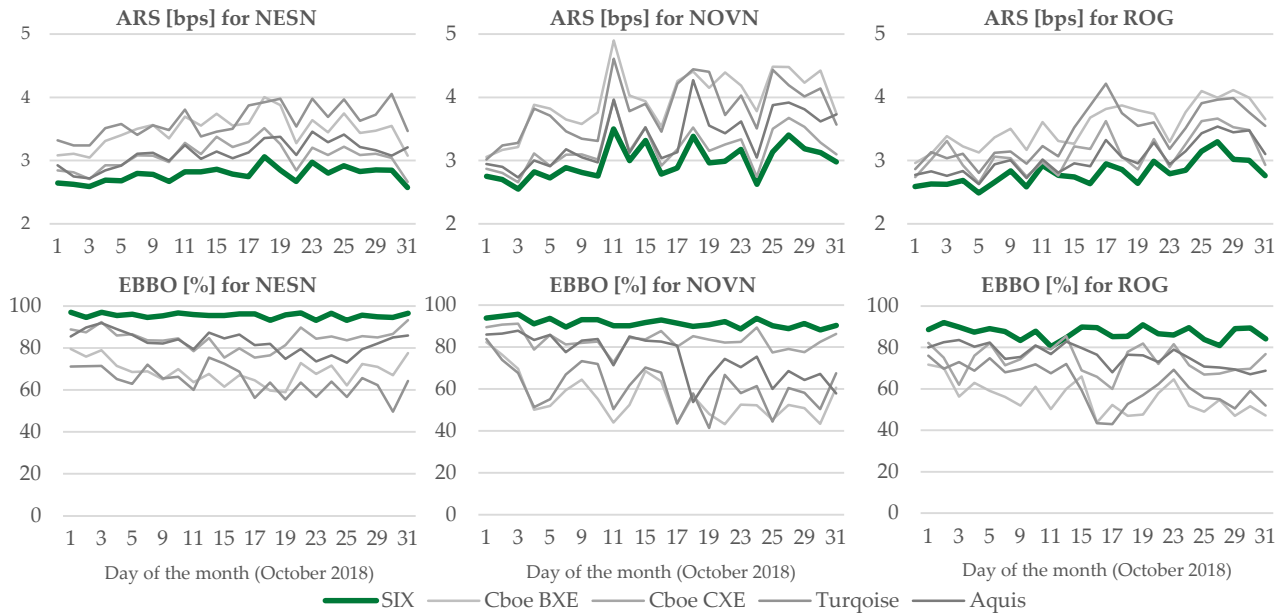


# Order Book Quality for Swiss Blue Chips in Europe [October 2018]

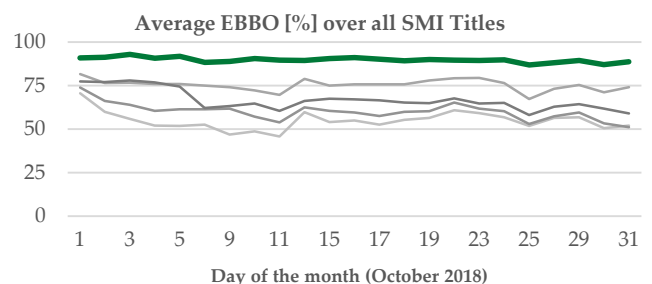
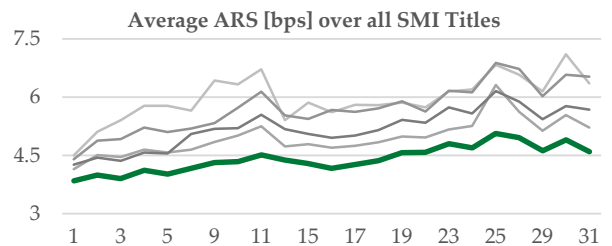
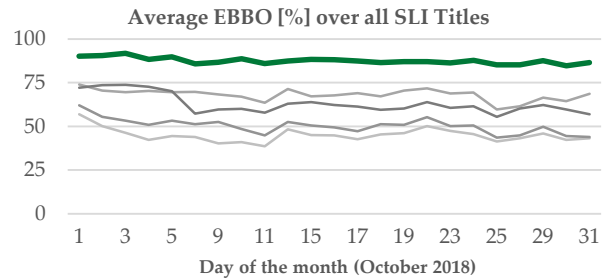
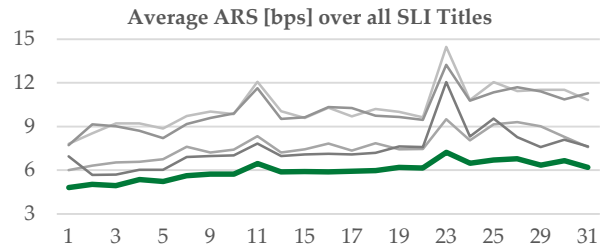


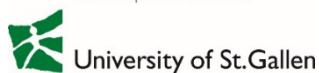
We have analyzed the *Quality* of the order books of SIX<sup>1</sup> and competing European Multilateral Trading Facilities (MTFs) for the 30 securities defining the Swiss Leader Index (SLI) using granular tick data of BMLL<sup>2</sup>.

Considering lit order books in continuous trading mode the *quality* of an order book is assessed by means of three measures, which represent a *Cost-Liquidity Metric*:

1. **Average Relative Spread (ARS):** The spread is a particularly important cost measure for market participants. The ARS (denominated in bps) captures the *time-weighted average of the relative spread* of a single security over each trading day.
2. **European Best Bid and Offer (EBBO) Presence:** We compare the best prices of each MTF (including SIX) with each other. The duration is recorded over which a given venue offers simultaneously *both best bid and ask prices* across all other European venues. The duration of best prices taken relative to the total continuous trading time, defines the *EBBO duration*, denominated in %.
3. **Assessing Volatility and Liquidity:** The smaller the liquidity in a MTF the larger the volatility of its bid-offer spreads. Comparing SIX with its competing MTFs all graphs reveal larger volatility for the dynamics of ARS and EBBO in the competing MTFs, which is caused by a smaller liquidity in their order books. SIX offers well above 90% within continuous time trading the highest liquidity.

The graphs show that SIX Swiss Exchange significantly outperforms the competing European MTFs over all SLI securities. This significant outperformance comprises the levels of ARS and EBBO as well as the volatility of ARS and EBBO.





The Institute for Operations Research and Computational Finance at the University of St. Gallen (ior/cf-HSG) focusses on the application of quantitative methods to various business- and finance-related problems, particularly the use of stochastic optimizations and simulations of market price dynamics. Thereby, ior/cf-HSG has especially accumulated competence in the fields of computational finance and security analysis.



The data source for this analysis is BMLL Technologies. BMLL offers access to Level 3 LOB data, on-demand, and combines this with unlimited compute power and Machine Learning based analytical libraries for maximum value extraction on the data in question.



SIX operates and develops infrastructure services in the Securities & Exchanges, Payments and Financial Information business units with the aim of raising efficiency, quality and innovative capacity across the entire value chain of the Swiss financial center. In the Securities & Exchanges business unit SIX offers its customers in Switzerland and around the world a comprehensive range of exchange services – listing, trading and post-trade solutions – from a single source.

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<sup>1</sup> The documented results stem from research activities in collaboration with SIX Swiss Exchange.

<sup>2</sup> The research cooperation has been powered by BMLL Technologies ([www.bmlitech.com](http://www.bmlitech.com).)