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Moving Out of China? Evidence from Japanese Multinational Firms[*]

Changyuan LUO Chunxiao SI Hongyong ZHANG[†]

Abstract: Against the background of the decline in foreign direct investment in China and the rest of the world, this study examines the firm-level and macroeconomic factors that affect foreign divestment in China. It employs a unique dataset of Japanese multinational enterprises (MNEs) from 1995 to 2016 and survival analysis. Foreign divestment involves a dissolution or withdrawal and a reduction in control share. The study resulted in the following findings. First, affiliate firm size, Japanese capital share, profitability, labor productivity, and export proportion to Japan are all negatively associated with divestment. The probability of divestment increases with the size of the parent firm and experience in the Chinese market but decrease with business relatedness between affiliate and parent firms, entry threshold, and market concentration. Second, an affiliate's firm size and profitability as well as market competition are the main determinants of a dissolution or withdrawal (more extreme methods of divestment). Meanwhile, an affiliate's capital structure and productivity are the main determinants of a reduction in control share (a relatively moderate method of divestment). Third, larger parent firms are likely to make spatial adjustments in their production across regions in China and to adjust their activities from manufacturing to services. We also examine the heterogeneous effects of foreign divestment by region, industry, and period. Based on this study, China would benefit from monitoring and reacting to the dynamic trend of foreign capital withdrawal and creating a favorable business environment for MNEs.

Keywords: multinational enterprises, divestment, survival analysis
JEL classification: F14, F23

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I. Introduction

After the global financial crisis, the rise of anti-globalization and trade protectionism has induced international trade and investment to chart a downward trend. According to statistics from the United Nations Conference on Trade and Development, global foreign direct investment (FDI) has seen a yearly decline since 2015, and FDI flow in 2018, relative to 2015, dropped by 36.2%. Moreover, international divestment by multinational enterprises (MNEs) has proven to be an important global phenomenon in recent years (Borga et al., 2020). Meanwhile, with the slowdown of China's economic growth and the rising labor costs, divestment by MNEs in China has increased substantially. According to estimates, the scale of foreign divestment in China in 2014 was 90.6 billion US dollars, a 70% increase relative to 2013.[1] The COVID-19 pandemic has intensified the concerns of some developed countries regarding their dependence on supply chains in China. Further, the withdrawal of foreign investment from China has garnered wide attention. As an East Asian neighbor, Japan has always been an important trading partner and source of foreign investment to China. However, with the continuous expansion of FDI in China, the relative scale of Japanese investment has declined. In 1988, Japan's direct investment accounted for 16.1% of the total FDI in China, which decreased to 2.7% in 2018 (see Figures 1).

[Insert Figure 1 here]

The relative decline in Japanese investment in China involves two factors: the decrease in Japanese new investment in China and the withdrawal of Japanese investment in China. This study focuses on the latter (i.e., divestment by Japanese MNEs). According to statistics from the Ministry of Economy, Trade and Industry (METI) of Japan, from 2000 to 2017, 2,945 Japanese affiliates in China withdrew their capital, and this number has been increasing (see Figure 2).[2] China's share in the total divestments in all regions increased from 15.8% in 2000 to 37.2% in 2017. Before the global financial crisis in 2008, the divestment ratio of Japanese MNEs in China was lower than that of Japanese overall overseas

[1] Balance of payment of 2014 via China's State Administration of Foreign Exchange.

[2] In recent years, typical cases of Japanese capital withdrawal include the following: In 2009, Suntory withdrew its investment in the Shanghai Donghai Beer Company. In 2013, Panasonic closed its factory in Shanghai. In 2015, Nissin Foods sold its shares in Jinmailang. In 2018, Suzuki withdrew its shares in Changhe Suzuki and Changan Suzuki.

investment. However, after 2008, the situation was the opposite. In 2012, the islands dispute between China and Japan led to large-scale anti-Japanese demonstrations and boycotts of Japanese goods in China, which damaged the China-Japan political and economic relationship. After 2012, the number and proportion of Japanese divested affiliates increased significantly. The withdrawal of Japanese capital likely impacted the Chinese economy considerably. According to statistics from the METI of Japan, the total number of employees of Japanese affiliates in China decreased from 1.79 million in 2014 to 1.53 million in 2017, a likely reason being the withdrawal of Japanese capital.

[Insert Figure 2 here]

Thus, against the background of the declines in FDI in China and the rest of the world, it is important to investigate the factors that influence the divestment of MNEs. However, foreign divestment is an understudied subject, especially in the context of China, which is among the largest FDI destinations. Utilizing a comprehensive parent-affiliate matched data on Japanese MNEs by the Japanese government for the 1995–2016 period, this study examines the firm-level and macroeconomic factors that affect foreign divestment in China.[3] In our dataset, affiliate firms report their capital structure and operation status containing information on divestment. Divestment is classified into dissolution or withdrawal and reduction in control share to better identify and understand the difference between the two divestment modes. The 22-year long panel dataset contains rich information on affiliate sales, exports, employment, age, industrial classifications, location, and information on parent firm size and industry classification. It allows us to re-examine the firm-, industry-, and region-level factors that affect foreign divestment.

Our findings echo the seminal eclectic paradigm or OLI framework (Dunning, 1981; Dunning, 2000) and the "reverse eclectic paradigm" (Boddewyn, 1983; Schmid and Morschett, 2020). First, the probability of capital withdrawal is negatively correlated with an affiliate's firm size, profit margin, and labor productivity, all of which reflect the *ownership advantage* of MNEs. Second, the probability of

[3] We use "Japanese affiliates" and "Japanese affiliate firms" interchangeably in this study. We refer to their parent firms in Japan as parents or parent firms.

capital withdrawal is negatively correlated with the export intensity to Japan, Japanese capital share, and the business relatedness with the parent firm, all of which represent the *internalization advantage* of MNEs. Third, regarding *location advantage*, in the industries with a lower entry threshold and a higher degree of competition, Japanese MNEs have a higher probability of divestment.

The contribution of this study is threefold. (1) Relative to the qualitative analyses and case studies on foreign divestment, this study employs microdata on Japanese MNEs for survival analysis and examines the factors of divestment from a quantitative perspective. (2) Relative to studies on the impact of a single factor on foreign divestment, we investigate the factors regarding an affiliate firm, parent firm, and business environment. (3) Relative to the literature on divestment only, we also consider the spatial and industrial distribution of Japanese investment in China and distinguish divestment from investment adjustment across industries and regions. Moreover, we provide evidence-based policy implications for foreign divestment.

The rest of this paper is organized as follows. Section II summarizes the literature on foreign divestment and withdrawals. Section III introduces the econometric model and empirical strategy. Section IV describes the data and variables and presents hypotheses and descriptive statistics. Section V reports the baseline estimation results and robustness checks. Section VI reports the extended analyses on the divestment modes, investment adjustment across industries and regions, and industry and region heterogeneity. The final section concludes and presents policy implications.

II. Literature review and hypotheses development

This study is related to a strand of studies on foreign divestment.[4] From the perspectives of an affiliate firm, parent firm, and host country, we sort out the potential factors that may affect foreign divestment. Based on the following review and arguments, we propose three testable hypotheses to guide our empirical analysis.

[4] This study is also related to the extremely broad literature on firm entry and exit and firm heterogeneity and FDI, such as location choice, market access driven or efficiency-seeking driven FDI, and export platform FDI, which will not be reviewed here.

1. Literature review

Firm-level factors such as size, age, ownership, productivity, and profitability are associated with MNEs' divestment probability. Existing studies find that the larger the size of foreign affiliates, the lower the probability of divestment (Chen and Wu, 1996; Belderbos, 2003; Berry, 2013). The probability of foreign capital withdrawal decreases with operating years (Belderbos, 2003; Berry, 2013). However, the relationship between the probability of firm failure and its age is positive or nonlinear (Gao et al., 2017; Mao and Xu, 2018; He and Yang, 2016). Chen and Wu (1996) find that firms with a lower proportion of foreign capital have a higher probability of divestment. Moreover, poor operating performance and low return on investment are sufficient reasons for foreign investors to withdraw capital (Chen and Wu, 1996; Haynes et al., 2003; Berry, 2013). In the literature on foreign capital withdrawal, the role played by productivity is quite limited (Benito, 1997; Berry, 2013).[5] However, improvement in productivity can effectively reduce the probability of firm failure in China (He and Yang, 2016; Mao and Xu, 2018). Regarding exporting behavior, Chen and Wu (1996) show that MNEs in Taiwan with a larger export ratio are more likely to withdraw capital. However, Mao and Xu (2018) find that exporting is beneficial to the survival of firms in mainland China.

Regarding the role of a parent firm, existing studies focus on its size, business diversification, international investment experience, and business relatedness with the affiliate. Research has shown that the operating performance of a parent firm has no significant effect on the divestment of affiliates in the UK (Haynes et al., 2000). Wang and Larimo (2015) find that the degree of diversification increases the divestment probability of North European firms in China, but the expansion of a parent firm's size is beneficial to the survival of the affiliate. In their study on Japanese MNEs in China, Kim et al. (2010) find that a parent firm's investment experience in the same industry reduces the divestment probability of the affiliate. However, if it has investment experience in other industries, it increases the divestment possibility of the affiliate. The probability of divestment is low when parent and affiliate firms are in the same industry or have a vertical industrial connection (Benito, 1997; Berry, 2013).

Regarding the host country environment, at the regional level, some studies argue that the higher

[5] Deseatnicov et al. (2020) find that an affiliate's productivity is positively associated with entry and negatively associated with exit in the case of Japanese MNEs.

the economic growth rate, the lower the probability of divestment (Benito, 1997; Berry, 2013). Other studies note that the higher the labor costs in the region where the firm is located, the higher the probability of divestment (Belderbos and Zou, 2006; Berry, 2013; Li et al., 2019; Borga et al., 2020). Cheng and Kwan (1998) show that the quality of labor forces does not affect foreign investment in China. Gao (2005), however, finds that the quality of labor forces in China is particularly important to attract FDI from the US and Japan. Moreover, Fung et al. (2005) find that infrastructure significantly attracts Japanese direct investment in China. At the industry level, some argue that the impact of industry growth on foreign capital withdrawal is not significant (McCloughan and Stone, 1998), while Wang and Larimo (2015) find that the probability of divestment is negatively related to industry growth in China. Furthermore, Mata and Portugal (2000) find that industry concentration has no significant impact on foreign divestment, but the entry threshold (minimum effective scale) is positively associated with the exit probability.[6]

Although existing studies have examined the factors influencing divestment from different angles, the research objects are mainly developed countries. Due to the differences in data and research methods, there remain significant differences regarding the influencing factors of divestment. Thus, utilizing a novel dataset on Japanese MNEs, this study examines the multi-level factors of an affiliate firm, parent firm, and investment environment that affect the divestment of Japanese MNEs in China. We also examine the heterogeneous effects of divestment modes, industries, regions, and periods. Moreover, the existing literature tends to investigate divestment only. Further, studies on the spatial and industrial adjustment of foreign investment in the host country are limited. Given that China is a big country with significant differences in regions and industries, it is important to investigate this dimension. Thus, we provide a full picture of Japanese divestment in China via further analyses on investment adjustment.

This study is closely related to the empirics on the eclectic paradigm or OLI framework by Dunning (1981). Boddewyn (1983) notes that when at least one of the three advantages (ownership advantage, location advantage, and internalization advantage) are not satisfied, MNEs tend to withdraw their capital. Schmid and Morschett (2020) call this "reverse eclectic paradigm," and deem that most theories of

[6] In the case of Chinese industrial firms, Gao et al. (2017) find that the lower the degree of industry competition, the greater the risk of firm exit. They also argue that the larger the minimum effective scale, the more difficult it is for a firm to reach this threshold and, hence, the higher the probability of exit.

divestment can be ascribed to the change in the three advantages. Size, operating performance, and productivity represent ownership advantage of MNEs. The existing literature generally concludes that such ownership advantage can reduce the risk of divestment. Capital participation, business relatedness, and trade linkage with the parent firm or home country represent the internalization advantage of MNEs, which can improve the efficiency of internal transaction and technology transfer of MNEs. The existing literature largely supports the view that the strengthening of business relatedness and the parent firm's controlling right helps reduce the probability of divestment. The regional and industrial development of host countries reflects the location advantage of MNEs. However, regarding how location advantage affects divestment, the conclusions of the existing literature are not uniform.

2. Hypotheses

Regarding the "reverse eclectic paradigm," we propose hypotheses related to ownership advantage, internalization advantage, and location advantage. The affiliate's firm size, profitability, and labor productivity capture the ownership advantage of MNEs. When such advantage weakens, the probability of MNEs to withdraw capital increases. Accordingly, we propose Hypothesis 1 as follows.

Hypothesis 1: *The increase in firm size, profitability, and labor productivity reduces the divestment probability of Japanese MNEs.*

The strengthening of the relationship between affiliate firms and the home country or parent firms is beneficial to the exertion of the internalization advantage, and it can reduce the probability of foreign divestment. However, with the expansion of the size of the parent firm, the refocusing strategy is more likely to be adopted, which reduces the importance of a single affiliate within the MNE. Therefore, we propose Hypothesis 2 as follows.

Hypothesis 2: *The higher the proportion of Japanese capital and export intensity to Japan, the lower the probability of divestment. Moreover, when the affiliate firm is in the same industry as the parent firm, the lower the probability of divestment. Further, the larger the size of the parent firm, the higher the probability of divestment.*

Regarding location advantage, according to the literature, the higher the regional economic growth rate and labor quality, the lower the labor costs, and the lower the probability of foreign capital withdrawal. Moreover, the higher the industry growth rate, the lower the entry threshold of the industry, and the lower the probability of divestment. Therefore, we propose Hypothesis 3 as follows.

Hypothesis 3: *The higher the regional growth rate, labor quality, and growth rate of the industry, the lower the probability of divestment. Moreover, the higher the regional labor costs and entry threshold of the industry, the higher the probability of divestment.*

We test these three hypotheses in our empirical analysis in Section V.

III. Empirical strategy

Following the literature on foreign divestment (e.g., Chen and Wu, 1996), we employ survival analysis to examine the life duration of Japanese affiliate firms in China. Survival analysis examines the risk of firms experiencing specific events at a specific time. We consider the entry of a Japanese affiliate firm into the Chinese market as the beginning of the survival period and divestment as the ending. By introducing variables at different levels (affiliate firm, parent firm, region, and industry level) into the model, we investigate the impact of various factors on the divestment of MNEs.

In the estimation, we employ the discrete-time survival analysis method. Suppose that T is a discrete random variable of the time of divestment and t is the possible time point of divestment, where t belongs to the integer set {1,2,3,...}. Further, f_{it} and S_{it} are the unconditional probability of divestment of affiliate i in year t and the probability of not withdrawing capital, respectively. If firm i is in normal operation in year t-1, the conditional probability of divestment in year t and the risk function, h_{it}, is shown in equation (1):

$$h_{it} = Pr(T = t|T \geq t) = \frac{f_{it}}{S_{i,t-1}}. \quad (1)$$

We then define a variable, c_i, as follows: if affiliate i withdraws capital during the sample period, then c_i= 1; otherwise, c_i=0. Thus, the contribution of firm i to the likelihood function can be written as $L_i = {f_{it}}^{c_i} {S_{it}}^{1-c_i}$. The likelihood function of the whole sample is as follows:

$$
\begin{aligned}
L &= \prod_{i=1}^{n} {f_{it}}^{c_i} {S_{it}}^{1-c_i}, \\
&= \prod_{i=1}^{n} \left[S_{i,t-1} h_{it}\right]^{c_i} \left[S_{i,t-1}[1-h_{it}]\right]^{1-c_i}, \\
&= \prod_{i=1}^{n} \left[\frac{h_{it}}{1-h_{it}} \prod_{k=1}^{t} (1-h_{ik})\right]^{c_i} \left[\prod_{k=1}^{t} (1-h_{ik})\right]^{1-c_i}, \\
&= \prod_{i=1}^{n} \left[\left(\frac{h_{it}}{1-h_{it}}\right)^{c_i} \prod_{k=1}^{t} (1-h_{ik})\right]. \qquad (2)
\end{aligned}
$$

The difference of various discrete-time survival analyses lies in the distribution of risk functions, including the cloglog, logistic, and probit models based on extreme value, logistic, and normal distributions, respectively, as shown in equations (3) to (5):

$$\log[-\log(1-h_{it})] = \boldsymbol{x}'_{\boldsymbol{it-1}} \cdot \boldsymbol{\beta} + \gamma_i + \varepsilon_{it}, \qquad (3)$$

$$\log[h_{it}/(1-h_{it})] = \boldsymbol{x}'_{\boldsymbol{it-1}} \cdot \boldsymbol{\beta} + \gamma_i + \varepsilon_{it}, \qquad (4)$$

$$h_{it} = \Phi(\boldsymbol{x}'_{\boldsymbol{it-1}} \cdot \boldsymbol{\beta} + \gamma_i + \varepsilon_{it}), \qquad (5)$$

where $\boldsymbol{x}_{\boldsymbol{it-1}}$ are the explanatory variables of the affiliate, parent firm, region, and industry. Further, γ_i denotes affiliate firm-specific, time-invariant, and unobservable heterogeneity; ε_{it} is the error term; and $\Phi(\cdot)$ is the cumulative distribution function of the standard normal distribution.

In the empirical analysis, we also apply the Cox semi-parametric model commonly used in continuous-time survival analysis, as shown in equation (6):

$$h(t,X) = h_0(t) \exp(\boldsymbol{x}'_{\boldsymbol{it-1}} \cdot \boldsymbol{\beta}), \qquad (6)$$

where $h(t,X)$ is the withdrawal risk of Japanese affiliate in year t, $h_0(t)$ is the benchmark risk function of year t, and $\boldsymbol{x}'_{\boldsymbol{it-1}} \cdot \boldsymbol{\beta}$ is the linear combination of the explanatory variables.

Relative to the Cox semi-parametric model, the advantages of discrete-time survival analysis are as follows. First, the continuous-time Cox semi-parametric model has a strict risk proportion assumption (Hess and Persson, 2012). Second, the study sample is annual data with a period of 22 years, and the time interval of the observation unit is relatively large. Thus, this study mainly employs the discrete-time survival analysis method in the estimation.

In the extended analyses, we further use the competitive risk model. We regard the two modes of foreign divestment (dissolution or withdrawal and reduction in control share) as mutually exclusive events. Under the discrete-time setting, the multinomial logit model is usually used to analyze the competitive risk. The risk of event *k* in enterprise *i* is shown in equation (7), where *k*=0 indicates that the Japanese affiliate has not withdrawn, *k*=1 indicates that the Japanese affiliate has dissolved, and *k*=2 indicates that the Japanese capital proportion has reduced:

$$\mathrm{h}_{itk} = \begin{cases} \dfrac{1}{1+\exp(\boldsymbol{x}'_{it-1}\boldsymbol{\beta}_1)+\exp(\boldsymbol{x}'_{it-1}\boldsymbol{\beta}_2)}, & k=0 \\ \dfrac{\exp(\boldsymbol{x}'_{it}\boldsymbol{\beta}_1)}{1+\exp(\boldsymbol{x}'_{it-1}\boldsymbol{\beta}_1)+\exp(\boldsymbol{x}'_{it-1}\boldsymbol{\beta}_2)}, & k=1\,. \\ \dfrac{\exp(\boldsymbol{x}'_{it}\boldsymbol{\beta}_2)}{1+\exp(\boldsymbol{x}'_{it-1}\boldsymbol{\beta}_1)+\exp(\boldsymbol{x}'_{it-1}\boldsymbol{\beta}_2)}, & k=2 \end{cases} \tag{7}$$

IV. Data, variables, and descriptive statistics

1. Data and variables

This study employs data from the Basic Survey on Overseas Business Activities (BSOBA) collected by the METI, Japan. The survey covers Japanese firms with overseas affiliates, excluding firms in the financial, insurance, and real estate sectors, providing basic materials for the Japanese government to formulate policies. This parent-affiliate matched dataset contains affiliate-level information on sales, exports, investment, employment, operation status, founding year, industry and region classifications, and parent level information on firm size, business plan, and industry classification, vital to this study. Thus, to implement our analysis, we use the data on Japanese affiliates in China from 1995 to 2016.

Regarding the explained variables, we construct three dummy variables: the divestment of Japanese affiliates, the inter-provincial adjustment of Japanese affiliates, and the inter-industrial adjustment of Japanese affiliates. We define divestment by the operation status of the affiliate. If the operation status of affiliate i in year t is a "dissolution or withdrawal" or "reduction in control share," then the affiliate has withdrawn its capital in year t; that is, $divest_{it} = 1$, otherwise $divest_{it} = 0$.[7]

In the study of divestment, it is important to distinguish between *exit* and *investment adjustment.* The former means the MNEs withdraw all their investment in China. The latter means the MNEs adjust their investment in China. We define the following two cases as the divestment for the spatial adjustment of investment. (i) After the divestment of affiliate i in province j in year t, its parent firm set up a new affiliate outside province j. (ii) After the divestment in year t, its parent company did not set up a new affiliate outside province j; however, it had affiliates outside province j at the time of divestment and did not withdraw in subsequent years. Regarding these two cases, we consider that affiliate i divested due to the spatial adjustment of investment in year t. Thus, $spa\_adj_{it} = 1$, otherwise $spa\_adj_{it} = 0$.

The industrial adjustment of Japanese affiliates in China is also worthy of attention. We define the adjustment of Japanese affiliates from manufacturing to the service industry as follows. (i) After the divestment of manufacturing affiliate i in year t, its parent firm established a service affiliate. (ii) After the divestment of manufacturing affiliate i in year t, its parent firm did not set up a service affiliate. However, it has a service affiliate in year t, and no capital withdrawal occurs in subsequent years. Regarding these two cases, we consider that manufacturing affiliate i divested given the adjustment to the service industry in year t. Thus, $ind\_adj_{it} = 1$; otherwise $ind\_adj_{it} = 0$.

Referring to the existing literature, we construct the explanatory variables at three levels. At the affiliate firm level, we introduce the following: *size*, the logarithm of the number of employees; *age*, the logarithm of the number of years of operation; *jpshare*, the proportion of Japanese capital; *profit*, the ratio of after-tax profit to sales; and *lbprod*, the logarithm of labor productivity measured by sales per employee. Japanese affiliates in China are heavily dependent on the trade with the Japanese market, and

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[7] Dissolution refers to a situation where the affiliate stops its business activities and loses its status as a legal entity. Withdrawal refers to a situation in which the overseas affiliate was sold, absorbed, merged, relocated (relocation to other country or region), or consolidated. Thus, the overseas affiliate was extinguished from the relevant location and the ratio of investment by Japanese corporations is 0%. Reduction in control share refers to a situation in which the total ratio of investment by Japanese corporations in the overseas affiliate decreases beyond 10% (between 0% and 10%).

the sales to Japan account for more than 50% of total exports and about 35% of total sales. Accordingly, we introduce *jpexpshare*, which is the proportion of sales to Japan in the sum of local sales in China, sales to Japan, and sales to the rest of the world.

At the parent firm level, we introduce the following: *par_size*, the size measured by the logarithm of the number of employees of the parent firm; *par_exper*, the investment experience in China, which is the logarithm of the period after the parent firm has entered the Chinese market; and *par-smind*, whether the parent and affiliate firm are in the same industry (if yes, it is equal to 1; otherwise it is 0).

Regarding China's investment environment, at the region level, we introduce the following: *pro_growth*, provincial GDP growth rate; *pro_wggrowth*, provincial wage growth rate; *pro_lbedu*, provincial labor quality measured by the average education years of the labor force; and *pro_transport*, the growth rate of freight turnover as a proxy of the transportation capacity.[8] At the industry level, we introduce three variables: *ind_growth*, the industry growth rate, which is the growth rate of the number of employees of an industry; *ind_mes*, the entry threshold of an industry, which is the logarithm of the median asset size of the enterprises in this industry; and *ind_HHI*, the degree of industry monopoly, which is captured by the Herfindahl–Hirschman Index (HHI) of the sales revenue of the firms in this industry.[9]

In all estimation specifications, we include a full set of region, industry, and year fixed effects to eliminate the time invariant differences across regions and industries and control for various macroeconomic shocks. The inclusion of fixed effects for Chinese regions is particularly important since the previous study finds that Japanese MNEs are less likely to invest in Chinese regions that suffered greater civilian casualties during the Japanese invasion of China from 1937 to 1945 (Che et al., 2015).

2. Descriptive statistics

This study employs data containing business information on Japanese affiliates in China from 1995 to 2016. Since the survival analysis cannot tackle left censored data, following previous studies on firm

[8] Region-level variables are obtained from the China Statistical Yearbook and China Labour Statistical Yearbook (of various years).

[9] The number of employees by industry is obtained from China Labour Statistical Yearbook (of various years). The industry level data on assets and revenues come from the Wind database on Chinese listed companies.

survival analysis (Bridges and Guariglia, 2010), we delete affiliates established earlier than 1995. For the right-censored data (i.e., enterprises that have not withdrawn their capital at the end of the observation period), no special treatment is required. We finally get 64,706 observations, including 9,909 Japanese affiliates in China, corresponding to 5,166 Japanese parent firms. During the sample period, 1,963 cases of divestment occurred, accounting for 16.5% of the total observations. Table 1 reports the number of Japanese and divested affiliates in China from 1995 to 2016. Moreover, the divestment ratio increases with small fluctuations. Table 2 shows the descriptive statistics of the variables. Thus, to avoid the interference of extreme values, we conduct a 1% truncation treatment on the explanatory variables at the affiliate level.

[Insert Table 1 here]

[Insert Table 2 here]

Regarding Hypotheses 1 to 3, we employ the Kaplan-Meier method to conduct a nonparametric estimation. The Kaplan-Meier statistics are calculated as equation (8). The survival function $\hat{S}(t)$ is the probability that the affiliate has not withdrawn until period t, r_m is the number of affiliates in the risk of divestment in period *m*, and d_m is the number of affiliates with divestment in period *m*:

$$\hat{S}(t) = \prod_{m=1}^{t} \frac{(r_m - d_m)}{r_m}. \tag{8}$$

For continuous variables, we divide the sample into two groups based on the median value of the variable. By comparing the survival function, we present a graphical representation of the influencing factors of Japanese divestment (Figure 3). The horizontal (vertical) axis represents the years after the Japanese investment (the survival rates). Figure 3 shows that the larger the affiliate's firm size, profitability, productivity, Japanese capital share, and export intensity to Japan, the higher the survival rates. Moreover, the business relatedness, parent firm size, and investment experience also matter.[10]

[10] Since we did not control affiliate-level variables here, the Kaplan-Meier results of the parent firm's size

From the Kaplan-Meier method, the log-rank test is usually employed to check whether there is a significant difference between the two groups. The p values of the log-rank test on these variables are 0.000, indicating that there is a significant difference between the two groups in survival function.

[Insert Figure 3 here]

V. Empirical results

This section conducts the baseline estimation and robustness checks. For the baseline estimation, we use the cloglog model to investigate the impact of variables at different levels. The robustness checks include the following: (1) regression analyses via the probit, logit, and Cox models; (2) alternative definition of divestment; and (3) introduction of high-dimensional fixed effects in the specification.

1. Baseline estimation

When divestment takes place, there are more missing values in that year. Given this problem, we consider the lagged value of the explanatory variables. Table 3 presents the estimation results based on the cloglog model.[11]

Column (1) presents the regression results of the variables of the affiliate firms. Consistent with Hypothesis 1, the larger the firm size, the higher the profitability and labor productivity, and the lower the probability of divestment. The increase in the proportion of Japanese capital and export to Japan can reduce the probability of divestment, consistent with Hypothesis 2. Similar to the study on the survival of Chinese firms (He and Yang, 2016), the impact of operating years on the probability of Japanese capital withdrawal is an "inverted U-shaped." Due to the "liabilities of newness," the probability of divestment of the Japanese affiliate increases with the operating time in the early stage. However, there is no such disadvantage in the later stage of operation. When explanatory variables of the parent firm,

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and experience are different with our baseline estimation.

[11] While limiting our analysis to affiliate firms established after 1995, we dropped 16,950 observations from the original dataset. With due consideration of sample completeness, we also use the full sample for the Cloglog model and the results remain almost the same as our baseline estimation. The results are available upon request.

region, and industry are included in columns (2) to (7), the estimation results of variables of the affiliate level remain almost the same.

Columns (2) to (4) consider factors at the parent firm level. In column (2), the estimated coefficient of the parent firm size is significantly positive, which is consistent with Hypothesis 2. In column (3), the estimated coefficient of the parent company's experience is significantly positive. In column (4), the estimated coefficient of the parent firm size remains positive but not significant, and the estimated coefficient of the parent firm's experience remains significantly positive. It shows that the increase in the parent firm's investment experience in China increases the withdrawal probability of the Japanese affiliate.[12] Consistent with Hypothesis 2, the estimated coefficient of the dummy variable of the parent and affiliate in the same industry is always significantly negative. Relative to different industries, if the parent and affiliate within the same industry, the probability of divestment of Japanese MNEs is lower by approximately 24.3%, similar to Benito (1997) and Berry (2013).[13]

Column (5) incorporates control variables at the regional level. The estimated coefficients of the regional economic growth and wage growth are positive, while the estimated coefficients of regional labor quality and freight turnover are negative. However, none are significant. The variables at the regional level are not significant, which does not mean they have no impact on the probability of divestment. They may affect the probability of divestment indirectly. Alternatively, their effects are heterogeneous in the subsamples and offset each other in the whole sample. Column (6) introduces the variables at the industrial level, where the industry growth rate has no significant impact on the probability of divestment. Different from the conclusion of Mata and Portugal (2000), the estimated coefficient of the entry threshold of the industry is significantly negative; thus, the increase in the entry threshold of the industry significantly reduces the probability of divestment. The estimated coefficient of industry concentration is significantly negative; thus, the higher the degree of industry monopoly (or the lower the degree of industry competition), the Japanese MNEs have a lower probability of

[12] We also use the number of Chinese affiliates of the parent firm as the proxy for firm size and investment experience in China, which still shows a significant positive effect on the probability of divestment.

[13] The exponentiated coefficient of the cloglog model is known as the hazard ratio, which, in our case, is the ratio of the hazard when par_smind is equal to 1, as compared to hazard when par_smind equals to 0. Thus, the change in probability of divestment is $1 - e^{-0.278} = 24.3\%$, according to column (4).

divestment. The regression results of regional and industrial-level variables differ from Hypothesis 3. All explanatory variables are included in column (7), and the estimation results are identical to the previous results.

[Insert Table 3 here]

2. Robustness checks

2.1 Probit, logit, and Cox models

We further employ the probit and logit models to adapt to different assumptions of the risk function and apply the Cox semi-parametric method under the continuous-time assumption to conduct the regression. Table 4 presents the results. The estimated coefficients of the explanatory variables are consistent with the cloglog estimation, which indicates that different assumptions on the distribution of the risk function and survival time do not affect the estimation results. Thus, for conciseness, we employ the cloglog model for the estimation in the following parts.

[Insert Table 4 here]

Regarding the "reverse eclectic paradigm," the findings of the baseline estimation can be summarized as follows. First, affiliate firm size, profitability, and productivity level are the proxy indicators of ownership advantage, and they have a negative impact on the probability of divestment. Second, when the affiliate has a close relationship with the parent firm or home country, it can better enjoy the internalization advantage. Therefore, the increase in the proportion of Japanese capital, export to Japan, and the business relatedness between parent and affiliate firms will help MNEs reduce the probability of divestment. Finally, the regional and industrial environment reflects the location advantage. The results show that Japanese MNEs prefer the industrial environment with a high entry threshold and low competition.

2.2 Alternative definition of divestment

In the literature, foreign capital withdrawal is also defined as regarding the last year the affiliate exists in the database as the time point of divestment (He and Yang, 2016). Accordingly, we present the following definition. If the affiliate exists in the dataset in year t, and no longer appears in year $t + 1$, the affiliate is deemed withdrawn in year t. Since a small reduction in the Japanese capital has not been considered under this definition, we further include the "reduction in control share" as the capital withdrawal. Under the new definition, 3,860 cases of divestment of Japanese MNEs exist in China from 1995 to 2016. Columns (1) to (3) of Table 5 presents the estimation results. The estimated coefficients of most explanatory variables are consistent with the baseline estimation.

2.3 Introduction of high-dimensional fixed effects

Further, considering the long panel data employed in this paper, it is necessary to control the time trend at the regional level. Moreover, many Japanese affiliates have a common parent firm, and the decision of divestment is naturally affected by the fixed effect of the parent firm. Thus, we employ the linear probability model for the regression analysis and further incorporate the fixed effects at the parent firm, region-year, and industry-year levels. Columns (4) to (6) of Table 5 presents the estimation results. The estimated coefficients of most explanatory variables are stable.

[Insert Table 5 here]

VI. Extended analyses

The probability of divestment of Japanese MNEs may also be related to the modes and types of divestment, the region and industry where the affiliate is located, and when the affiliate enters China. Thus, in the extended analyses, (1) the divestment in different modes is regarded as two kinds of events indicating that the survival period has ended, and the competitive risk model is used to estimate. Moreover, (2) based on the definition of the *investment adjustment*, the inter-provincial adjustment and inter-industrial adjustment of Japanese affiliates are investigated. Further, (3) the regions and industries where the affiliates are located are divided, after which the corresponding estimations are made. (4)

Additionally, considering the 2008 global financial crisis and the 2011 islands dispute as the time division point, this study also investigates the withdrawal probability of Japanese affiliates in different periods. (5) The future investment plan is analyzed to determine the impact of the parent firm's investment plan on the affiliate's divestment probability.

1. Divestment mode

This study defines two operation states of affiliates as divestment: *dissolution or withdrawal* and *reduction in control share*. Here, we use the competitive risk model for further empirical analyses on the two modes of divestment. The estimation results are shown in Table 6.

Columns (1) and (5) are estimation results of explanatory variables at the affiliate and parent firm levels. Increasing the firm size, profitability, and proportion of export to Japan can significantly reduce the probability of dissolution. However, they have no significant impact on the probability of a reduction in control share. Relative to the dissolution of the affiliate, the increase in the parent firm's capital proportion and the affiliate firm's labor productivity can significantly reduce the probability of the decline in control share. The investment experience of the parent firm in China and the affiliate in the same industry as the parent firm only has a significant impact on the probability of dissolution. In columns (2) and (6), explanatory variables at the regional level are introduced, which have no significant impact on the probability of these two modes of divestment. Further, introducing explanatory variables at the industrial level into columns (3) and (7), the increase in the entry threshold and the decrease in the degree of industrial competition significantly reduce the probability of dissolution, with little influence on the probability of the reduction in control share. Moreover, the parent size has a more significant effect on the probability of the reduction in control share while controlling for industrial-level variables. Columns (4) and (8) include all explanatory variables, and the estimation results are consistent with the previous results.

Dissolution is a more extreme method of divestment, which is more strongly affected by the size of the affiliate, profitability, business relatedness with the parent company, and the degree of industry competition. However, the reduction in control share is relatively moderate, which is usually the measures taken by the parent firm based on the capital proportion and its size. This finding is consistent with Ghertman (1988). As per the "reverse eclectic paradigm," with the weakening of ownership advantage (labor productivity), the affiliate's survival is negatively impacted. When the parent firm's capital proportion is low, or the parent firm's size is large, the parent firm tends to make decisions to optimize the investment portfolio, which increases the probability of a reduction in control share.

[Insert Table 6 here]

2. Adjustment of investment

2.1 Spatial adjustment

When the parent firm adjusts its spatial distribution of investment in China, there may be divestment due to inter-provincial adjustment of investment. In our sample, 883 cases of inter-provincial adjustment of Japanese affiliates exist, of which 368 are relocations from the eastern to the central and western regions, accounting for 42% of the total relocations. For the regression analysis of inter-provincial adjustment, columns (1) to (3) of Table 7 presents the estimation results.

The results of most explanatory variables are consistent with the baseline estimation, but there remain some differences. The export proportion to Japan and the size and experience of the parent firm have a more significant or larger impact on the probability of relocation. Large and experienced MNEs have abundant capital and rich management experience, which can overcome the cost of inter-provincial adjustment. Large-size parent firms can optimize the spatial distribution by production relocation. From the perspective of spatial distribution, a higher export proportion to Japan may depend on local environmental convenience of export, thus restricting the relocation of affiliates to other regions.

[Insert Table 7 here]

2.2 Industrial adjustment

During the sample period, great changes have occurred in China's industrial structure. The proportion of service industry in China's GDP increased from 33.7% in 1995 to 52.4% in 2016. Meanwhile, the proportion of industrial GDP decreased from 46.8% to 39.6% in the same period. The change in industrial structure suggests a change in China's comparative advantage. Moreover, the competitiveness of the manufacturing industry based on cheap labor costs gradually weakened. In this environment, Japanese affiliates also tend to transfer from manufacturing to services. In our sample, for Japanese affiliates, there are 412 cases of adjustment from the manufacturing to the service industry. Among them, the adjustment from manufacturing to wholesale and retail accounts for 88%, showing that Japanese MNEs tend to shift from "manufacturing in China" to "selling in China."

In order to analyze the factors that affect the adjustment of Japanese affiliates from manufacturing to service, we conduct a regression analysis accordingly. Columns (4) to (6) of Table 7 present the estimation results. Similar to the inter-provincial adjustment, the size of the parent firm has a significant positive impact on the inter-industrial adjustment, indicating that large-size parent firms tend to increase investment in the service industry in China and reduce investment in manufacturing. According to the estimated coefficients in the benchmark analysis and industrial adjustment analysis, if parent and affiliate firms are in the same industry, the probability of divestment is reduced by 26.3% and 64.0%, respectively.[14] It shows that when parent and affiliate firms are in the same industry, the adjustment of investment to the service industry can be restrained more strongly.

There are similarities and differences in the estimation results for simple divestment and investment adjustments. Regarding the similarities, the probability of both types of divestment can be reduced by enhancing the ownership advantage, such as size, profitability, and labor productivity. Regarding the differences, the increase in export proportion to Japan can reduce the probability of inter-provincial adjustment. Moreover, the business relatedness between parent and affiliate firms can greatly reduce the probability of inter-industrial adjustment. It shows that when the internalization advantage of firms is limited, Japanese MNEs tend to adopt the strategy of adjusting investment rather than giving up the Chinese market. For the investment adjustment, the estimated coefficients of the parent company's size and investment experience are significantly larger than those in the benchmark analyses, showing that large MNEs with rich investment experience are more inclined to adjust the spatial and industrial distribution of investment.

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[14] Based on the estimated coefficients in columns (8) and (6) in Tables 3 and 8, respectively, the probability of divestment is $1-e^{-0.305}=26.3\%$ in the former and $1-e^{-1.021}=64.0\%$ in the latter.

3. Divestment by region and industry

3.1 Divestment in different regions

Japanese affiliates are mainly distributed in Eastern China, but the proportion of divestment in central and western China is slightly higher than that in Eastern China. During the sample period, the divestment ratio of Japanese affiliates in the eastern (central and western) region(s) is 2.9% (3.5%). For divestment in different regions, columns (1) to (4) of Table 8 show the estimation results.

Columns (1) and (3) are the estimation results of explanatory variables at the affiliate and parent firm levels, which have a more significant and stronger impact on the divestment probability of Japanese affiliates in Eastern China, except for profitability. In columns (2) and (4), regional level variables show no significant impact in both samples. At the industry level, the increase in industry growth rate only significantly reduces the probability of Japanese affiliates' divestment in the central and western regions. Meanwhile, the entry threshold and industry concentration only have a significant negative impact on affiliates in the eastern region. This result shows that Japanese affiliates in the central and western regions have a better survival state in the fast-growing industries, while the Japanese affiliates in the eastern region prefer the industry environment with a high entry threshold and low competition.

[Insert Table 8 here]

3.2 Divestment in different industries

During our sample period, the number of divested affiliates in manufacturing accounts for 62.5% of the total Japanese divestment (see Appendix Table A1 for the distribution of divestment by industry). Thus, to investigate the factors of divestment in different industries, we conduct an empirical investigation on the manufacturing and service industry, respectively.[15] Columns (5) to (8) of Table 8 show the results. From comparing columns (5) and (7), for the variables at the affiliate and parent firm levels, the parent firm's investment experience in China, as well as parent and affiliate firms in the same

[15] For the manufacturing industry, we alternatively use the Annual Survey on Industrial Firms (ASIF) from 1998 to 2013, collected by the National Bureau of Statistics, to construct industry level growth rate, HHI, and entry threshold. The ASIF data covers about 90% of industrial output in China.

industry, only have a significant impact on the divestment probability of manufacturing affiliates. This result shows that the internalization advantage of MNEs through business relatedness is more important for the survival of manufacturing affiliates, similar to Ogasavara and Hoshino's (2008) study on Japanese manufacturing firms in Brazil. With the accumulation of the parent firm's experience in China, the divestment probability of manufacturing affiliates rises. From comparing columns (6) and (8), the regional variables are not significant. The increase in the industry concentration and growth rate significantly reduces the divestment probability of Japanese affiliates in the service industry, which indicates that they prefer high growth or low competition of the industry environment.

4. Divestment in different periods

In different periods, the opportunities and challenges faced by Japanese MNEs in China are different. Here, we consider the 2008 global financial crisis and the China-Japan islands dispute in 2012 as the time division point to analyze factors influencing the divestment of Japanese affiliates in China in different periods.[16]

4.1 Global financial crisis

We divide the sample into two subsamples: Japanese affiliates in China before and after 2008. Columns (1) to (4) of Table 9 shows the estimation results. By comparing columns (1) and (3), for explanatory variables at the affiliate and parent firm levels, most variables have a similar impact before and after the financial crisis. Meanwhile, the proportion of exports to Japan only have a significant impact before the financial crisis. Given the growing trend of selling in China instead of producing in China and exporting to Japan, the importance of trade relationship with Japanese market is diminishing. Columns (2) and (4) incorporate region and industry level variables, and the regional level variables are not significant. The industrial concentration significantly impacts the probability of divestment during the second period, which shows that Japanese affiliates prefer a less competitive environment after the crisis.

[16] Since survival analysis requires the elimination of firms established before the start of the observation period, sub-sample analysis regarding time would suffer great data loss. Therefore, we use the full dataset and divide it into two sub-samples of different time periods.

[Insert Table 9 here]

4.2 Islands dispute

The nationalization of the disputed islands by the Japanese government in September 2012 led to a large and unprecedented nationwide boycott of Japanese firms and goods, which significantly impacted the performance and expectations of Japanese MNEs in China (see Chen et al., 2016). Thus, we conduct regression analyses for the Japanese affiliates before and after 2012. Columns (5) to (8) of Table 9 show the estimation results. Columns (5) and (7) include variables at the affiliate and parent firm levels. Similar to the analysis before and after the financial crisis, the proportion of exports to Japan only influence the probability of divestment before the dispute. The impacts of parent investment experience in China and business relatedness between parents and affiliates also recede after the dispute.

Consistent with the trend in the analysis of the financial crisis, the impact of Japanese capital share and productivity charts a growing pattern. In the early stage of China's opening to the outside world, foreign investment usually adopts the form of joint ventures to reduce the liability of foreign investors and enter the industries that restrict the wholly foreign-owned enterprises or the foreign capital proportion. The barriers to establishing wholly foreign-owned enterprises in China have been reduced, given the improvement of China's market openness. However, in joint venture operations, cultural and management conflicts and technology transfer problems to local partners exits. Thus, wholly foreign-owned enterprises are an important trend in the development of foreign-funded enterprises in China.

Among the regional variables in columns (6) and (8), the regional economic growth after the dispute significantly and positively impacts divestment, while the improvement in regional labor quality and transportation capacity significantly reduces the divestment probability after 2012. Among the industrial variables, the increase in industry growth rate reduces the divestment probability before 2012, while industry concentration only has a significant impact after 2012. Given tense political relations, Japanese affiliates prefer more stable and less competitive environments than fast-growing ones in the early stage.

Hence, the advantage of Japanese MNEs in China differ by periods: the importance of ownership advantage is growing in the later stage. In the early stage, internalization advantage mainly depends on the trade relationship with Japan and business relatedness with the parent company. In the later stage, the parent firm’s controlling right over the affiliate company wields more importance for more efficient management and core technology protection.

5. Future investment plan

Since 2004, the dataset used in this study also contains information on the parent firm’s future business plan in China. Parent firms report whether they have plans to reduce their business in China in five years. Thus, we further investigate the impact of the parent firm’s future divestment intention on the actual divestment probability of the affiliate. In the sample of affiliates established after 2004, there are 430 records of the parent firm’s plan to reduce its investment and production in China in the future.

A new explanatory variable of the parent firm’s capital withdrawal plan with a lag period is included for regression analysis. Table 10 presents the results. Under different model specifications, the estimated coefficients of the parent firm’s future divestment intention are always significantly positive, which indicates that the probability of divestment of the affiliate is significantly affected by the parent firm’s decision in advance.

[Insert Table 10 here]

VII. Conclusion and policy implications

Based on the comprehensive microdata of Japanese affiliates in China from 1995 to 2016, this study employs survival analysis to investigate the influencing factors of foreign divestment in China. The results of the baseline estimation are consistent with the expectation of “reverse eclectic theory.” The affiliate’s size, profitability, and labor productivity reflect the ownership advantage of MNEs, with a significant negative impact on the probability of divestment of Japanese MNEs. The business relatedness between affiliate and parent firms, capital and trade linkage with the home country are related to the internalization advantage of MNEs. These factors can reduce the probability of divestment of Japanese MNEs. Regarding location advantage, Japanese MNEs prefer the industry environment with a high entry threshold or low level of competition. In the robustness checks, we employ alternative specifications of the risk function distribution and survival time, an alternative definition of divestment, and the introduction of higher dimensional fixed effects. The main results remain valid.

To explore the structural characteristics and dynamic changes of Japanese MNEs' divestment in China, we conduct extended analyses. The analysis of the competitive risk model shows that when the ownership advantage (e.g., firm size and profitability) and internalization advantage (e.g., parent and affiliate firms' business relatedness) weaken, the probability of dissolution increases; the lower the productivity level and capital proportion held by the parent firm, the higher the probability of the reduction in control share. The results on investment adjustment show that the weakening of ownership and internalization advantages lead to a more active adjustment of Japanese MNEs' spatial and industrial distribution in China, especially for those having a large and experienced parent firm. Moreover, Japanese affiliates in the eastern region are more vulnerable to changes in internalization advantage. The internalization advantage through business relatedness has a greater impact on the probability of divestment of manufacturing affiliates. The Japanese capital share has growing importance on the divestment probability in the later stage. Meanwhile, the export intensity to Japan only has a significant impact in the early stage.

Hence, we have the following policy implications. First, the advantage MNEs rely on for survival and development differ by periods, regions, and industries. Thus, to reduce the probability of divestment, MNEs in the host country should adjust their business activities and increase efficiency according to the environment. For example, for Japanese affiliates in recent periods, improving the level of technology and productivity is crucial. Second, with the deepening of China's opening-up and relaxation of restrictions on foreign capital, China remains a vital host country of foreign investment. Thus, relative to the exit type of divestment, MNEs should adapt to the changes in China's different regions and industries and adjust their production and investment distribution in China accordingly. Finally, the Chinese government should address the dynamic trend of foreign capital withdrawal, form an effective early warning mechanism, and create a good business environment for MNEs. In China, the central government should also pay attention to the inter-provincial adjustment of MNEs to avoid resource consumption by the local governments' competition for attracting foreign investment.

Finally, foreign divestment may have some non-negligible negative effects on Chinese economy through employment destruction, input-output linkage, and technology transfer. It is beyond the scope of this study and we leave it as future work.

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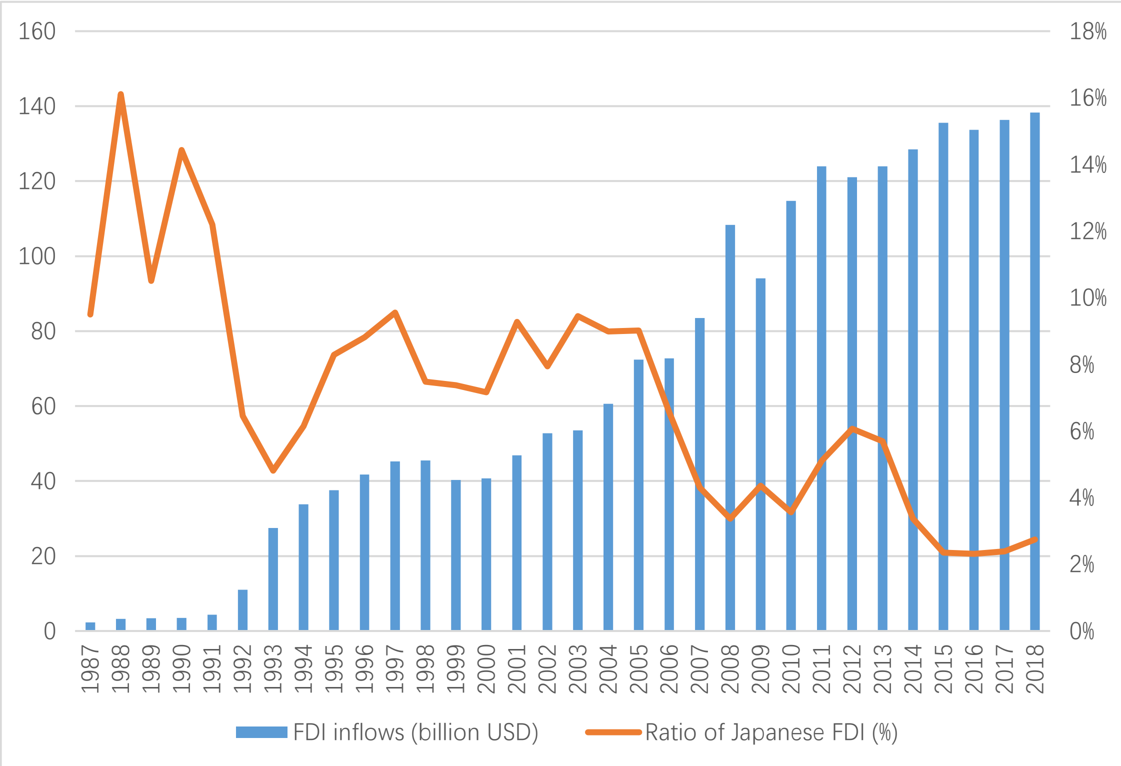
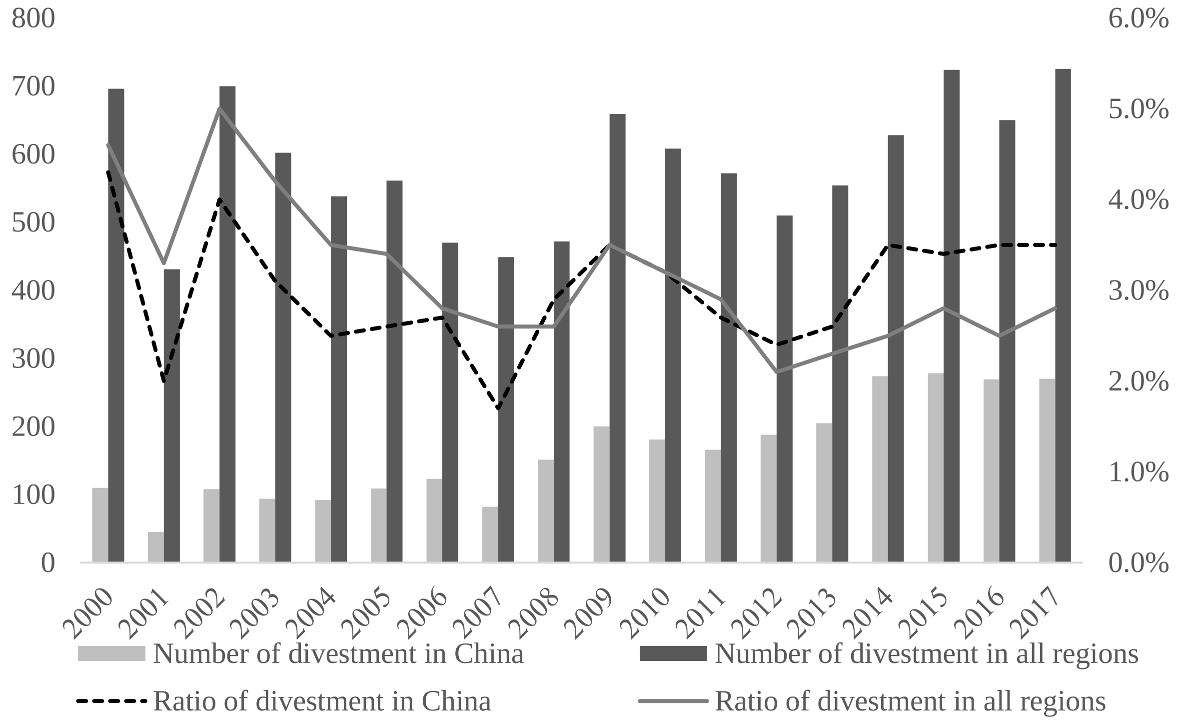
Figures and Tables

Figure 1. Foreign investment and Japanese investment in China, 1987–2018



Source: Ministry of Commerce, China.

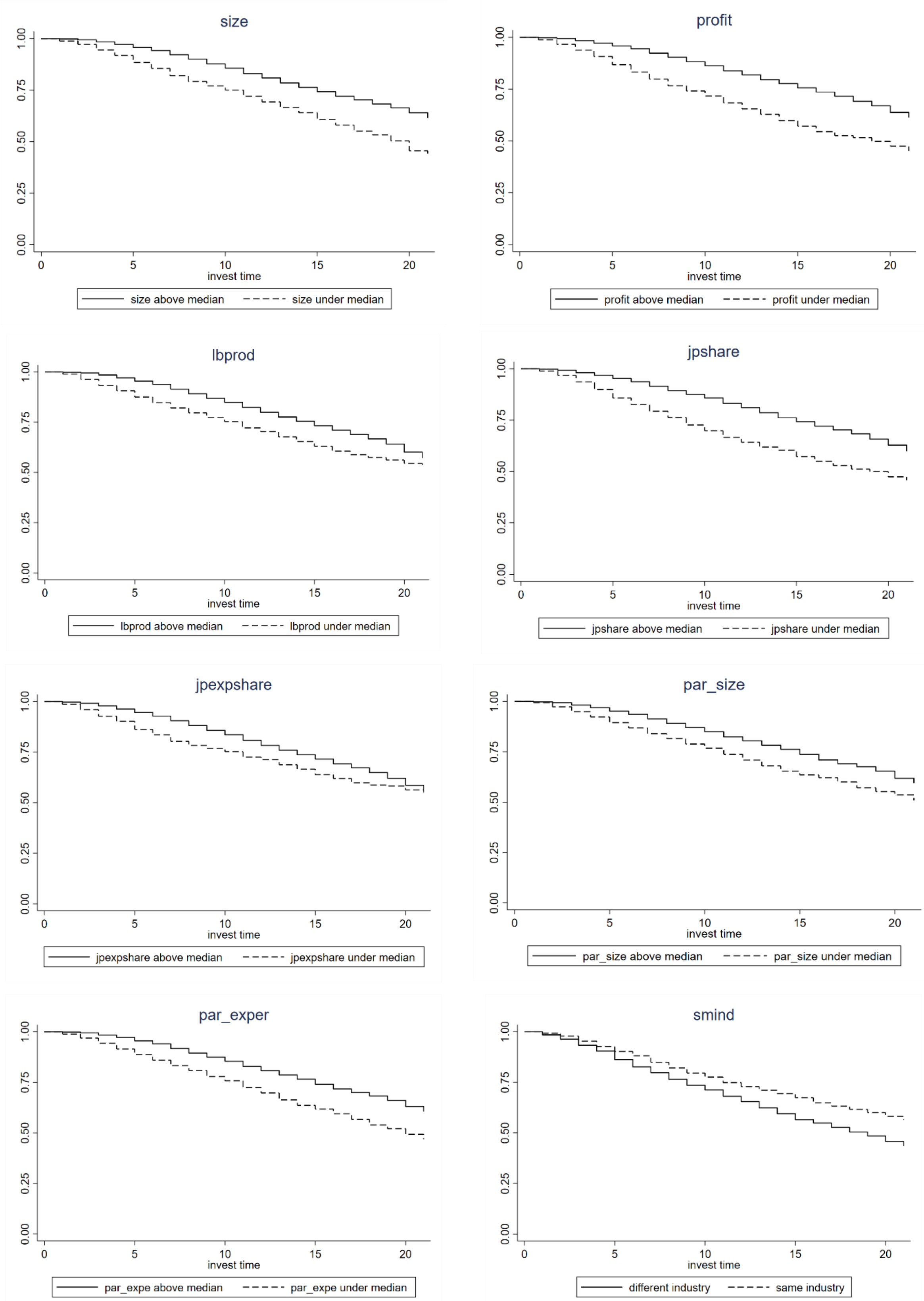
Figure 2. Japanese divestment in China and the world



Note: Ratio of divestment = Number of foreign divestment / (Total number of foreign affiliates with valid responses + Number of overseas divestment) × 100.

Source: Basic Survey on Overseas Business Activities (BSOBA), METI, Japan.

Figure 3. Kaplan-Meier survival function



Source: Authors' calculation based on BSOBA, METI.

Table 1. Japanese divested affiliates in the study sample

Year	Total	Divested	Divestment ratio	Year	Total	Divested	Divestment ratio
1995	211	0	0.0%	2006	2933	82	2.8%
1996	419	1	0.2%	2007	3213	60	1.9%
1997	554	8	1.4%	2008	3698	108	2.9%
1998	594	4	0.7%	2009	4044	152	3.8%
1999	727	19	2.6%	2010	4203	134	3.2%
2000	802	23	2.9%	2011	4513	146	3.2%
2001	865	19	2.2%	2012	5917	154	2.6%
2002	1213	29	2.4%	2013	6099	182	3.0%
2003	1593	39	2.4%	2014	6077	207	3.4%
2004	2067	44	2.1%	2015	6362	264	4.1%
2005	2553	50	2.0%	2016	6049	238	3.9%

Source: Authors' calculation based on BSOBA, METI.

Table 2. Descriptive statistics

Variables	Definition	Mean	Median	S.D.	Obs.
divest	Dummy variable for divestment (1=Yes)	0.030	0	0.172	64706
spa_adj	Dummy variable for inter-provincial investment adjustment (1=Yes)	0.014	0	0.116	64706
ind_adj	Dummy variable for investment adjustment from manufacturing to services (1=Yes)	0.011	0	0.103	38281
Affiliate-level factors					
size	Log of number of employees	4.082	4.143	1.679	56392
age	Log of years of operation	1.910	2.079	0.710	64706
jpshare	Proportion of Japanese capital	0.848	1	0.249	63600
profit	Ratio of after-tax profit to sales	-0.099	0.020	0.586	51559
lbprod	Log of sales per employee	2.361	2.269	1.451	52795
jpexpshare	Proportion of sales to Japan in total sales	0.223	0	0.353	53970
Parent-level factors					
par_size	Log of number of employees in parent firm	6.605	6.551	1.852	61430
par_exper	Log of years of parent investing in China	1.833	1.946	0.879	64706
par_smind	Dummy variable for parent and affiliate in the same industry (1=Yes)	0.634	1	0.482	64706
Region/Industry-level factors					
pro_growth	Provincial GDP growth rate	0.120	0.112	0.057	64444
pro_wggrowth	Provincial wage growth rate	0.118	0.116	0.037	64241
pro_lbedu	Provincial average education years of the labor force	2.352	2.359	0.132	63439
pro_transport	Provincial growth rate of freight turnover	0.189	0.074	1.509	64444
ind_growth	Growth rate of the number of employees of industries	0.038	0.009	0.104	60736
ind_mes	Log of median asset size of industries	21.221	21.140	0.753	60948
ind_HHI	Herfindahl index of industries	0.078	0.052	0.076	60948

Source: Authors' calculation based on BSOBA, METI.

Table 3. Baseline estimation: Cloglog model

Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
size	-0.328***	-0.359***	-0.373***	-0.380***	-0.388***	-0.384***	-0.394***
	(0.025)	(0.031)	(0.032)	(0.033)	(0.033)	(0.035)	(0.036)
age	1.513***	1.589***	1.576***	1.598***	1.624***	1.609***	1.649***
	(0.268)	(0.272)	(0.275)	(0.276)	(0.280)	(0.298)	(0.303)
age^2	-0.306***	-0.317***	-0.324***	-0.325***	-0.327***	-0.323***	-0.328***
	(0.073)	(0.074)	(0.074)	(0.074)	(0.075)	(0.080)	(0.081)
jpshare	-1.206***	-1.204***	-1.229***	-1.236***	-1.222***	-1.170***	-1.156***
	(0.124)	(0.130)	(0.137)	(0.137)	(0.139)	(0.148)	(0.150)
profit	-0.266***	-0.243***	-0.251***	-0.245***	-0.246***	-0.215***	-0.217***
	(0.039)	(0.040)	(0.041)	(0.042)	(0.042)	(0.046)	(0.047)
lbprod	-0.154***	-0.184***	-0.190***	-0.197***	-0.199***	-0.226***	-0.229***
	(0.029)	(0.031)	(0.031)	(0.032)	(0.032)	(0.035)	(0.035)
jpexpshare	-0.254***	-0.217**	-0.236**	-0.217**	-0.218**	-0.224**	-0.225**
	(0.096)	(0.097)	(0.100)	(0.101)	(0.102)	(0.110)	(0.112)
par_size		0.069***		0.033	0.036	0.057**	0.060**
		(0.021)		(0.025)	(0.025)	(0.027)	(0.027)
par_expe			0.218***	0.181***	0.181***	0.201***	0.204***
			(0.051)	(0.056)	(0.057)	(0.062)	(0.062)
par_smind		-0.297***	-0.282***	-0.278***	-0.285***	-0.296***	-0.305***
		(0.068)	(0.071)	(0.071)	(0.072)	(0.077)	(0.078)
pro_growth					1.015		0.378
					(1.450)		(1.550)
pro_wggrowth					0.721		1.402
					(1.310)		(1.425)
pro_lbedu					-0.047		-0.365
					(1.237)		(1.314)
pro_transport					-0.006		-0.004
					(0.026)		(0.027)
ind_growth						-1.051	-1.111
						(0.679)	(0.686)
ind_mes						-0.333**	-0.381**
						(0.166)	(0.170)
ind_HHI						-2.444**	-2.529**
						(1.165)	(1.190)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	41730	41571	41730	41571	41012	36899	36396

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 4. Probit, logit, and Cox models

Explanatory variables	Probit (1)	Probit (2)	Logit (3)	Logit (4)	Cox (5)	Cox (6)
size	-0.168***	-0.175***	-0.393***	-0.407***	-0.350***	-0.355***
	(0.018)	(0.020)	(0.036)	(0.039)	(0.028)	(0.030)
age	0.680***	0.690***	1.646***	1.692***	.	.
	(0.121)	(0.133)	(0.285)	(0.313)	.	.
age^2	-0.138***	-0.135***	-0.333***	-0.335***	.	.
	(0.032)	(0.035)	(0.077)	(0.084)	.	.
jpshare	-0.579***	-0.546***	-1.288***	-1.204***	-1.153***	-1.062***
	(0.070)	(0.075)	(0.146)	(0.159)	(0.124)	(0.135)
profit	-0.127***	-0.113***	-0.263***	-0.233***	-0.229***	-0.205***
	(0.022)	(0.024)	(0.045)	(0.051)	(0.035)	(0.039)
lbprod	-0.091***	-0.105***	-0.205***	-0.238***	-0.186***	-0.213***
	(0.015)	(0.017)	(0.034)	(0.037)	(0.031)	(0.033)
jpexshare	-0.099**	-0.102**	-0.227**	-0.236**	-0.195**	-0.192*
	(0.045)	(0.051)	(0.104)	(0.116)	(0.095)	(0.105)
par_size	0.014	0.026**	0.034	0.062**	0.032	0.057**
	(0.011)	(0.012)	(0.025)	(0.028)	(0.024)	(0.027)
par_exper	0.078***	0.090***	0.188***	0.211***	0.152***	0.165***
	(0.027)	(0.030)	(0.059)	(0.065)	(0.049)	(0.054)
par_smind	-0.123***	-0.137***	-0.285***	-0.313***	-0.260***	-0.281***
	(0.032)	(0.036)	(0.074)	(0.081)	(0.067)	(0.071)
pro_growth		0.256		0.474		0.296
		(0.723)		(1.611)		(1.450)
pro_wggrowth		0.688		1.491		1.433
		(0.644)		(1.472)		(1.376)
pro_lbedu		-0.079		-0.345		-0.418
		(0.603)		(1.359)		(1.172)
pro_transport		-0.002		-0.004		-0.003
		(0.012)		(0.028)		(0.028)
ind_growth		-0.519*		-1.140		-1.086
		(0.313)		(0.710)		(0.662)
ind_mes		-0.167**		-0.391**		-0.364**
		(0.078)		(0.176)		(0.160)
ind_HHI		-1.178**		-2.632**		-2.377**
		(0.541)		(1.232)		(1.115)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes
N	41571	36396	41571	36396	41633	36490

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 5. Divestment redefined and linear probability model

Explanatory variables	Divestment redefined (1)	(2)	(3)	linear probability model (4)	(5)	(6)
size	-0.141***	-0.144***	-0.156***	-0.016***	-0.017***	-0.017***
	(0.023)	(0.023)	(0.025)	(0.001)	(0.001)	(0.001)
age	0.704***	0.736***	0.853***	0.041***	0.042***	0.043***
	(0.183)	(0.186)	(0.208)	(0.006)	(0.006)	(0.006)
age^2	-0.132**	-0.139***	-0.148**	-0.007***	-0.008***	-0.008***
	(0.051)	(0.052)	(0.058)	(0.002)	(0.002)	(0.002)
jpshare	-0.810***	-0.792***	-0.790***	-0.039***	-0.039***	-0.035***
	(0.107)	(0.108)	(0.121)	(0.006)	(0.006)	(0.006)
profit	-0.135***	-0.137***	-0.145***	-0.009***	-0.009***	-0.008***
	(0.037)	(0.038)	(0.043)	(0.003)	(0.003)	(0.003)
lbprod	-0.097***	-0.098***	-0.108***	-0.005***	-0.006***	-0.006***
	(0.024)	(0.024)	(0.027)	(0.001)	(0.001)	(0.001)
jpexshare	-0.281***	-0.290***	-0.301***	-0.003	-0.002	0.000
	(0.077)	(0.078)	(0.089)	(0.004)	(0.004)	(0.004)
par_size	0.011	0.013	0.041*	-0.004	-0.003	-0.003
	(0.019)	(0.019)	(0.022)	(0.003)	(0.003)	(0.003)
par_exper	0.076*	0.077*	0.095**	0.022***	0.022***	0.020***
	(0.043)	(0.043)	(0.048)	(0.003)	(0.003)	(0.003)
par_smind	-0.235***	-0.243***	-0.290***	-0.008**	-0.008**	-0.007**
	(0.054)	(0.054)	(0.062)	(0.003)	(0.003)	(0.003)
pro_growth		1.557	1.097		0.002	-0.128
		(1.193)	(1.286)		(0.277)	(0.305)
pro_wggrowth		1.128	1.481		-0.144	-0.065
		(0.928)	(1.002)		(0.253)	(0.311)
pro_lbedu		-1.152	-1.550		-0.048	-0.032
		(0.919)	(0.980)		(0.062)	(0.068)
pro_transport		-0.005	-0.005		0.001	0.001
		(0.018)	(0.018)		(0.002)	(0.002)
ind_growth			-0.841*			-0.034
			(0.479)			(0.077)
ind_mes			-0.492***			-0.004
			(0.125)			(0.006)
ind_HHI			-1.713*			0.007
			(0.959)			(0.056)
Year FE	Yes	Yes	Yes	No	No	No
Reg. FE	Yes	Yes	Yes	No	No	No
Ind. FE	Yes	Yes	Yes	No	No	No
Parent FE	No	No	No	Yes	Yes	Yes
Reg.-Year FE	No	No	No	Yes	Yes	Yes
Ind.-Year FE	No	No	No	Yes	Yes	Yes
N	37425	37425	32796	41067	40513	35943

Notes: The values in the brackets are standard errors. Standard errors are clustered at parent firms in the linear probability model. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 6. Modes of divestment: Competitive risk model

Explanatory variables	Dissolution				Reduction in control share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
size	-0.386***	-0.389***	-0.384***	-0.388***	-0.147	-0.161	-0.171	-0.189*
	(0.029)	(0.029)	(0.031)	(0.031)	(0.102)	(0.104)	(0.106)	(0.109)
age	1.508***	1.530***	1.536***	1.565***	2.729**	2.686**	2.388**	2.374*
	(0.281)	(0.284)	(0.306)	(0.309)	(1.245)	(1.259)	(1.218)	(1.226)
age^2	-0.304***	-0.307***	-0.308***	-0.314***	-0.743**	-0.721**	-0.664**	-0.650*
	(0.076)	(0.077)	(0.082)	(0.083)	(0.337)	(0.340)	(0.332)	(0.333)
jpshare	-0.921***	-0.906***	-0.818***	-0.801***	-4.412***	-4.367***	-4.414***	-4.371***
	(0.139)	(0.140)	(0.150)	(0.151)	(0.437)	(0.439)	(0.457)	(0.459)
profit	-0.278***	-0.280***	-0.251***	-0.254***	0.408	0.456	0.422	0.484
	(0.043)	(0.043)	(0.048)	(0.048)	(0.311)	(0.327)	(0.312)	(0.330)
lbprod	-0.182***	-0.181***	-0.207***	-0.206***	-0.409***	-0.437***	-0.452***	-0.484***
	(0.032)	(0.032)	(0.034)	(0.034)	(0.120)	(0.121)	(0.126)	(0.127)
jpexshare	-0.195*	-0.195*	-0.207*	-0.205*	-0.489	-0.457	-0.316	-0.279
	(0.101)	(0.101)	(0.110)	(0.111)	(0.412)	(0.414)	(0.416)	(0.418)
par_size	0.026	0.028	0.046*	0.048*	0.137	0.147	0.198**	0.210**
	(0.025)	(0.025)	(0.027)	(0.027)	(0.095)	(0.096)	(0.100)	(0.102)
par_exper	0.151***	0.147***	0.165***	0.161***	0.323	0.326	0.340	0.348
	(0.053)	(0.053)	(0.058)	(0.058)	(0.214)	(0.216)	(0.226)	(0.228)
par_smind	-0.276***	-0.278***	-0.283***	-0.285***	-0.272	-0.355	-0.362	-0.443*
	(0.072)	(0.072)	(0.077)	(0.077)	(0.257)	(0.260)	(0.265)	(0.268)
pro_growth		0.790		-0.098		5.223		6.197
		(1.527)		(1.629)		(5.625)		(5.891)
pro_wggrowth		0.641		1.540		4.376		1.574
		(1.373)		(1.492)		(5.269)		(5.503)
pro_lbedu		-0.206		-0.548		1.624		1.227
		(1.290)		(1.366)		(4.640)		(4.875)
pro_transport		-0.008		-0.006		0.590		0.520
		(0.027)		(0.028)		(0.409)		(0.418)
ind_growth			-1.083	-1.141			0.514	0.457
			(0.717)	(0.723)			(2.440)	(2.485)
ind_mes			-0.310*	-0.353**			-0.443	-0.517
			(0.171)	(0.175)			(0.645)	(0.669)
ind_HHI			-2.435**	-2.590**			0.019	1.225
			(1.204)	(1.221)			(4.544)	(4.680)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	41699	41140	37049	36546	41699	41140	37049	36546

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 7. Investment adjustment: Cloglog model

Explanatory variables	Inter-provincial adjustment			Inter-industrial adjustment		
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.427***	-0.434***	-0.430***	-0.448***	-0.454***	-0.452***
	(0.036)	(0.037)	(0.039)	(0.053)	(0.053)	(0.056)
age	1.700***	1.761***	1.966***	1.974***	2.143***	2.149***
	(0.389)	(0.395)	(0.433)	(0.602)	(0.622)	(0.652)
age^2	-0.389***	-0.400***	-0.463***	-0.456***	-0.493***	-0.488***
	(0.106)	(0.108)	(0.117)	(0.159)	(0.163)	(0.171)
jpshare	-1.491***	-1.456***	-1.371***	-1.357***	-1.357***	-1.384***
	(0.173)	(0.175)	(0.188)	(0.249)	(0.252)	(0.263)
profit	-0.234***	-0.233***	-0.229***	-0.242***	-0.249***	-0.236***
	(0.054)	(0.055)	(0.059)	(0.078)	(0.079)	(0.083)
lbprod	-0.178***	-0.183***	-0.207***	-0.241***	-0.248***	-0.261***
	(0.040)	(0.040)	(0.043)	(0.061)	(0.061)	(0.064)
jpexshare	-0.422***	-0.421***	-0.409**	-0.370*	-0.357*	-0.384*
	(0.151)	(0.152)	(0.164)	(0.205)	(0.208)	(0.217)
par_size	0.203***	0.208***	0.223***	0.271***	0.274***	0.270***
	(0.035)	(0.035)	(0.038)	(0.051)	(0.051)	(0.054)
par_exper	0.717***	0.707***	0.752***	0.913***	0.907***	0.998***
	(0.093)	(0.094)	(0.102)	(0.155)	(0.155)	(0.169)
par_smind	-0.460***	-0.458***	-0.452***	-1.009***	-1.023***	-1.021***
	(0.096)	(0.097)	(0.102)	(0.139)	(0.140)	(0.146)
pro_growth		0.748	0.090		-3.432	-3.687
		(1.931)	(2.050)		(2.983)	(3.103)
pro_wggrowth		-0.437	0.242		-1.805	-0.893
		(1.840)	(1.996)		(2.638)	(2.781)
pro_lbedu		1.897	1.571		-0.844	-1.354
		(1.715)	(1.812)		(2.526)	(2.612)
pro_transport		0.017	0.021		0.080*	0.079*
		(0.028)	(0.029)		(0.041)	(0.041)
ind_growth			-1.187			-0.508
			(1.007)			(1.488)
ind_mes			-0.335			-0.153
			(0.209)			(0.341)
ind_HHI			-1.138			-1.261
			(1.643)			(2.512)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes
N	41095	40543	35920	24209	23843	21440

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 8. Divestment in different regions and industries: Cloglog model

Explanatory variables	Eastern China		Central and western China		Manufacturing		Services	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
size	-0.411***	-0.417***	-0.277***	-0.296***	-0.385***	-0.409***	-0.347***	-0.347***
	(0.037)	(0.039)	(0.077)	(0.083)	(0.036)	(0.049)	(0.054)	(0.061)
age	1.802***	1.915***	0.520	0.410	1.557***	1.520***	1.969***	2.205***
	(0.307)	(0.340)	(0.659)	(0.674)	(0.387)	(0.414)	(0.428)	(0.494)
age^2	-0.365***	-0.390***	-0.068	-0.019	-0.317***	-0.282***	-0.447***	-0.536***
	(0.083)	(0.092)	(0.178)	(0.184)	(0.101)	(0.109)	(0.120)	(0.138)
jpshare	-1.331***	-1.267***	-0.890**	-0.621	-1.208***	-1.180***	-1.175***	-1.078***
	(0.151)	(0.163)	(0.374)	(0.414)	(0.161)	(0.187)	(0.217)	(0.246)
profit	-0.244***	-0.213***	-0.231**	-0.238**	-0.249***	-0.234***	-0.259***	-0.228***
	(0.046)	(0.052)	(0.113)	(0.120)	(0.056)	(0.062)	(0.062)	(0.074)
lbprod	-0.217***	-0.244***	-0.128	-0.158*	-0.184***	-0.198***	-0.212***	-0.261***
	(0.036)	(0.038)	(0.086)	(0.093)	(0.043)	(0.048)	(0.047)	(0.053)
jpexshare	-0.219*	-0.211*	-0.334	-0.347	-0.192	-0.205	-0.110	-0.109
	(0.112)	(0.124)	(0.252)	(0.271)	(0.121)	(0.133)	(0.164)	(0.199)
par_size	0.054*	0.084***	-0.063	-0.062	0.028	0.039	0.040	0.083*
	(0.027)	(0.030)	(0.062)	(0.067)	(0.033)	(0.035)	(0.038)	(0.045)
par_exper	0.199***	0.209***	0.133	0.181	0.231***	0.261***	0.106	0.135
	(0.062)	(0.067)	(0.138)	(0.149)	(0.068)	(0.084)	(0.082)	(0.095)
par_smind	-0.290***	-0.306***	-0.256	-0.312	-0.480***	-0.486***	0.064	0.059
	(0.078)	(0.085)	(0.193)	(0.204)	(0.087)	(0.097)	(0.112)	(0.126)
pro_growth		-0.532		4.445		1.131		-0.930
		(2.060)		(5.235)		(2.010)		(2.626)
pro_wggrowth		0.962		4.100		-0.263		3.115
		(1.560)		(5.228)		(1.861)		(2.405)
pro_lbedu		-0.050		-1.367		0.225		-3.388
		(1.467)		(3.625)		(1.668)		(2.360)
pro_transport		-0.008		-0.132		0.037		-0.076
		(0.028)		(0.825)		(0.035)		(0.048)
ind_growth		-0.700		-3.878*		0.514		-2.679**
		(0.737)		(2.150)		(1.000)		(1.116)
ind_mes		-0.401**		-0.285		-0.237		-0.337
		(0.186)		(0.467)		(0.244)		(0.321)
ind_HHI		-3.313**		-0.996		-1.219		-4.227**
		(1.332)		(2.884)		(1.633)		(1.994)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	37029	32395	4339	3795	24866	22066	15856	13518

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 9. Divestment in different periods: Cloglog model

	Before 2008		After 2008		Before 2012		After 2012	
Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
size	-0.370***	-0.403***	-0.420***	-0.408***	-0.369***	-0.389***	-0.467***	-0.452***
	(0.042)	(0.045)	(0.037)	(0.039)	(0.032)	(0.034)	(0.056)	(0.060)
age	1.655***	2.038***	1.240***	1.146***	1.540***	1.739***	1.281***	1.282***
	(0.428)	(0.480)	(0.307)	(0.330)	(0.321)	(0.355)	(0.409)	(0.451)
age^2	-0.292**	-0.380***	-0.226***	-0.211***	-0.284***	-0.332***	-0.226**	-0.230**
	(0.117)	(0.130)	(0.075)	(0.080)	(0.085)	(0.093)	(0.098)	(0.107)
jpshare	-1.254***	-1.233***	-1.385***	-1.321***	-1.128***	-1.089***	-1.724***	-1.657***
	(0.186)	(0.197)	(0.158)	(0.167)	(0.145)	(0.155)	(0.236)	(0.251)
profit	-0.305***	-0.314***	-0.359***	-0.323***	-0.327***	-0.318***	-0.381***	-0.347***
	(0.076)	(0.081)	(0.058)	(0.064)	(0.059)	(0.065)	(0.077)	(0.085)
lbprod	-0.152***	-0.186***	-0.207***	-0.220***	-0.156***	-0.184***	-0.232***	-0.245***
	(0.047)	(0.050)	(0.036)	(0.039)	(0.037)	(0.039)	(0.049)	(0.052)
jpexshare	-0.601***	-0.695***	-0.059	-0.005	-0.382***	-0.404***	0.005	0.039
	(0.155)	(0.166)	(0.108)	(0.117)	(0.117)	(0.126)	(0.142)	(0.154)
par_size	-0.014	-0.001	0.039	0.056*	0.013	0.034	0.039	0.051
	(0.035)	(0.038)	(0.027)	(0.029)	(0.028)	(0.030)	(0.035)	(0.038)
par_exper	0.177**	0.162*	0.157***	0.176***	0.200***	0.196***	0.128*	0.157*
	(0.088)	(0.093)	(0.060)	(0.065)	(0.065)	(0.070)	(0.078)	(0.084)
par_smind	-0.282***	-0.325***	-0.251***	-0.248***	-0.356***	-0.371***	-0.120	-0.137
	(0.107)	(0.114)	(0.080)	(0.085)	(0.082)	(0.088)	(0.105)	(0.111)
pro_growth		2.041		0.970		0.037		6.350**
		(2.306)		(1.821)		(1.638)		(2.640)
pro_wggrowth		1.333		0.219		0.092		1.234
		(2.077)		(1.568)		(1.738)		(1.889)
pro_lbedu		0.633		-2.326		0.301		-8.096**
		(2.160)		(1.755)		(1.704)		(3.591)
pro_transport		-0.007		-0.187		-0.000		-0.967***
		(0.022)		(0.161)		(0.021)		(0.352)
ind_growth		-1.529		-0.229		-2.974**		0.181
		(1.539)		(0.731)		(1.198)		(0.810)
ind_mes		-0.129		-0.188		-0.179		-0.291
		(0.231)		(0.294)		(0.174)		(0.433)
ind_HHI		1.101		-3.715**		1.573		-7.053**
		(1.727)		(1.827)		(1.347)		(2.854)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	18378	15847	33607	29624	28852	25213	23159	20290

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Table 10. Future investment plan: Cloglog model

Explanatory variables	(1)	(2)	(3)	(4)	(5)
par_future_divest	1.458^{***}	1.492^{***}	1.491^{***}	1.483^{***}	1.483^{***}
	(0.206)	(0.212)	(0.214)	(0.232)	(0.232)
Affiliate level var.	Yes	Yes	Yes	Yes	Yes
Parent level var.	No	Yes	Yes	Yes	Yes
Region level var.	No	No	Yes	No	Yes
Industry level var.	No	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Reg. FE	Yes	Yes	Yes	Yes	Yes
Ind. FE	Yes	Yes	Yes	Yes	Yes
N	17203	17115	17113	14722	14720

Notes: The values in the brackets are standard errors. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Appendix

Table A1. Distribution of divestment by industry

Industry	1995-2007	2008-2011	2012-2016	Total
Panel A: Manufacturing				
Food product and beverages	50	48	61	159
Textile products	120	73	115	308
Pulp, paper and paper products	7	4	16	27
Chemicals	48	37	52	137
Petroleum and coal products	2	1	3	6
Ceramic, stone and clay products	15	11	18	44
Iron and steel	20	12	21	53
Non-ferrous metals	11	9	29	49
Fabricated metal products	15	13	38	66
General-purpose machinery	16	9	14	39
Production machinery	20	20	48	88
Business oriented machinery	10	16	20	46
Electrical machinery, equipment and supplies	28	39	54	121
Information and communication electronics equipment	50	52	83	185
Transportation equipment	33	29	40	102
Miscellaneous manufacturing	44	48	111	203
Panel B: Non-manufacturing				
Information and communications	20	57	93	170
Transport services	18	29	45	92
Wholesale and retail trade	91	94	217	402
Finance and insurance	3	0	0	3
Real estate	9	6	4	19
Goods rental and leasing	5	1	6	12
Accommodation and food service activities	17	8	14	39
Education	3	0	5	8
Other service activities	40	51	83	174
Agriculture, forestry, and fisheries	9	3	5	17
Mining	2	1	1	4
Construction	11	7	13	31
Electricity, gas, and water supply	3	0	3	6

Source: Authors' calculation based on BSOBA, METI.