Sectoral Impacts of Algorithmic Currency Trading: An Empirical Investigation into Market Microstructure Dynamics

Ashley Roberts
PhD
Harvard University
Cambridge, MA 02138, United States

Amelia Young
Professor
London School of Economics
Houghton St, London WC2A 2AE, United Kingdom

Skyler Rodriguez
Associate Professor
University of Melbourne
Parkville, VIC 3010, Australia

Rowan Perez
Dr. Sc
University of Toronto
27 King's College Cir, Toronto, ON M5S, Canada

Abstract. This study delves into the microstructural dynamics of currency markets, focusing on algorithmic trading's multifaceted impact. By employing advanced econometric models, we analyze data spanning five years to discern patterns in liquidity, volatility, and price discovery. Our findings indicate significant shifts in market behavior attributable to algorithmic interventions, offering insights into regulatory frameworks needed to stabilize emerging financial ecosystems. Implications for policy-makers and financial institutions are discussed, emphasizing the need for adaptive governance mechanisms.

Keywords: algorithmic trading, currency markets, market microstructure, liquidity, financial regulation, econometric analysis, price discovery, volatility, financial ecosystems

Introduction

The advent of algorithmic trading in currency markets has precipitated profound shifts in market microstructure dynamics, challenging traditional paradigms of finance and necessitating a re-evaluation of existing regulatory frameworks. As governments and financial institutions grapple with the implications of this technological evolution, it becomes imperative to assess the nuanced impacts that algorithmic trading introduces to currency markets globally. This paper investigates these dynamics by examining the sectoral repercussions of algorithmic trading on currency markets over the next two to three years, emphasizing its effects on liquidity, volatility, and price discovery metrics.\n\nRecent trends indicate that algorithmic trading constitutes a growing share of transactions within these markets, altering competitive landscapes and introducing new risks related to market stability and equity. Our research employs cutting-edge econometric methodologies to parse through transaction data spanning five years, thus providing a temporal analysis of trading patterns and their resultant impact on financial ecosystems. The insights garnered from this empirical study are critical for shaping adaptive regulatory strategies aimed at mitigating systemic risks while enhancing market efficiency.\n\nFollowing this introduction, Section 2 outlines the relevant literature and theoretical frameworks guiding our analysis. Section 3 describes the data sources and econometric techniques employed, while Section 4 presents our key findings and their implications. The paper concludes with a discussion in Section 5, focusing on policy recommendations and areas for future research.\n\n

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