

Techies, Trade, and Skill-Biased Productivity*

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Abstract

We study the impact of firm level choices of ICT, R&D, exporting and importing on the evolution of productivity and its bias towards skilled occupations. We use a novel measure of the propensity of a firm to engage in technology investment and adoption: its employment of “techies”, who are workers with STEM (science, technology, engineering and math) skills and experience. We develop a methodology for estimating firm level productivity that allows us to measure both Hicks-neutral and skill-augmenting technology differences, and apply this to administrative data on French firms in the entire private sector from 2009 to 2013. Our results show that techies and importing of intermediate inputs raise skill-biased productivity; imports also raise Hicks-neutral productivity. The techie and trade effects are large, and can account for much of the aggregate increase in skilled employment from 2009 to 2013.

Keywords: productivity, skill bias, skill augmenting, labor demand, outsourcing, globalization, R&D, ICT, techies, STEM skills.

JEL classifications: D2, D24, F1, F16, F6, F66, J2, J23, J24, O52.

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