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The Productivity Effects of Shakeouts in the Non-manufacturing Sector

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It is widely known that the productivity of non-manufacturing sector, which accounts for approximately eighty percent of gross domestic products and employment of the country, is substantially lower in Japan than in the US and European countries. One may interpret this as Japan possessing the possibility to grow its productivity by playing a catch-up in the non-manufacturing sector, which is lagging behind the manufacturing sector at the global technology frontier. Accelerated growth in non-manufacturing productivity in turn, would enable the country to overcome the bottleneck of decreasing population and achieve a sustained growth.

Non-manufacturing productivity in Japan has long stagnated and factors including potential regulatory barriers to entry and bank bailout of de-facto bankrupt companies have been cited as the causes. Research on shakeouts in the non-manufacturing sector, however, has been very limited except for a few studies in commerce areas.

Preceding studies include several works using “Corporate Finance Databank,” compiled and published by the Development Bank of Japan (hereinafter referred to as “DBJ Database”), which Database has limitations in that it covers listed companies only. Listed companies account for a mere one-tenth or so of regular employment by all firms. Furthermore, new listings, delistings and bankruptcies of listed companies are quite limited in number, which makes it difficult to analyze the metabolism of a sector by looking at new entries and exits.

With these backgrounds, the author, in cooperation with Hyeog Ug Kwon, Assistant Professor, Nihon University and Young Gak Kim, Graduate School of Economics, Hitotsubashi University, developed the Japan Industrial Productivity Micro-database (“JIP Micro-database”) as part of a project at the Research Institute of Economy, Trade and Industry, by integrating the following three databases and eliminating duplicated data. The newly developed database is then used for an analysis of the effect of shakeouts in the non-manufacturing sector on its labor productivity (defined as real value added per working hour).

The three databases are 1) DBJ Database covering listed companies, 2) “Japanese Accounts and Data on Enterprises” database (JADE Database), which is developed by Belgium-based Bureau van Dijk based on data from Teikoku Databank and 3) Credit Risk Database (CRD) covering a large number of small- and mid-sized enterprises, which is compiled by the CRD Office. The JIP Micro-database covers over eighty percent of regular

employees of all firms in the non-manufacturing sector (excluding agriculture and fishery, mining, financial and insurance, government and non-profit organizations) in the period of 1997 to 2002.

Contributions to changes in non-manufacturing productivity by period and by company size (%)

	Recession (1997-1999)		Recovery (2000-2002)	
Contributions to changes in productivity by existing companies (a=b+c)	-3.86%		1.88%	
Internal effect b	0.87%		1.37%	
Redistribution effect c	-4.74%		0.51%	
Net entry effect d=e+f+g+h	1.21%		-0.40%	
Exit effect e	0.40%		-0.05%	
Entry effect f	0.77%		-0.40%	
Switch-out effect g	0.04%		0.09%	
Switch-in effect h	0.01%		-0.04%	
Changes in labor productivity a+d	-2.65%		1.48%	
	Large-sized companies	Small-and mid-sized companies	Large-sized companies	Small-and mid-sized companies
Contributions to changes in productivity by existing companies	-3.13%	-0.74%	1.11%	0.77%
Internal effect	0.72%	0.15%	0.65%	0.71%
Redistribution effect	-3.85%	-0.89%	0.45%	0.06%
Net entry effect	1.28%	-0.07%	-0.35%	-0.05%
Exit effect	-0.15%	0.54%	-0.78%	0.73%
Entry effect	1.42%	-0.65%	0.43%	-0.83%
Switch-out effect	-0.01%	0.04%	0.00%	0.08%
Switch-in effect	0.02%	-0.01%	-0.01%	-0.03%
Changes in labor productivity	-1.84%	-0.81%	0.75%	0.72%

In the exhibit, internal effect refers to the effect of productivity growth within a company on the industry productivity, while redistribution effect refers to the effect of employment growth at high productivity companies. Net entry effect measures the net impact of entry by high productivity companies and exit by low productivity companies. Switch-in (switch-out) effect represents the effect of entry into (exit from) the sector of high productivity companies from (into) different sectors. The following summarizes the key observations.

1. In both periods of 1997 to 1999 and 2000 to 2002, internal effect was the main driver of productivity growth.

2. In the period of 1997 to 1999, the entry of mostly large-sized, high productivity companies and the exit of low productivity companies consisting primarily of small- and

mid-sized enterprises contributed to the increase in productivity.

3. In the period of 1997 to 1999, redistribution effect had a large negative impact. This was due to employment reduction in large, high productivity companies in the industries including construction, electrical equipment and broadcasting leading to a significant drop in overall productivity of respective industries.

4. In both periods of 1997 to 1999 and 2000 to 2002, the telecommunication industry showed a large productivity growth, while retail and wholesale industries both made contribution to labor productivity growth in the non-manufacturing sector of a similar magnitude to that of the telecommunication industry. In the cases of the above industries, redistribution and net entry effects, as well as internal effect, positively contributed to productivity growth. In the commerce industries, many of low productivity companies reduced employment, while a number of highly productive telecommunication businesses increased headcount. Industries including entertainment, business services and real estate also showed solid gains in productivity.

5. The largest negative contributors were the construction and transportation industries. Low productivity companies entered into these industries, while large, high productivity companies significantly reduced their workforces. Industries including information service, broadcasting and advertisement experienced a decrease in labor productivity in both periods of the study.

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