

COMPLETION REPORT

The effect of technological equipment from Japan on the performance of Vietnamese manufacturing enterprises

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This research focuses on examining the effect of technological equipment from Japan on the performance of Vietnamese enterprises by using the yearly conducted data of the Vietnam Technology and Competitiveness Survey from 2010 to 2013 in combination with the data of Vietnam Enterprises Survey with Propensity Score Matching (PSM) method. Particularly, this method makes an appropriate comparison in firm performance of two enterprises group. One group applied imported technology from Japan (herein as *treatment group*). The other group only applied domestic technological equipment but their properties including size, type and sector are relatively similar to those of treatment group (herein as *counterfactual group*).

Table 1. Impact evaluation of Japanese technological equipment in comparison to Vietnamese technological equipment on Vietnamese corporate performance by PSM method

	Performance₁ SATT	Performance₂ SATT
In respect to time of using technology	Coefficient (Standard Error)	Coefficient (Standard Error)
From 1 to 5 years (from 2006 to 2009)	0.266* (0.192)	0.355** (0.162)
From 5 to 10 years (from 2000 to 2006)	0.217 (0.2)	0.134 (0.2)
More than 10 years (before 2000)	0.433 (0.74)	0.002 (0.7)
In respect to age of technology	Coefficient (Standard Error)	Coefficient (Standard Error)
From 1 to 5 years (from 2006 to 2009)	0.358** (0.17)	0.414** (0.183)
From 5 to 10 years (from 2000 to 2006)	0.198 (0.183)	0.197 (0.186)
More than 10 years (before 2000)	0.77 (0.5)	0.69 (0.46)

Note: Calculated from Vietnamese enterprises data in the year of 2010

Performance 1: Logarithm of total profit from product and service supply

Performance 2: Logarithm of net sales of product and service supply

Time of using technology: the time length from the year of starting to utilize the technology to the surveyed year (2010)

Age of technology: the time length from the production year of the technology to the surveyed year (2010)

Coefficient: expresses the percentage difference in performance between treatment group and counterfactual group

: significant level at 10%, **: significant level at 5%, *: significant level at 1%*

The Table 1 presents the difference in performance between enterprises which utilize technological equipment of Japan and similar enterprises which only utilize Vietnamese technological equipment. The herein technological equipment is the most important and most frequently-used equipment that mainly determines the corporate performance. The origin of technology is determined by the main producer of the technological equipment. The industry of selected enterprises herein is manufacturing sector and the number of these enterprises is 4,382 enterprises. In regarding to total profit from product and service supply, it seems that the result has only statistical significance when the time of using technology or the age of technology is from 1 to 5 years. In this case, in comparison to the enterprises which only utilize Vietnamese technological equipment, the similar enterprises which utilize Japanese technological equipment shall have higher total profit from product and service supply by 26.6 percentages at 10% significant level when the time of using technology is from 1 to 5 years and by 35.8 percentages at 5% significant level when the age of technology is from 1 to 5 years. In regarding to net sales of product and service supply, it also appears that the result has only statistical significance when the time of using technology or the age of technology is from 1 to 5 years. In this case, in comparison to the enterprises which only utilize Vietnamese technological equipment, at 5 % significant level, the similar enterprises which utilize Japanese technological equipment shall have higher net sales of product and service supply by 35.5 percentages when the time using of technology is from 1 to 5 years and by 41.4 percentages when the age of technology is from 1 to 5 years.

In sum, the Japanese technological equipment seems to have better impact on corporate performance in comparison to Vietnamese technological equipment in the case that the time of using technology or the age of technology is from 1 to 5 years. The impact on sales appears to be higher than on total profit of product and services supply.

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