JCER Staff Report No. 80

社団法人 日本経済研究センター
Japan Center for Economic Research

April 20, 2006

"Good M&As" Tend to Involve Foreign Companies, While Domestic Mergers Produce Few Productivity Gains

Kyoji Fukao
Senior Economist
Professor, Institute of Economic Research, Hitotsubashi University

M&As (mergers and acquisitions of companies) are motivated by and often result in gains for the acquirer. However, it remains uncertain whether the economy overall benefits from them. For example, if a combined entity gains a stronger hold in the market and raises selling prices, customers will lose out. If restructuring efforts lead to wage cuts, it will be employees that bear the burden. "Good M&As" are cases in which the tie-up generates synergy effects and increases productive efficiency. This paper examines the effectiveness of M&As in improving productivity, distinguishing between whether the buyers are foreign or domestic companies.

In general, acquisitions take place only when the buyer believes that the transaction can create value exceeding the takeover premium to be paid to the seller. Similarly, mergers are carried out in cases where the estimated corporate value of a merged entity is greater than the sum of the individual enterprises before the tie-up. Most M&As, therefore, presumably lead to an increase in the value of the enterprises concerned and raise corporate profits, which ultimately determine the value of an enterprise. As will be discussed later, this, however, does not necessarily mean that M&As will improve the performance of the Japanese economy.

Beneficiaries of M&As

The mechanism through which M&As increase corporate profits can be categorized into the following two types.

First, corporate tie-ups can give rise to economies of scale and/or scope, which, in turn, increase the profits of the combined entity through such factors as higher production efficiency (i.e. synergy effects) and, following their acquisition, the rehabilitation of financially distressed companies. M&As which bring about synergy effects and corporate rehabilitation can be considered "good M&As."

Second, mergers and acquisitions can potentially result in undesirable income transfers. For example, if a corporate tie-up leads to greater market power that enables the newly created company to raise selling prices and increase its profits, this implies that income has been transferred from customers to the merged entity. In such cases, the

disbenefits to customers exceed the benefits to the combined company, leading to a decrease in welfare in the economy as a whole.

Alternately, if an M&A results in wage cuts for employees which otherwise would have been difficult to implement, the company's profits increase as a result of income transfers from its employees. Another possibility is that equity markets do not function efficiently, so that the price paid by the buyer to the seller at the time of the acquisition may be lower than the true value of the target firm. In this event, there is an income transfer from the seller to the buyer. There may also be cases where income is transferred from other creditors, including bondholders and banks, or where the buyer benefits from tax savings. The latter case would amount to an income transfer from the government.

From a social viewpoint, M&As solely motivated by these types of income transfers are at best neutral, but may possibly be harmful and can therefore be considered as "bad M&As." Consequently, the government should try to build a system that minimizes the negative impact of M&As driven by income transfers. It can do so by, for example, adopting appropriate anti-trust and labor policies, amending and revising the company law, and reforming the tax system.

"Rescue Missions" Dominate Among Domestic M&As

The next question then is which type of M&A – "good" or "bad" – is more common among actual M&A cases. Most empirical studies on the effects of M&As compare stock prices and/or corporate profits before and after M&A transactions and use changes therein to measure the effectiveness of M&As in improving corporate performance. Using this method, however, it is difficult to determine what caused stock prices or corporate profits to rise, i.e., whether the tie-ups generated synergy effects and/or resulted in corporate rehabilitation, or whether they only involved income transfers. In order to test for the presence of synergy effects, it seems preferable to use performance data such as total factor productivity (TFP), which more directly measures the productive efficiency of the companies involved.

Based on this reasoning, the author, together with colleagues, has recently conducted a study that focuses on the productivity of M&A target firms. The analysis is comprised of two steps. The first step is to examine recent trends in acquisitions in Japan focusing on the characteristics of target firms. The second step is to test whether the performance of target firms, including their TFP, improved after they were acquired. It can be assumed that acquisitions in which target firms' TFP improved are more likely to have contributed to productivity increases in the Japanese economy as a whole.

We use the firm-level panel data underlying the *Basic Survey of Japanese Business Structure and Activities* conducted by the Ministry of Economy, Trade and Industry (METI). Our panel covers firms in the manufacturing and the commerce

sectors during the period 1994–2002. The data includes 2,467 cases of acquisitions by domestic firms (in-in M&As) and 198 cases of M&As by foreign firms (out-in M&As).

Exhibit 1: Characteristics of M&A targets (Probit analysis)

		Dependent variable (A value of 1 denotes the occurrence of corresponding M&As, while a value of 0 denotes that no corresponding M&As occur)	
		In-in M&As	Out-in M&As
		Coefficient	Coefficient
Explanatory variable	Total factor productivity (in logarithm)	0.221 **	0.709 **
	Operating profit-total asset ratio	-0.226	0.223
	Number of workers (in logarithm)	0.003	0.133 ***
	Number of years since establishment	-0.004 ***	-0.009 ***
	Total liabilities / total assets	0.241 ***	0.132
	R&D (research and development) intensity	0.314	0.543 *
	Export ratio	-0.230 *	0.791 ***
	Constant	-2.083 ***	-7.447 ***
Number of observations		86529	69245
R-squared		0.0186	0.112

Notes: 1. Data covers the manufacturing sector only.

2. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively (two-tailed test).

3. All explanatory variables except the constant are lagged by one year.

4. Includes year and industry dummies as explanatory variables.

Source: Fukao, K., Kwon, U. and Takizawa, M., 2006. *"M&As and the Corporate Performance of Target Firms:A Comparison of Out-in M&As and In-in M&As in Japan"* (unpublished paper), Institute of Economic Research, Hitotsubashi University. The empirical study was conducted as part of the RIETI project, "Industry and Firm Productivity and the Japanese Economy."

Using our panel data for the years 1994–2001, we estimated a Probit model to examine what firms are chosen as M&A targets. Exhibit 1 shows the estimation results for the manufacturing sector. One very interesting outcome is that the results are surprisingly different for in-in M&As and out-in M&As. Targets of out-in transactions generally have higher TFP, a higher operating profit-total asset ratio, a stronger export orientation, and are of greater size. Domestic firms, on the other hand, tend to select as M&A targets firms that have a lower ROA, are less export-orientated and more highly leveraged, and are of smaller size.

These results imply that foreign firms acquire Japanese firms that already at the time of acquisition show a better performance. It is a well-known fact that foreign-owned firms in Japan tend to enjoy higher TFP and be more profitable than their domestically-owned counterparts, and it seems that at least part of this is a consequence of this selection effect. The results also suggest that in-in M&As in contrast tend to display characteristics of "rescue measures." One possible explanation is that in-in M&As in Japan are mainly conducted within vertical and horizontal keiretsu networks, where financially distressed small firms are bailed out by being merged with or acquired by other member firms.

Exhibit 2: Dynamic effects of M&A

		Dependent variable (changes between one year before and two years after the acquisition)			
		(1) Change in TFP (in logarithm)	(2) Change in operating profit-total asset ratio	(3) Change in wage rate (in logarithm)	(4) Change in number of workers (in logarithm)
		Coefficient	Coefficient	Coefficient	Coefficient
Explanatory variable	Out-in M&As (dummy)	0.019 **	0.015 **	0.019	-0.049
	In-in M&As (dummy)	0.003	-0.001	0.017 *	0.003
	TFP (in logarithm)	-0.374 ***	0.043 ***	-0.742 ***	0.154 ***
	Operating profit-total asset ratio	-0.053 ***	-0.736 ***	0.538 ***	0.353 ***
	Number of workers (in logarithm)	0.010 ***	-0.001 ***	0.025 ***	-0.031 ***
	Total liabilities / total assets	-0.005 ***	0.004	-0.030 ***	-0.011 **
	R&D (research and development) intensity	0.067 ***	-0.007	0.136 ***	0.069 **
	Export ratio	0.014 ***	0.016 ***	0.014	-0.004
	Constant	-0.049 ***	0.040 ***	-0.026	0.182 ***
Number of observations		57197	56851	56850	56851
R-squared		0.2678	0.4216	0.098	0.0693

Notes: 1. Data covers the manufacturing sector only.

2. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively (two-tailed test).

3. All explanatory variables except the constant and dummies are lagged by one year.

4. Includes year and industry dummies as explanatory variables.

We next examine how the performance of out-in and in-in M&A target firms changed from one year before the acquisition to two years after the acquisition. The results of the regression analysis are summarized in Exhibit 2 and suggest that out-in M&As improve the TFP level and operating profit-total asset ratio of target firms (see columns (1) and (2) in the Exhibit). Compared with out-in M&As, in-in M&As appear to bring a smaller improvement in target firms' TFP level, and no statistically significant

improvement in the operating profit-total asset ratio can be observed. In the case of in-in M&As, there is a significant and positive effect on wage rates two years after the acquisition (see column (3)).

The above results suggest that acquisitions of Japanese firms by foreign companies are more likely to contribute to improvements in the efficiency and growth of the Japanese economy than acquisitions by domestic firms. However, whether acquisitions by foreign firms have a positive impact on the Japanese economy also depends on the price at which target firms are acquired, meaning that more detailed research is needed before we can reach a firm conclusion regarding the overall benefit of out-in M&As. In contrast, M&As involving only domestic companies do not seem to significantly improve the productivity or profitability of target firms. This implies that in-in M&As, regardless of whether they are simply bailouts of troubled group members or attempted turnarounds of struggling unrelated firms, do not lead to meaningful improvements in corporate performance. Alternatively, such improvements take longer than the three-year time span on which our measures of changes in corporate performance are based.

（Contact：+81-3-3639-2827）

Japan Center for Economic Research (JCER)
Nikkei Kayabacho Bldg. 2-6-1 Nihombashi Kayabacho, Chuo-ku, Tokyo 103-0025, Japan
Phone:81-3-3639-2810 ／ FAX:81-3-3639-2839 ／ E-mail:jcernet@jcer.or.jp