# Financial Regulation and Automation Adoption: Evidence from Stock Trading Firms*

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**Abstract**

How did trading automation impact broker-dealer firms and workers? While electronic trading platforms have been available in stock markets for decades, widespread adoption of automated trading occurred only after the 2007 major market redesign promoted by the US Securities and Exchange Commission. With the intent of lowering access costs to stock markets, the policy fostered speed-driven competition between exchanges and trading firms. By combining several sources of regulatory records, I construct a rich, linked panel of trading firms and workers for the last 40 years with detailed employment records, licenses, and financial information. I show that trading automation increased aggregate profits in the investment industry and induced greater revenue concentration in large broker-dealers. Consistent with higher technology setup requirements and increased local competition, the entry of new broker-dealers decreases. Interestingly, survival rates of existing firms display a U-shaped pattern: large, multi-billion dollar investment banks and brokers, as well as the smallest trading firms, which offer specialized, boutique services with high IT capital, are more likely to stay in business. Trading automation generated significant employment displacement effects, severely decreasing the probability of stock traders remaining employed, even compared to investment advisors, bond traders, and other financial workers in less automated markets. Through a series of tests, I show that these results are unlikely to be driven by the Great Recession or the rise in online brokerage services.

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