



WP/15/222

IMF Working Paper

Fragilities in the U.S. Treasury Market: Lessons from the “Flash Rally” of October 15, 2014

by Antoine Bouveret, Peter Breuer,
Yingyuan Chen, David Jones, and Tsuyoshi Sasaki

***IMF Working Papers* describe research in progress by the author(s) and are published to elicit comments and to encourage debate.** The views expressed in IMF Working Papers are those of the author(s) and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

Monetary and Capital Markets Department

Fragilities in the U.S. Treasury Market: Lessons from the “Flash Rally” of October 15, 2014¹

**Prepared by Antoine Bouveret, Peter Breuer, Yingyuan Chen,
David Jones and Tsuyoshi Sasaki**

Authorized for distribution by Daniel Hardy

October 2015

IMF Working Papers describe research in progress by the author(s) and are published to elicit comments and to encourage debate. The views expressed in IMF Working Papers are those of the author(s) and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

Abstract

Changes in the structure of the U.S. Treasury market over recent years may have increased risks to financial stability. Traditional market makers have changed their liquidity provision by increasingly switching from risk warehousing to risk distribution, and a new breed of market maker has emerged with the rise of electronic trading. The “flash rally” of October 15, 2014 provides a clear example of how those risks can materialize. Based on an in-depth analysis of the event—complementing the authorities’ work—we suggest i) providing incentives for liquidity provision, ii) improving market safeguards, and iii) enhancing the regulation of the Treasury market.

JEL Classification Numbers: E44, G14, G31, G38

Keywords: Financial Stability, Treasury Market, High-Frequency Trading, Liquidity

Author’s E-Mail Address: abouveret@imf.org; pbreuer@imf.org; ychen@imf.org;
djones2@imf.org, tsasaki@imf.org

¹ We are grateful to Seth Carpenter, Alain Chaboud, James Clark, Peter Dattels, Daniel Hardy, Eric Hunsader, Andrei Kirilenko, Simon Gray, Ernst Schaumburg, Miguel Savastano, and participants of an IMF seminar for their comments without implicating them. We also thank staff from the Chicago Mercantile Exchange, the U.S. Commodities Futures Trading Commission, the U.S. Federal Reserve Board, the Federal Reserve Banks in New York and Chicago, the U.S. Securities and Exchange Commission and the U.S. Treasury for productive discussions.

CONTENTS	PAGE
Abstract	2
I. Changes in the structure of the U.S. Treasury market and their impact on liquidity	6
A. Electronic trading in the Treasury market and the rise of new market makers	6
B. Changes in traditional market makers' business models	9
C. Implications for market liquidity.....	10
II. A case study: the October 15, 2014 "flash rally"	12
A. The events of October 15, 2014: a historical perspective	12
B. The events of October 15, 2014: a tick-by-tick analysis.....	14
C. Market safeguards	16
III. What factors contributed to the flash rally?	17
A. Repositioning by hedge funds.....	17
B. Withdrawal of liquidity providers	18
C. High frequency trading.....	19
D. Authorities' analysis of the event.....	22
IV. Measures to strengthen the U.S. Treasury market.....	23
A. First line of defense: provide incentives for liquidity provision	23
B. Second line of defense: strengthen market safeguards.....	25
C. Improve the regulatory framework of the Treasury market	26
V. Conclusion	27
Appendix 1: Market safeguards on the Chicago Mercantile Exchange.....	29
Appendix 2: Estimation of reactive trades.....	33
Appendix 3: The May 6, 2010 flash crash.....	40
References.....	41

Figures

Figure 1. Primary Dealers in the Treasury Market	10
Figure 2. ECB Survey	11
Figure 3. The October 15, 2014 Flash Rally in the Treasury Market	12
Figure 4. Liquidity Around Retail Sales Releases, U.S. 10-Year Treasury Futures.....	13
Figure 5. Liquidity Before and After October 15, 2014, U.S. 10-Year Treasury Futures.....	13
Figure 6. The Event of October 15, 2014 in the Treasury Market: A Tick-by-Tick Analysis	15
Figure 7. Build-up and Turnaround	16
Figure 8. Price and Trading Volume of U.S. 10-Year Treasury Futures.....	16
Figure 9. One Second Price Changes of U.S. 10-Year Treasury Futures	16
Figure 10. Hedge Fund Repositioning	18
Figure 11. Liquidity in 10-Year Treasury Futures.....	19
Figure 12. Order Book Updates per Minute, U.S. 10-Year Treasury Futures	20
Figure 13. Share of Trades For 1 Contract, U.S. 10-Year Treasury Futures	20
Figure 14. Estimated Volume Traded in RTs and non-RTs	21
Figure 15. Positive Feedback Loop	22