Rise of the Machines: Algorithmic Trading in the Foreign Exchange Market

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We study the impact of algorithmic trading (AT) in the foreign exchange market using a high-frequency dataset representing a majority of global interdealer trading in three major currency pairs, euro-dollar, dollar-yen, and euro-yen, from 2003 through 2007. In line with the theoretical literature, we find that AT contributes to a more efficient price discovery process via the elimination of triangular arbitrage opportunities and that AT has an ambiguous impact on liquidity, depending on whether AT is primarily used for market-making or market-taking activity. We also show that algorithmic trades tend to be correlated, indicating that computer-driven strategies are not as diverse as those used by human traders, although we do not find any significant evidence that this correlation causes excess volatility or reduced liquidity.