firm belongs over a period of time. It is necessary to note that sales in the entire market are the total sales of the concerned business of all firms which sum up their sales to the business regardless of the core business or the side business. According to this figure, the core business growth rate always exceeds "Market" growth rate of the core business. That is, in general, it is understood that the performance of managing the business as a core business is higher than managing it as a side business on average. This "every man does his own business best" effect explains that the performance of diversified firms is low and simultaneously becomes one powerful grounds that justify the consolidating related to the core business type which will be explained in next section.

The above-mentioned fact suggests that investigating the relativity of the growth potential of the core business and the exit/entry action is fruitful. Then, first of all, let's compare the core business growth rate of the firms that executed withdrawal and the firms that didn't do it. According to Figure 2.2, it is found that the core business growth rate of the firms that executed withdrawal is consistently higher than that of the firms that didn't do it. This shows that the firm with a high core business growth rate promoted the withdrawal from businesses other than the core business, and attempted to return to the core business. That is, despite the word "business restructuring" is usually associated with the image of major operation under the adversity, it is possible to say that the business withdrawal strengthens the core business.

Figure 2.2 Relationship between the core business growth rate and the market growth rate (Part2)
—Exit vs not exit and entry vs not entry—



Source: Same as Table 1.
Note: We devided our sample into firms which exit(entry) and do not exit(entry). The core business growth rate and the market growth rate are same as figure 2.1.

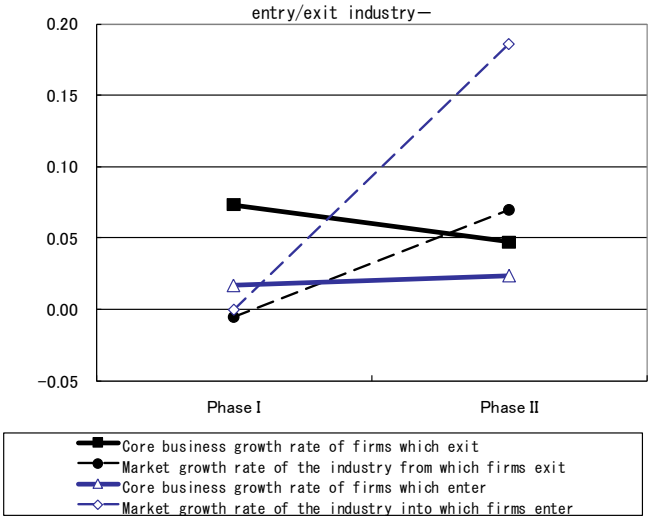
Next, let's compare the core business growth rate of the firms that launched new businesses and the firms that didn't do it. In this case, conversely, the core business growth rate of the firms that launched new businesses is consistently lower than that

of the firms that didn't do. This still shows that the firm with a high core business growth rate limits to launch new businesses and takes the strategy to place importance in the core business. Conversely, however, firms enter to a new business when the core business growth rate is low. It shows the positive attitude of the firm that tries to break the predicament.

When we put together the above considerations about exits and entries, it is found that high growth rate of the core business causes business reorganization to the core business by promoting to withdraw from the businesses other than the core business and simultaneously limiting to launch a new business.

Figure 2.3 shows how the market growth rate of the entry/exit industry of the firm that launched new business or withdrew from the business changed and how the core business growth rate of these firms changed. The market growth rate of the exit/entry industry is an average value of the growth rate of four years of sales of "The entire market" of the exit/entry industry (3-digits classification). The sales of the entire market are total value of the sales of the concerned industry of the firms regardless of the core business or the side business. If a firm executed two or more exits/entries, this value is the weighted average of the sales of the beginning/end of the term.

Figure 2.3 Relationship between the core business growth rate and the market growth rate(Part3)
—Core business growth rate and market growth rate of the entry/exit industry—



Source: Same as Table 1.
Note: We used only the data from firms which exit/enter. The core business growth rate is same as Figure 2.1. The market growth rate of the exit/entry industry is an average value of the growth rate of four years of sales of "the entire market" of the exit/entry industry. If a firm executed two or more exits/entries, this value is the weighted average of the sales of the beginning/end of the term.

We see from this figure that the market growth rate of the entry industry is large and much larger than the growth rate of core business. This suggests that firms correctly selected the entry industry. It is worth noting that the market growth rate of the exit industry rises and is larger than the growth rate of core business in Phase II. This suggests that the firm may withdraw from the industry though the market growth rate is high or it seems to be promising industry. We will consider it again at the analysis concerning the business characteristic of the withdrawal type of business in section 4.

4. Simultaneously pursuing exit and entry by firm

It is necessary to confirm that there is the tendency that the entry number is nearly equal to the exit number at individual firm level. Because we previously have seen this tendency in each scale hierarchy, but this is a tendency at the aggregate level in each hierarchy. It is possible that the number of firms that do only the entry is merely equal to the number of firms that do only exit. Table2 shows that the ratio of (1)the firms don't neither exit or entry, (2)the firms only do exit, (3)the firms only do entry, (4)the firms do both exit and entry in each phase to all sample respectively. That is, it indicates whether each firm undertakes the exit and entry simultaneously. This shows that (1) is the largest group (40%) and (4) is next largest group(25%) at PhaseI. That is, the ratio of the firms do both entry and exit and the firms don't neither entry or exit is 65%. It indicates that the entry number is nearly equal to the exit number at individual firm level. Moreover, it can be said that there is a supplementation between the two in this sense. But at PhaseII, (3) becomes the largest group(31%) and (1) has decreased more than 10% point.

Table 2. Combination of exits and entries

Phase I		Exits			
		No		Yes	
Exits	No	①	40.09%	②	20.60%
	Yes	③	13.91%	④	25.40%
Phase II		Entries			
		No		Yes	
Entries	No	①	29.57%	②	31.02%
	Yes	③	10.31%	④	29.10%

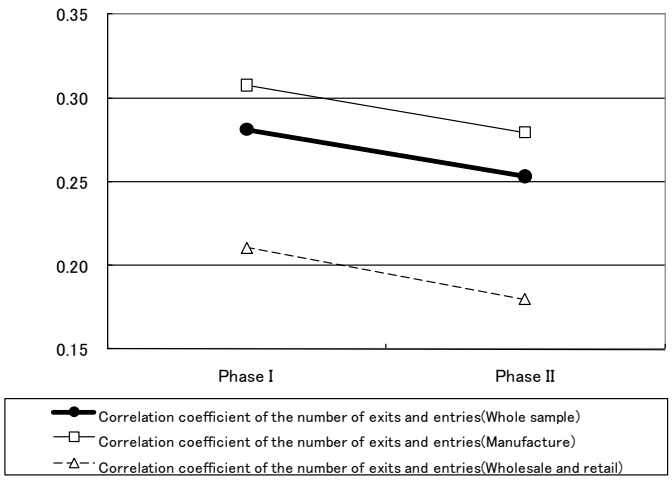
Source: Same as Table1.

In Figure 3, we provide the correlation coefficient between the number of exit and entry, which are continuous variables rather than binomial variables such as whether the firm do exit/entry.

The correlation coefficient is positive and significant (at 5% level). That is, the firm that does many exits also does many entries. And we can confirm the simultaneousness of the number of exit and entry.

Furthermore, the correlation coefficient at PhaseII is smaller than at PhaseI when we take all sample and when we divide our sample into manufacturing and the wholesale/retail industries. This may be because the firms that do only exit increase at PhaseII as is shown in Table 2.

Figure 3. Correlation coefficients of the number of exits and entries



Source: Same as Table 1.

Then, what does the fact that the firm does many exits also does many entries mean?

5. What industry does the firm does exit from or enter into? : The qualitative relevance to core business

In this section, we provide the analyses of the qualitative feature of the exit/entry and answer the previous question. First of all, we explain how we grasp the qualitative feature. When we classify the type of diversification, if the industry at 3-digit level corresponds with the core business at 2-digit level, then we often regard this type of diversification as *related*[7]. However this method has the disadvantage that the number of 3-digit industries included in a 2-digit industry varies widely. (For example, in the case of manufacturing industry of BSJBSA, the maximum value is 6 and the minimum value is 1.) So we employ the Fan and Lang(2000) method and grasp the relevance between the core business and the exit/entry industry from the relation between input and output.

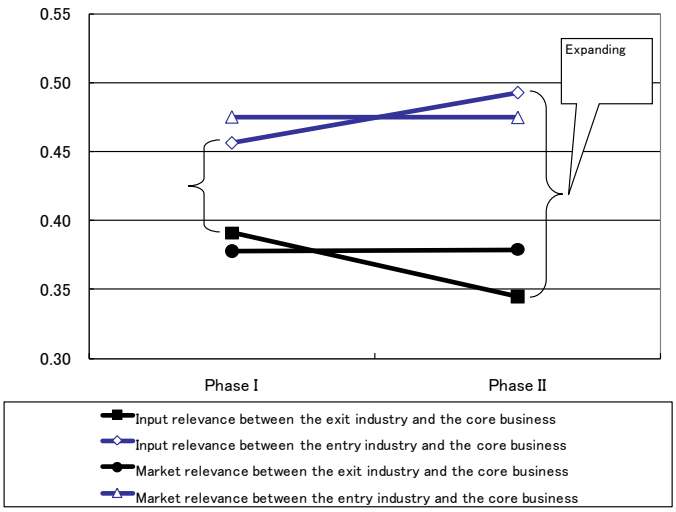
The input relevance index measures technical similarities between two products in terms of how they are produced (the combination of goods and resources required for their production), whereas the marketing relevance index measures similarities between two products in terms of their market channels. Analysis using either of these indexes found that firms tend to exit from businesses further from (less proximate to) their core business and are inclined to enter new businesses closer (more proximate) to their core business. We can understand easily the difference between the input relevance and the marketing relevance the through following example. As for a passenger car and a track, they have similar combination of inputs (high input relevance) but the usage is different (low market relevance). Oppositely, as for a wooden steering wheel and a plastic steering wheel, they have different combination of inputs (low input relevance) but the usage is similar (high market relevance). Of course, there can be the combination both of them are high.

To specify the relation between input and output(marketing) of inter-business, we use the input coefficient matrix of the input-output table. The input relevance between the core business(industry m) and the exit industry(industry i, $i \neq m$) is the correlation coefficient between column m and column i in the input coefficient matrix. The marketing relevance is the correlation coefficient between row m and row i in the input coefficient matrix. It is possible that the firm undertakes exits from two or more industries, we use the weighted average of the sales of each industry at the beginning

of the period in this case. We can define the input/market relevance between the core business and the entry industry quite similarly to these. However, if the firm undertakes entries into two or more industries, we use the weighted average of sales of each industry at the end of the period.

Figure 4 shows the relevance between the exit/entry industry and the core business. We see from this figure that the relevance between the exit industry and the core business is always lower than the relevance between the entry industry and the core business. This means that the firms withdraw from businesses remote from the core business and expand into businesses close to the core business. Such business realignment shifts the business portfolio of the firm to the one that has strong relevance to the core business. We previously mentioned that there is the tendency that firms simultaneously execute exit and entry. This action seems to be contradicted, but it shows that the business portfolio of the firm is shifted to the one with strong relevance to the core business by both direction of the withdrawal and the expansion. We can reasonably explain such an action only after seeing "Qualitative feature" of the exit industry and the entry industry.

Figure 4. Relevance between the exit/entry industry and the core business.



Source: Same as Table 1.
Note: To calculate the relevance between the exit/entry industry and the core business, we use only the data from firms which exit/entry

We next consider two relevance indexes separately. As for the input relevance, the relevance between the exit industry and the core business decreases but the relevance between the entry industry and the core business increases at Phase II compared with Phase I. That is, the tendency that the firms withdraw from businesses remote from the core business and expand into businesses close to the core business became more remarkable. Moreover, this tendency is demonstrated by extending gap between the input relevance of exit and entry industry as shown by Figure 4. Especially, this qualitative tendency of the exit extends to more firms since the number of exit increases at Phase II. We can summarize that it is remarkable that the tendency which the business portfolio is consolidated to the one with higher input relevance becomes

[7] Needless to say, the data of profitability of each businesses is unavailable.

strong in the 2000's, and we can say that this is accelerated on both sides of exit and entry.

As for the marketing relevance of exit industry and that of entry industry, both of these are level off. Since the market relevance of exit industry is lower than that of entry industry, so the fact that the market relevance of the business portfolio is comparatively strengthen unchanged. However, unlike the input relevance, we cannot say "it is accelerated."

Finally, let's consider the relation between the consequence of this section's analyses and the fact that firms withdraw from the business whose growth rate is high at Phase II as we saw from Figure 2.3. It is likely that firms withdraw from the business which is remote from the core business even if the growth rate of this business is high, since firms regard the merit of consolidation as important.

In table 3, we provide descriptive statistics for variables used in our regression analysis which will be presented following sections. We will describe details of each variable in the next section.

Table 3. Basic Statistics of Variables

Variable	Year	Obs.	Mean	Std. Dev.	Min	Max
GROWTH	1999-2003	6937	0.0291	0.1283	-0.4059	3.3359
RISK	1999-2003	6937	0.1852	0.2370	0.0020	7.2790
MGROWTH	1999-2003	6937	0.0016	0.1021	-0.1163	6.2226
ASSET	1999	6937	8.6496	1.4236	4.5433	15.3160
ROA	1999	6937	0.0293	0.0464	-0.3064	0.9613
LEVERAGE	1999	6937	0.2471	0.1848	0.0000	1.7349
SEG	1999	6937	2.9572	1.2634	2.0000	13.0000
CRATIO	1999	6937	0.7694	0.1879	0.0933	0.9999
LIST	1999	6937	0.1721	0.3775	0	1
FOREIGN	1999	6937	0.0089	0.0394	0.0000	0.6412
W&RIND	1999	6937	0.3553	0.4787	0	1
Adjusted ROA	2003	6600	-0.0026	0.0503	-1.9307	0.4987
Adjusted ROE	2003	6600	-0.0221	1.0189	-35.3477	47.8296

III Econometric Analysis on Exit and Entry Behavior

In this section, we approach our problem (i)~(iv) which were presented in section 1 by using the econometric analysis.

1. Determinants of exit and entry: Problem(i)

We first analyze what factors determine exit from current business and entry into new business and how these determinants affect these behaviors.

(1)Methods of estimation and hypothesis

The feature of the core business is the most important factor to determine exit and entry. Of course, firm's financial performance is also important, but this is a short-term factor. However, it is likely that the core business is more important than financial

performance because the growth potential of the core business is a middle-term factor as well as exit/entry strategy. Furthermore, the feature of individual business is hidden since the subject of this analysis is diversified firm and firm's financial performance is sum up all businesses[8]. In this sense, it is necessary to investigate the feature of the core business (We use firm's financial performance as the other firm's feature). In addition, it is reasonable to think that the feature of the core business has a big influence on the strategic behavior such as exit/entry in diversified firms as implied by the PPM theory that the growth potential of the business determines firm's business portfolio.

Therefore, we estimate the following model. We assume a priori that the determination factors of exit and those of entry are same and we judge whether they actually affect or not from the result of the estimate.

number of exit = f_1 (factors of core business, the other factors of firm, phase dummy) … (1)

number of entry = f_2 (factors of core business, the other factors of firm, phase dummy) … (2)

It is appropriate to employ SUR (Seemingly Unrelated Regressions) instead of estimating these two equations separately because it is unlikely that firms separately determine the number of exit and that of entry.

We use following three explanatory variables to represent the factors of the core business, **GROWTH**, **RISK**, **CRATIO**. The definition of these variables and expected sign are as follows.

i) Factors of the core business

GROWTH

Growth is mean sales growth rate in core business in each phase. This represents the growth potential of the core business. A firm with a faster growing core business may increases the number of exit since it faces less demand to stay at segments other than the core business. It may decrease the number of entry since it faces less need to take a risk to enter new segments. We thus expect that the growth of the core business is positively correlated with entry while it is negatively correlated with exit. In other words, the growth potential enlarges the merit that a firm concentrates its

[8] There is a method that defines related/unrelated by the entropy as a diversification index. (Genba and Kodama(1999), Jacquemin and Berry(1979)) This index, however, is same as other indexes in regard to use SIC code.

management resources to its core business and accelerates consolidation of business.

RISK

Risk is standard deviation of sales growth rates in core business in each phase. This represents riskiness of the core business. We use this variation because important stability of potential growth of the core business is important as well as highness of it. We expect that the risk of the core business is negatively correlated with exit while it is positively correlated with entry. If core business growth is equal, a firm whose core business faces higher market uncertainty refrains from exit from segments and attempts to enter other segment in order to distribute risk among businesses.

CRATIO

CRATIO is ratio of sales of core business to total sales. The ratio of the core business is important for a diversified firm. In order to avoid risk, a firm which highly depends on its core business should decrease exit and increase entry. Even though risk may be completely controlled by RISK, we can consider the other effect. If high CRATIO indicates superiority of the core business, the firm increases exit and decreases entry in order to recur to the core business.

CRATIO also represents the degree of consolidation after controlling the number of segments. If the number of segments is equal but CRATIO is high, the businesses other than the core business are relatively small, and then it is easy to exit because of its small cost.

ii) Other firm-specific factors

The factors of a firm other than the core business are as follows.

ASSET is natural logarithm of initial total assets. We use this as the measure of scale of the firm. A large firm has accumulated managerial resources, so it may have high organizational capability to enter new business. A larger firm has more managerial resources for sustaining loss-making business and larger organization is slower in decision-making. We thus expect that it is negatively correlated with exit while it is positively correlated with entry.

ROA is initial ratio of operating income to total capital. We use this as the performance measure of the firm. As a firm's performance is higher at the beginning of the phase and it has more cash flow, it is easy to do business restructuring in order to strengthen its business. Hence the initial ROA may be positively correlated with exit and entry. However, if a firm is content with the good performance and neglects the effort of the business restructuring, ROA may be correlated with exit and entry.

LEVERAGE is initial ratio of book value of fixed debt to total asset. We use this as the measure of balance sheet status. According to so-called "the discipline-of-debt effect", the higher the fixed debt ratio is, the firm is more likely to be urged to do business restructuring. Thus it may be positively correlated with exit and entry. Note however if financing cost is high due to firm's higher fixed debt ratio, entry may be restricted.

SEG is the initial number of business segments. We use this as the measure of firm's diversification. Many business segments represent plenty of managerial resource accumulated and high organizational capacity. We thus expect that it is positively correlated with entry. If a firm has many segments, the other businesses can easily absorb the shock of exit. Moreover, after controlling firm size, many segments represent that each business is relatively small, thus exit cost may be small. Thus SEG may be positively correlated with exit. On the other hand, however, it is likely that a firm with many segments doesn't need to diversify anymore because it has diversified enough. In addition, if there is a diversification discount, SEG may hurt profitability. Hence SEG may be positively correlated with exit and negatively correlated with entry.

W&RIND is a dummy variable indicating whether a firm belongs to the wholesale industry or the retail industry. Our sample contains manufacturing, wholesale, and retail industries, so we use this in order to control industry effects on decision-making.

MGROWTH is mean total sales growth rate in the industry which is the core business of the firm concerned in each phase. We use this as market growth potential of the industry which is the core business of the firm. A firm in a faster growing industry may be relatively growing slowly, thus we expect that MGROWTH have the opposite sign to GROWTH. However, we cannot deny another possibility. If the expansion of the market represents the growth potential of firm's core business, we can expect that MGROWTH have the same sign as GROWTH.

LIST is a dummy variable indicating whether a firm is listed on the Japanese stock market. FOREIGN is the proportion of shares held by foreign entities if a firm is listed, or it is 0 if a firm is not listed. These are the variables that capture corporate governance. We expect that they are positively correlated with both entry and exit if the discipline of the stock market works well.

PHASE II is a dummy variable taking the value of 1 if the phase is II and taking the value of 0 if the phase is I. We use this in order to control for differences in decision-making among phases.

(2)Estimation Results

i) Factors of the core business

Table 4[1] presents the estimation results concerning entry and exit variables.

The coefficients of GROWTH are negative and significant for exit and positive and significant for entry. We confirm that exit is promoted while entry is restrained when the core business steadily grows. Therefore, the number of segments decreases. That is, the steadily growth of core business causes the firm to move toward focusing.

RISK has positive and significant effect on exit and negative and significant effect on entry. It suggests that risk in the core business encourage the firm to enter new business segments in order to distribute the risk. In addition, if GROWTH is controlled, the increase in RISK leads to fewer exits. In this case, eventually, the number of segments increases and diversification is advanced.

The coefficients of CRATIO are positive and significant for exit and negative and significant for entry. Controlling the number of segments, a firm with high ratio of sales of core business inclines to consolidate its business. It suggests that it is advantageous for a firm to specialize in the core business.

ii) Other firm-specific factors

ASEET has negative and significant effect on exit. Controlling the number of segments, we find that the larger the firm is, the less exit is pursued. It is interesting that this result corresponds to the fact that the larger the firm is, the slower the firm makes decision to exit.

The coefficients of ROA are all positive and significant for both exit and entry. This result implies that a firm with high profitability engages in business restructuring more actively through both entry and exit. This suggests that it is necessary for a firm to accumulate enough cash flow to do such a business restructuring.

LEVERAGE also has positive and significant effects on both exit and entry. That is, a firm with easier access to external funds engages in business restructuring more actively. In other words, we conjecture that such a firm raised funds necessary for entry and exit through borrowing. It is ambiguous that whether these actions lead to diversifying or focusing. We will answer this question in the next section (3) where we conduct estimation on diversification.

The effects of SEG on entry and exit are positive and significant, too. Thus a firm with more segments actively engages in exit and entry.

W&RIND has negative and significant effects on both exit and entry. Compared with a firm in wholesale and retail industry, a firm in manufacturing industry engages in exit and entry more actively. We will confirm whether these actions lead to diversifying or focusing in next section.

The coefficients of MGROWTH are positive and significant on both exit and entry.

That is, the higher the growth rate of the market that a firm belongs to, the more actively the firm engages in exit and entry. The findings implies that when the rival firm whose core business is same to the firm is steadily growing, the firm engages in business restructuring in order to compete it. Whether the increase in MGROWTH leads to diversifying or focusing will be answered in the next section.

LIST and FOREIGN do not have any significant effects on both exit and entry. The result implies that the discipline of the stock market has no effects on exit and entry at individual firm level. However, as we will see in the next section, it has negative effect on the number of segments that is composed effect of exit and entry.

PHASE II has positive and significant effect on exit while it does not have significant effect on entry. That is, the number of segments decreases in phase II compared with phase I. This means that firm engages in "selection and focus" at Phase II.

(3) Determinants of diversification

If an explanatory variable affects entry and exit in the same direction, it is ambiguous that which effect is stronger. To answer this question, we must estimate as the net effect of entry and exit.

The coefficients of explanatory variables obtained from the estimations of exit and entry basically have opposite signs. In these cases, there are two possibilities. Firstly, when a factor brings a positive effect on exit and a negative effect on entry, it drives the firm to focusing. Secondly, when a factor has a negative effect on exit and a positive effect on entry, it drives the firm to diversifying. However, some coefficients of explanatory variables, such as ASSET, SEG, W&RIND, MGROWTH, and PHASE II, have the same sign. In these cases, whether the factor leads to diversifying or focusing is ambiguous. Therefore we need to estimate on diversification in order to clarify on which of entry or exit the factor has a larger effect using the number of segments to be at the end of the phase as a dependent variable[9].

Table 4[2] presents the results of the estimation. It is roughly corresponding to the result obtained from the estimation of exit and entry.

We concentrate here on the explanatory variables whether each of them leads to diversifying or focusing is unclear in the estimation of exit and entry. The effect of SEG on the number of segments at the end of the phase is positive and significant. That is, the more diversified a firm, the more it increases the number of business, ceteris paribus. Neither of LEVERAGE nor MGROWTH have significant effects, probably

[9] This estimation is equivalent to the partial adjustment model about diversification. See Kikutani et al.(2006).

Table 4. Estimations of Entry, Exit, and Diversification

	EXIT and ENTRY		Diversification	Interdependency of EXIT and ENTRY	
	SUR [1]		OLS [2]	3SLS [3]	
	EXIT	ENTRY	SEG	EXIT	ENTRY
(Factors of the core business)					
GROWTH	0.561***	−1.524***	−2.085***	1.818***	−1.968***
	(0.069)	(0.071)	(0.25)	(0.089)	(0.072)
RISK	−0.262***	0.772***	1.034***	−0.899***	0.979***
	(0.035)	(0.036)	(0.11)	(0.045)	(0.037)
CRATIO	0.596***	−0.0997**	−0.701***	0.679***	−0.572***
	(0.040)	(0.041)	(0.052)	(0.040)	(0.045)
(Other firm-specific factors)					
ASSET	−0.0818***	0.00398	0.0849***	−0.0851***	0.0687***
	(0.0064)	(0.0065)	(0.0085)	(0.0063)	(0.0070)
ROA	0.280**	0.327**	0.0466	0.0101	0.106
	(0.14)	(0.15)	(0.19)	(0.14)	(0.14)
LEVERAGE	0.130***	0.183***	0.0500	−0.0215	0.0807**
	(0.036)	(0.037)	(0.043)	(0.037)	(0.037)
SEG	0.371***	0.0746***	0.703***	0.309***	−0.219***
	(0.0061)	(0.0062)	(0.011)	(0.0066)	(0.014)
W&RIND	−0.153***	−0.0430***	0.109***	−0.118***	0.0782***
	(0.014)	(0.014)	(0.017)	(0.014)	(0.015)
MGROWTH	0.295***	0.375***	0.0773	−0.0136	0.141
	(0.086)	(0.088)	(0.13)	(0.086)	(0.087)
LIST	0.0236	−0.0277	−0.0492*	0.0464**	−0.0463*
	(0.024)	(0.024)	(0.029)	(0.023)	(0.024)
FOREIGN	0.247	0.324	0.0856	−0.0204	0.129
	(0.21)	(0.22)	(0.31)	(0.21)	(0.21)
(Phase dummy)					
PHASE II	0.198***	0.0213	−0.176***	0.180***	−0.135***
	(0.013)	(0.013)	(0.017)	(0.013)	(0.015)
(Interdependency of Exit and Entry)					
EXIT					0.791***
					(0.035)
ENTER				0.825***	
				(0.037)	
const	−0.147**	0.213***	0.373***	−0.323***	0.329***
	(0.064)	(0.066)	(0.095)	(0.064)	(0.065)
Obs.	14326	14326	14326	14326	14326
adj. R^2	0.25	0.05	0.53	0.02	−0.15
Likelihood	−33222			−18081	

Notes: Figures in parentheses are standard deviation adjusted for heteroscedasticity(White's correction). ***, **, and * denote coefficients significant at the 1%, 5%, and 10%.

because these factors encourage both entry and exit, and hence these effects cancel out. The coefficient of W&RIND dummy is positive and significant. It suggests that the effect of entry exceeds that of exit in the wholesale and retail industry, thus the degree of diversification increases. The coefficient of Phase II dummy is negative and significant. The degree of diversification at phase II is smaller than that at phase I since exit effect is stronger than entry effect at phase II. The effect of LIST, which is not significant in the estimation of exit and entry, is negative and significant in this estimation. A listed firm engages in business consolidation more actively than non-listed firm ceteris paribus. The result shows that there is market discipline of the

stock market.

2. Interdependency of exit and entry: Problem(ii)

i) Estimation methods and hypothesis

In this subsection, we analyze the problem (ii). In above section, we estimated exit and entry separately, however, as showed in table 2 and figures in section 2, there is interdependency of exit and entry. Therefore we must estimate the following model that clearly assumes that exit and entry directly affect each other.

number of exit $= f_1$ (number of entry, factors of core business, the other factors of firm, phase dummy) … (3)

number of entry $= f_2$ (number of exit, factors of core business, the other factors of firm, phase dummy) … (4)

Now, the number of entry is correlated with the error term in equation (3) and the number of exit is correlated with the error term in equation (4) since we assume that exit and entry affect each other. In this case, OLS may be inappropriate since the coefficient will be biased and OLS cannot provide consistent estimators. In addition, it is likely that the error terms of two equations are correlated as well as (1) and (2) equations. We thus employ 3SLS (Three-stage least squares) estimation in order to eliminate the biases which occur from interdependency of exit and entry and obtain the effect of exit on entry and the effect of entry on exit respectively. At the first stage of 3SLS, we add entry and exit at the beginning of the phase as the explanatory variables.

As we see in Figure 3, the number of exit is positively correlated with the number of entry. However, it is necessary to estimate these equations system in order to confirm whether this finding is true ceteris paribus. If both of the coefficient of entry in equation (3) and the coefficient of exit in equation (4) are positive, there is a complementary relation between exit and entry. If both of them are negative, there is a substitutional relation. If the two signs are different, neither of these relations is satisfied. We don't describe the other explanatory variables, such as factors of the core business, the other factors of the firm, phase dummy variable since they are used in above estimation.

ii) Estimation results

Table 4[3] report the 3SLS estimation results concerning the interdependency effects of exit and entry. Controlling other factors, entry is positively correlated with

exit and exit is positively correlated with entry. That is, a firm conducts exit and entry complementary. Moreover, they have a considerably large impact since the coefficients are 0.8 respectively.

Compared with the result of SUR presented in table 4[1], the effect of the number of segments changes to negative in the result of 3SLS. One interpretation of the difference between the two estimations is that SEG has positive effect in SUR because the coefficient of SEG is the components of direct effect and indirect effect, while SEG has negative effect in 3SLS because the coefficient of SEG is direct effect only. The direct effect is the one of number of segments on the degree of entry. The indirect effect is the effect of exit which is affected by the number of segments. Therefore the number of segments has negative effect on entry directly; however, it simultaneously has positive effect on exit. This suggests that it is likely that the surplus managerial resource emerge from exit encourages enter to new business. Such indirect effect exceeds direct effect.

Finally, we briefly review the effects of other points which is different from the result of SUR. W&RIND has a positive and significant effect on entry in 3SLS while it has a negative effect in SUR. It also suggests that indirect effect exceeds direct effect.

We next analyze the implication of the tendency that both of exit and entry is simultaneously undertaken from the viewpoint of features of the industry of exit or entry.

IV. Features of exit or entry

In this section, we examine Problem (iii). We analyze what sorts of businesses have been selected by firms as areas from which they exit or into which they enter and what factors lead the firm to do so. This analysis is the central thesis of this study. We employ two types of indicators, input relevance and marketing relevance, which are explained in section 2, as the features of exit or entry industry.

1. Estimation method and hypothesis

When we analyze what factors determine the feature of entry or exit industry, it is important to note that we only observe the features of exit industry for the firm exits from business and the features of entry industry for the firm enters into new business. In this case, an OLS regression using the selected sample leads to inconsistent estimation due to a sample selection bias. In order to eliminate such a bias, we employ the Heckman's two-step Estimator. The first step estimates a probit model of the decision of whether to exit/enter or not, the second step estimates the feature of exit/entry industry. We estimate the exit/entry equation separately rather than a

system estimation such as SUR or 3SLS for simplicity. The model for the estimation as follows.

<Estimation for exit>

1st-step : exit dummy = f (factors of core business, the other factors of firm, phase dummy) … (5)

2nd-step : feature of exit industry = g (factors of core business, the other factors of firm, phase dummy, λ) … (6)

<Estimation for exit>

1st-step : entry dummy = f (factors of core business, the other factors of firm, phase dummy) … (7)

2nd-step : feature of entry industry = g (factors of core business, the other factors of firm, phase dummy, λ) … (8)

Exit(Entry) is dummy variable indicating whether a firm enters(exits). The variables for the feature of Exit(Entry) industry are input relevance and marketing relevance to the core business. The other explanatory variables are same as used for the estimations in section 3. λ is the inverse Mill's ratio.

The first step estimation is basically same as the SUR estimation in section 3.1, except that the dependent variable is the dummy variable. The purpose of the second step estimation is to examine the hypothesis as mentioned in section 2.5. That is, a factor leads to exit will be negatively correlated with the relevancy of exit industry to the core business; whereas a factor leads to entry will be positively correlated with the relevancy of entry industry to the core business.

2. Estimation Results

Table 5 presents the results. The results of the first step estimation are basically similar to the SUR estimation except that RISK, MGROWTH, and ROA are not significant.

Table 5. Estimations of the Features of Exit/Entry Industry

	Features of Exit Industry				Features of Entry Industry			
	Heckit		Heckit		Heckit		Heckit	
	[4]		[5]		[6]		[7]	
	EXIT	Input Relevance	EXIT	Market Relevance	ENTER	Input Relevance	ENTER	Market Relevance
(Factors of the core business)								
GROWTH	1.582***	−0.0882***	1.596***	0.0414	−2.249***	0.0476	−2.052***	−1.053***
	(0.22)	(0.032)	(0.22)	(0.029)	(0.16)	(0.051)	(0.14)	(0.092)
RISK	0.178	0.0434***	0.170	−0.0219	1.122***	0.0614**	1.026***	0.577***
	(0.21)	(0.016)	(0.22)	(0.014)	(0.080)	(0.030)	(0.069)	(0.042)
CRATIO	1.343***	−0.0210	1.336***	−0.0582***	−0.141**	0.0264	−0.151**	−0.0516
	(0.11)	(0.020)	(0.11)	(0.021)	(0.068)	(0.028)	(0.063)	(0.039)
(Other firm-specific factors)								
ASSET	−0.106***	−0.00255	−0.107***	−0.000313	−0.00690	−0.0152***	−0.0181*	−0.00983
	(0.012)	(0.0032)	(0.012)	(0.0034)	(0.011)	(0.0041)	(0.0099)	(0.0062)
ROA	0.106	−0.0663	0.0963	0.00238	0.480**	0.265***	0.593***	0.497***
	(0.24)	(0.066)	(0.24)	(0.065)	(0.24)	(0.097)	(0.23)	(0.14)
LEVERAGE	0.152**	−0.00793	0.154**	−0.0416**	0.280***	0.0302	0.248***	0.0844**
	(0.064)	(0.018)	(0.064)	(0.018)	(0.063)	(0.025)	(0.060)	(0.038)
SEG	0.424***	0.00288	0.422***	−0.0251***	0.105***	−0.0192***	0.0743***	0.0291***
	(0.015)	(0.0031)	(0.015)	(0.0049)	(0.010)	(0.0037)	(0.0092)	(0.0059)
W&RIND	−0.239***	0.0745***	−0.240***	0.147***	−0.0780***	−0.0337***	−0.139***	0.0836***
	(0.025)	(0.0071)	(0.025)	(0.0071)	(0.025)	(0.0090)	(0.026)	(0.018)
MGROWTH	0.371*	0.0614	0.278	−0.114	1.426***	0.139**	1.085***	0.237***
	(0.22)	(0.067)	(0.19)	(0.097)	(0.34)	(0.056)	(0.21)	(0.061)
LIST	0.0275	−0.00695	0.0280	0.00508	−0.00183	0.0276*	0.00388	−0.0260
	(0.041)	(0.012)	(0.041)	(0.012)	(0.040)	(0.016)	(0.038)	(0.023)
FOREIGN	0.575	0.221**	0.585	−0.227**	0.337	0.180	0.133	−0.0183
	(0.40)	(0.11)	(0.40)	(0.095)	(0.33)	(0.12)	(0.29)	(0.18)
(Phase dummy)								
PHASE Ⅱ	0.366***	−0.0563***	0.367***	−0.00152	0.0182	0.0337***	0.0383*	0.00764
	(0.022)	(0.0064)	(0.022)	(0.0077)	(0.022)	(0.0082)	(0.020)	(0.012)
const	−1.475***	0.437***	−1.455***	0.485***	−0.638***	0.689***	−0.402***	−0.249***
	(0.19)	(0.033)	(0.19)	(0.039)	(0.11)	(0.048)	(0.10)	(0.066)
λ	−0.0553***		−0.0109		−0.0898***		0.616***	
	(0.0098)		(0.023)		(0.016)		(0.016)	
arc hyperbolic tangent ρ	−0.208***		−0.0412		−0.285***		2.609***	
	(0.037)		(0.086)		(0.050)		(0.18)	
lnσ	−1.312***		−1.328***		−1.129***		−0.474***	
	(0.0074)		(0.0069)		(0.011)		(0.022)	
Obs	14326		14326		14326		14326	
Likelihood	−9504		−9474		−10773		−11018	

Notes: Figures in parentheses are standard deviation adjusted for heteroscedasticity(White's correction). ***, **, and * denote coefficients significant at the 1%, 5%, and 10%.

The results of the second step estimation are as follows. First, we review the exit industry. MGROWTH, LEVERAGE, SEG, CRATIO, and PHASE II, which are positively correlated with exit in the first step, are negatively and significantly correlated with the input or market relevancy. These findings suggest that firms tend to exit from businesses further from (less proximate to) their core business. These factors, however, have an effect only on input relevancy or market relevancy. The coefficients of RISK and W&RIND are positive and significant. Since these variables are negatively correlated with exit, therefore, exit is promoted when these variable are small. In this case, the firm exits from businesses further from their core business. FOREIGN, which represent the corporate governance, has a positive and significant effect on the input relevancy while it has a negative and significant effect on the market relevancy.

Second, we review the entry industry. RISK, LEVERAGE, MGROWTH, and PHASE II, which are positively correlated with entry in the first step, are positively and significantly correlated with the input or market relevancy. The findings suggest that the firms are inclined to enter new businesses closer (more proximate) to their

core business. MGROWTH has a negative effect on market relevancy, but it is likely that this is because MGROWTH is negatively correlated with entry. SEG and W&RIND have negative and significant effects on the input relevancy while they have positive and significant effects on the market relevancy.

V Portfolio restructuring and performance : Problem(iv)

In this section, we analyze how portfolio restructuring affects performance of the firm. Do the feature of exit/entry industry, which are investigated above section, affect on performance?

1. Estimation method and hypothesis

We now estimate the effect of feature of business portfolio restructuring on the firm performance. The model to be tested is as follows.

PERF=f(OnlyEXIT, OnlyENTRY, BOTH, EXTFEAT, ENTFEAT, OTHERFEAT, PHASE II) … (9)

PERF is the performance of the firm. It is measured by ROA(operating income divided by total assets) or ROE(operating income divided by equity).

We define the explanatory variables representing the combination of exit and entry as follows. OnlyEXIT is a dummy variable indicating whether a firm only exited but not entered, OnlyEnter is a dummy variable indicating whether a firm only entered but not exited, and BOTH is a dummy variable indicating whether a firm simultaneously entered and exited. The case in which a firm neither enters nor exits is taken as a base. Kikurani et al.(2006) shows that restructuring only with entry or exit does not lead to improvement in performance unless both entry and exit are pursued simultaneously. Hence BOTH may be positively correlated with PERF whereas the coefficients of OnlyEXIT and OnlyEntry may be insignificant.

Next, we explain the explanatory variables representing the feature of exit or entry industry. EXTFEAT is interaction term of exit dummy and input relevancy or market relevancy. ENTFEAT is interaction term of entry dummy and input relevancy or market relevancy. The performance of the firm may improve when the firm exits from businesses remote to the core business or enter new businesses closer to the core business. We thus expect that EXTFEAT is negatively correlated with PERF while ENTFEAT is positively correlated with it.

We also include OTHERFEAT, which contains SEG, ASSET, LEVERAGE, LIST, FOREIGN, W&RIND, and PHASE II, as explanatory variables. SEG may be negatively

correlated with PERF because there may be the diversification discount.

Table 6. Estimations of Portfolio Restructuring Effect on Performance

	OLS [8] Adj. ROA	OLS [9] Adj. ROE	OLS [10] Adj. ROA	OLS [11] Adj. ROE
(Combination of Exit and Entry)				
OnlyEXIT	0.00000930	0.0205	−0.0000293	0.0227
	(0.0010)	(0.053)	(0.0010)	(0.052)
OnlyENTRY	−0.000623	−0.0356	−0.000793	−0.0357
	(0.0012)	(0.047)	(0.0012)	(0.047)
BOTH	0.000810	−0.0369	0.000565	−0.0342
	(0.0012)	(0.044)	(0.0012)	(0.042)
(Features of Exit/Entry Industry)				
EXTFEAT				
EXIT × Input Relevance	−0.00461**	−0.174**		
	(0.0023)	(0.077)		
EXIT × Market Relevance			−0.00129	−0.158***
			(0.0018)	(0.059)
ENTFEAT				
ENTRY × Input Relevance	0.00624***	0.195**		
	(0.0015)	(0.096)		
ENTRY × Market Relevance			0.00548***	0.155**
			(0.0014)	(0.064)
(Other firm-specific factors)				
ASSET	0.00159***	0.00882	0.00161***	0.00919
	(0.00052)	(0.012)	(0.00051)	(0.012)
LEVERAGE	0.000522	0.331***	0.000527	0.333***
	(0.0036)	(0.12)	(0.0036)	(0.12)
SEG	−0.000995***	−0.00440	−0.000934***	−0.00267
	(0.00032)	(0.010)	(0.00032)	(0.010)
W&RIND	−0.00148	0.0394	−0.00175*	0.0379
	(0.00099)	(0.037)	(0.00098)	(0.036)
LIST	0.00417***	−0.0789***	0.00416***	−0.0792***
	(0.0015)	(0.029)	(0.0015)	(0.029)
FOREIGN	0.0207	−0.0882	0.0208*	−0.0923
	(0.013)	(0.17)	(0.013)	(0.17)
(Phase dummy)				
PHASE II	0.0000498	0.0268	0.000191	0.0261
	(0.00084)	(0.033)	(0.00084)	(0.033)
Const	−0.0151***	−0.198*	−0.0158***	−0.206*
	(0.0044)	(0.12)	(0.0043)	(0.12)
Obs.	13182	13182	13182	13182
adj. R^2	0.01	0.00	0.01	0.00

Notes: Figures in parentheses are standard deviation adjusted for heteroscedasticity(White's correction).
***, **, and * denote coefficients significant at the 1%, 5%, and 10%.

2. Estimation Results

Estimate results are summarized in Table 6. The coefficients of OnlyExit, OnlyEntry, and BOTH are insignificant. In other words, there is no significant

difference between performance of the firm which undertakes exit and/or entry and that of the firm which does not undertake. However, EXTFEAT and ENTFEAT have significant effects on FEAT. The interaction term of entry dummy and input relevancy and term of entry dummy and market relevancy are positively and significantly correlated with ROA and ROE. The interaction term of exit dummy and input relevancy is negatively and significantly correlated with ROE and the interaction term of exit dummy and market relevancy is negatively and significantly correlated with ROA and ROE.

Our estimation results show that conducting exit and/or entry simply does not lead to improvement in performance. If a firm enters into the business which is close to the core business and/or exits from the business which is remote from the core business, the firm succeeds in improving its performance. if the firm undertakes both of them simultaneously, these two effects improve the performance. Regardless of the type, the firm comes to have a set of businesses around the core business by implementing business restructuring. It is likely that the firms implementing such strategic realignment obtain the better business results.

Finally, we briefly review the coefficients of other explanatory variables. SEG has a negative and significant effect on ROA, and then we confirm there is a diversification discount effect. The coefficient of ASSET is positive and significant on ROA. Controlling the types of portfolio restructuring and the degree of diversification, the larger a firm is, the higher the performance of the firm is. LEVERAGE has a positive and significant effect on ROE, this suggest there exists the so-called “debt discipline.” Controlling this effect, LIST has a positive and significant effect on ROA whereas it has a negative and significant effect on ROE. FOREIGN sometimes has a positive effect on ROE. The coefficient of W&RIND on ROA is sometimes negative and significant. The coefficient of PHASE II is insignificant.

VI Concluding remarks

This study has investigated the business portfolio restructuring of the diversified company in Japan. In particular, we focus on the "exit from an existing business" and the "entry into a new business." This consideration gives us the more effective information than the previous method of only investigating the change in a firm’s degree of diversification because many Japanese firms are inclined to engage in both exit and enter instead of single-mindedly pursuing exit or enter. To strengthen a set of businesses around the core business, firms implement strategic business realignment that combines both offensive and defensive measures. Our analysis shows that a firm with a faster growing core business exits from existing businesses while a firm with a

slower growing core business enters into new businesses. It seems to be contradictory that a firm simultaneously pursues exit and entry. However, it is quite reasonable to think that a business realignment behavior undertaken by firms is to withdraw from businesses remote from the core business and, at the same time, to expand into businesses close to the core business.

Moreover, it is the most important that this tendency is observed broadly across Japanese firms regardless of their size. It is often said that Japanese firms are slower in business portfolio restructuring than U.S. and Europe firms, however, our analysis shows that Japanese firms have engaged in active and reasonable business realignment strategy. It is likely that that the extensive employment of such strategy paved the way for their across-the-board comeback.

Last, let us summarize some future research issues. First, we need to analyze the decentralization of business governance as we mentioned at first section. It is an interesting question how division and affiliated company are different in the business governance. In particular, how the business governance change by changing from a division to an affiliated company by shifting to the pure holding company. Second, we also need to analyze the business governance as company group including affiliated companies. For instance, the business that a parent company withdrew is transferred to an affiliated company; and a parent company succeeds the business of an affiliated company. It is also important to examine the decision making process of these strategies.

Acknowledgement

We also thank METI for its permission to use the firm-level data from government statistics.

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