

# Executive Summary

## Problem

In recent years, the financial market phenomenon known as ‘*flash event*’ has been at the center of intense media coverage and public debate. For example, Colchester and MacDonald (2016) identified a number of flash events since 2010. Those events raised questions about the stability and well-functioning of financial markets. Moreover, many investors and market commentators see automated trading as a reason for the fragility of the markets (Kirilenko et al., 2017). In fact, electronic and high-frequency trading (HFT) has increased strongly in recent years (Chaboud et al., 2014). This may have led to the widespread assumption that HFT induces an accumulation of flash events. Due to the increasing political pressure (e.g., Kaufman Jr and Levin, 2011), many regulators started to address the issue (US Commodity Futures Trading Commission (CFTC) and US Securities and Exchange Commission (SEC), 2010). However, in academic research the exact definition of a flash event is controversial. Most of the research focuses on the study of specific events, such as the equity flash crash of May 6, 2010 (Kirilenko et al., 2017). This lack of a systematic approach to detect flash events also leads regulators to find it difficult to deal with the issue. Therefore, statistical tools are needed in order to observe and identify potential flash events in a systematic manner.

## Method and Data

A recent paper by Christensen et al. (2016) suggests identifying flash events using the *Drift Burst Hypothesis*, which allows identifying flash events based on high-frequency data and delivers insights into the price dynamics that accompany such events. The present thesis identifies flash events in the foreign exchange spot market based on this hypothesis using high-frequency data. The data consists of market data (i.e., quotes and trades) for the foreign exchange spot market from Electronic Broking Services (EBS) and covers the period from January 1, 2001, until December 31, 2017. It comprises the currency pairs EURUSD, USDJPY and EURJPY, which are some of the most liquid currency pairs in the world and for which EBS is considered the primary site of price discovery (Chaboud et al., 2014). To the best of my knowledge, there exists no systematic analysis of flash events in the foreign exchange spot market for such a long period.