Skill-Biased Technological Change Within and Across Firms

Seth G. Benzell, Guillermo Lagarday, and Daniel Rock

Abstract

A large literature has documented occupational shifts in the US away from routine intensive tasks. Theories of skill-biased technological change differ in whether they predict changes in occupational mix within firms, or merely across different firms or industries. Using LinkedIn resume records, BLS OES data, and Compustat employee counts, we estimate occupational employment for publicly traded US firms from 2000 through 2016. We find that faster employment growth among firms that disproportionately employ non-routine workers is the most important cause of SBTC, followed by within firm occupational mix rebalancing. The entry of new firms also plays a role, although firm exit is slightly routine-worker biased. R&D leads firms to have a larger share of routine workers. These results are most consistent with a theory of routine task demand reduction caused by the diffusion of infra-marginally implemented new technologies. We also introduce a new measure of business labor dynamism, capturing the frequency with which firms change their occupational mix. Consistent with trends in productivity and other measures of business and labor market dynamism, this measure has decreased steadily since 2000.