

Dear Editor,

Please find enclosed a revised version of our manuscript “Foreign exchange markets: price response and spread impact” by Juan C. Henao-Londono and Thomas Guhr, which we ask you to consider for publication in the journal *Physica A: Statistical Mechanics and its Applications*. The manuscript discusses the analysis of price response functions in foreign exchange markets, focusing in the differences of the responses across several years. We analyzed price response functions in trade and physical time scale and the impact of the spread in the strength of the response signal. The comments of reviewers in a previous submission were highly insightful and enabled us to greatly improve the quality of our manuscript. Furthermore, we realized that our work is a better fit to be published in the journal *Physica A*.

Our manuscript starts with an introduction that concisely and clearly explains the motivations of our work, the background and our expertise on similar works on price response functions. Follow an overview of the foreign exchange market and the key concepts we use. We then present the data set used along the manuscript with their corresponding characteristics. We define the time scales and the different price response functions, and illustrate the different results obtained. Finally we group exchange pairs according to their pip spread values and check their responses functions and the similarities in each group.

To the best of our knowledge, no large-scale data analysis of response functions for foreign exchange market has been carried out. Response functions are important observables as they give information on non-Markovian behavior. It is the purpose of the present study to close this gap. Based on a series of detailed empirical results obtained on trade by trade data, we show that the price response functions in the foreign exchange markets behave qualitatively similar as the ones in correlated stocks markets. We consider different time scales, years and currency pairs to compute the price response functions. Finally, we shed light on the spread impact in the response functions for foreign exchange pairs. We use a pip spread definition to group different foreign exchange pairs and show that large pip spreads have stronger impact on the response. We also spot that even for different groups of exchange pairs, the market has a general influence that can be seen in the shape of the average response functions.

For its relevance in the analysis of the market micro-structure and the study of foreign exchange markets, and for its neat presentation, we hope that you will like our manuscript and find it suitable for publication in the journal *Physica A*.

Yours Sincerely,

Juan Camilo Henao Londono, on behalf of all authors