Micro-Macro Linkages Between IT Investment and Macroeconomic Impact:

What Makes the Japanese Case Different from the U.S. Case?

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Investment in information technology (IT) is expected to enhance the productivity and/or profitability of the individual firm, and to deliver productivity-related benefits that flow through the firm, both at sectoral and macroeconomic levels. This flow-through – which we term the "micro-macro linkage" – depends on various factors, and if one (or more) should fail, IT investment may fail to yield tangible macroeconomic benefits.

Such failure is widely thought to have occurred in the U.S. during the 1980s, creating the so-called "IT productivity paradox" referenced in Solow's well-known line, "You can see the Computer Age everywhere but in the productivity statistics." In the years since, numerous economists have sought to identify possible causes for this productivity shortfall. For the U.S., the paradox seems happily to have disappeared during the early 1990s. In Japan, however, massive IT investment has yet to deliver macroeconomic growth, suggesting that the productivity paradox remains at work.

In this article, the authors draw on the U.S. experience to identify several key factors that may affect the micro-macro linkage, then examine whether these factors may be applicable to Japan today. Our key findings, as derived from Japanese corporate data, are as follows:

1. IT investment contributes to firm productivity in Japan;
2. Certain forms of management initiative (e.g., creating “flatter” (or less hierarchical) organizations) have not delivered expected benefits in Japan; and
3. IT investment does not make any significant positive contribution to profitability in Japanese firms.

The authors suggest that Japanese IT paradox may be at least partly attributable to failures in the management initiatives that typically accompany IT introduction.