

# Diffusion of E-Commerce and Retail Job Apocalypse: Evidence from Credit Card Data on Online Spending

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## Abstract

A rapid growth of e-commerce is widely blamed for job losses in traditional offline retail. We construct a unique measure of online spending share based on 30 billion transactions of credit cards. Using geographic variation in online spending shares, we examine the causal effect of e-commerce on retail employment at the county level. We find that the rise in online spending share from 2011 to 2015 decreases the county-level retail employment by about 160 workers, which represents about 2.5% reduction in average retail employment. The negative employment effect is not limited to books and electronics but is widespread across products such as foods and sporting goods. Furthermore, a sizable employment spillover to other sectors (e.g., restaurants and transportation & warehousing) is not found. Our findings suggest that the diffusion of e-commerce has overall negative impacts on local labor markets.

**JEL Classification:** J21, L81

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