Dear Professor H.M. Amman,

Please find enclosed our manuscript entitled “Fast and adaptive cointegration based model for forecasting high frequency financial time series”, by Arce et al, which we would like to submit for publication in the Computational Economics journal. This paper was recently presented in the Fourth International Symposium in Computational Economics and Finance (ISCEF 2016) in Paris, with paper ID: 102.

In finance, VECM is widely used to model a set of cointegrated time series introducing the long-run relationship among them as an error correction term. However, to obtain VECM parameters is computationally expensive and this is a main limitation for its use with high frequency data. We propose an adaptive version of VECM to be used in finance with high frequency stream data.

We observed that the number of cointegration relationships varies with the length of historical data used. Also, parameters that increased these relationships in time led to better forecasting performance. Our proposal, called Adaptive VECM (AVECM) is to make a parameters grid search that maximises the number of cointegration relationships in the near past. To ensure the search can be executed fast enough, we used a distributed environment. We found that AVECM significantly improved execution times with respect to its serial version and on average performed better than ARIMA and random walk using four 10-seconds frequency time series of the Foreign Exchange market.

We believe that Computational Economics is the most suitable platform for the dissemination of our findings.

With best regards,

Paola Arce