

# Long-term Trends in the Polarization of the Japanese Labor Market: The Increase of Non-routine Task Input and Its Valuation in the Labor Market

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## Abstract

In this paper, quantifying the various skills required in each occupation, we examine the long-term trend in labor market polarization in Japan in terms of tasks. Specifically, following Autor, Levy and Murnane (2003), we divide tasks according to whether they involve routine or nonroutine work and whether they involve intellectual or physical work into the five categories of nonroutine analytic, nonroutine interactive, routine cognitive, routine manual, and nonroutine manual tasks and statistically examine the trends in inputs of these tasks in the period from 1960 to 2005. We find that the input share of nonroutine tasks (interactive, manual, and analytic) has increased almost consistently, while the input share of routine tasks (cognitive and manual) has decreased almost consistently. With regard to nonroutine tasks, an increase in the input share of both high-skill and low-skill tasks can be observed. Further, we estimate the valuation of the five tasks in the labor market from 1970 to 2000 by regressing the average wage for each occupation on the five tasks. We find the average wage in an occupation is positively correlated with routine cognitive task input and negatively correlated with routine manual task input. Considering the labor market valuation of tasks in relation to trends input shares of tasks over time, we conjecture, with regard to trends in the supply of and demand for tasks, that for nonroutine analytic and routine manual task input, the increasing change in demand seems to dominate, while for nonroutine interactive and nonroutine manual task input as well as for routine cognitive task input, the decreasing changes in supply appears to dominate.

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