

Accepted Manuscript

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Soheil Mahmoodzadeh, Ramazan Gençay

PII: S0378-4266(17)30203-0
DOI: [10.1016/j.jbankfin.2017.08.015](https://doi.org/10.1016/j.jbankfin.2017.08.015)
Reference: JBF 5198

To appear in: *Journal of Banking and Finance*

Received date: 1 July 2015
Revised date: 5 July 2017
Accepted date: 20 August 2017

Please cite this article as: Soheil Mahmoodzadeh, Ramazan Gençay, Human vs. High-Frequency Traders, Penny Jumping, and Tick Size, *Journal of Banking and Finance* (2017), doi: [10.1016/j.jbankfin.2017.08.015](https://doi.org/10.1016/j.jbankfin.2017.08.015)

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Human vs. High-Frequency Traders, Penny Jumping, and Tick Size[☆]

Soheil Mahmoodzadeh

Faculty of Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DD, United Kingdom

Ramazan Gençay

Department of Economics, Simon Fraser University, Burnaby, BC, V5A 1S6, Canada

Abstract

This paper examines changes in market quality resulting from the smaller tick size of the interbank foreign exchange market. Coupled with the lower tick size, the special composition of traders and their order placement strategies created a suitable environment for high-frequency traders (HFT's) to implement sub-penny jumping strategy to front-run human traders. We show that the spread declined following the introduction of decimal pip pricing. However, benefits of spread reduction were mostly absorbed by the HFT's. Market depths were also significantly reduced with the occupation of the top of the order book by HFT's. This new environment changed the market maker-market taker composition between different traders and altered price impacts of the order flows.

Keywords: Interbank Foreign Exchange Market, Tick Size, Market Quality

JEL: F31, G14, G15

1. Introduction

In this paper, we study changes in Electronic Broking Services (EBS) market quality following the adoption of the decimal pip tick size. EBS is the leading interbank foreign exchange (FX) market, and it is mainly used to trade major currency pairs (EUR/USD, USD/JPY, EUR/JPY, USD/CHF, and EUR/CHF) in units of millions. We show how the specific structure of the EBS market has helped HFT's sub-penny jump human traders to

[☆]The authors would like to thank editor Geert Bekaert and the three anonymous referees for their valuable input. We are deeply grateful to Alain Chaboud and Angelo Rinaldo, for their generosity and extensive input. This paper has been presented at the University of Cambridge, London School of Economics, University of College London, Simon Fraser University, the University of Victoria and 11th World Congress of the Econometric Society. We are grateful for the comments and suggestions made by the participants. All remaining errors are our own. Ramazan Gençay gratefully acknowledges financial support received from the Natural Sciences and Engineering Research Council of Canada and from the Social Sciences and Humanities Research Council of Canada.

Email addresses: sm2179@cam.ac.uk (Soheil Mahmoodzadeh), rgencay@sfu.ca (Ramazan Gençay)

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