

“Technology, Skill Prices, and Wage Inequality”

Abstract

Skill-biased technical change (SBTC) is a leading explanation for rising wage inequality between education groups, yet it has struggled to account for changes in inequality within them. We argue that this limitation arises from treating skill as a single dimension. While the college premium depends on differences in average skill bundles across education groups, within-group wage dispersion depends on the distribution of those skills and their market prices. Using O*NET data and hierarchical clustering, we construct four granular skill dimensions: socio-cognitive, management, STEM, and dexterity. We then use these skill measures to examine how the expansion of work from home (WFH) and the diffusion of generative AI are associated with changes in the returns to individual skills. Although both technologies exhibit positive education-based skill bias, difference-in-differences estimates reveal distinct patterns of skill repricing. WFH exposure is associated with higher returns to management skills and lower returns to STEM skills, whereas generative AI exposure is associated primarily with higher returns to socio-cognitive skills. Over the corresponding periods, residual wage dispersion among college-educated workers declines from 2019 to 2022 and increases from 2022 to 2025. A counterfactual decomposition shows that changes in skill prices account for approximately 41% of the earlier decline and 23% of the later increase in residual wage variance.