

Abstracts

We estimate and compare the production structures of the US, Japanese, and Korean total manufacturing sectors for 1974-1990 period. We employ a translog variable cost function that includes such inputs as labor, materials, physical and R&D capital with the physical and R&D capital treated as quasi-fixed subject to adjustment costs. The paper provides estimates for markups, returns to scale, rates of return on physical and R&D capital, and technical change. The paper also identifies the sources of the growth of output, labor productivity, and total factor productivity. The results show that resource accumulation, not technical change, is the key factor in rapid output growth, and that the R&D capital and technical change have been major contributors of the TFP growth in the US and Japanese manufacturing but not in the Korean manufacturing sector.

Key words: Factor demand, Productivity, R&D expenditures, Returns to scale

JEL Classification Numbers: H52; L6; O32; O33; O38

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