

## **Economics MS 1731**

### **Referee Report on “A Historical Analysis of the US Stock Price Index using Empirical Mode Decomposition over 1791-2015”**

The paper decomposes the values of S&P 500 index into high and low frequency components using frequency based Empirical Mode Decomposition technique and finds that the low frequency component is relatively more important.

I am not convinced that the paper makes any contribution to what we already know. It is just an application of a relatively new technique to a long series of stock prices.

Here are three points (among many one could make) for an argument for rejection of the paper:

- The authors argue in the Introduction that the decomposition is important as there is heterogeneity among traders. Monthly average stock prices can hardly, if at all, captures such heterogeneity in stock trading.
- At no point, the authors discuss the benefits of frequency decomposition over time series decomposition and we do not know what the advantages of this particular technique are when analyzing stock prices.
- When discussing the results, the authors claim that the stock prices are determined by the long-term growth of the US [economy]. There is no justification of such a claim when the analysis is only univariate.