Advisor's report on Bachelor's Thesis by Stanislav Petrov titled "The Impact of Bank of Russia Monetary Policy Communication on the Stock Market"

This thesis studies how communications by the Bank of Russia in the form of press releases and press conferences by the Governor on the day of monetary policy announcement affect asset prices and inflation expectations. The topic is of great importance in terms of the conduct of monetary policy and has remained an active area of research for past several years. The Author constructs two separate tone sentiment indices, one for press releases and one for press conferences, by methods of Natural Language Processing (NLP) and Machine Learning (ML). Afterwards these two indices serve as regressors of interest in the event study analysis with the within-day response of different asset prices as dependent variable. I am much impressed by the amount of work done and by the deep proficiency of the Author in NLP and ML. A few comments are in order.

1. Surprisingly, the response of government bonds of different maturities to tone sentiment is found to be statistically insignificant as opposite to the stock market index of the Moscow Exchange. It is remarkable though that responses of corporate bonds are, in contrast, statistically significant. Qualitatively, the responses of the three groups of outcome variables look similar: a positive response to one sentiment index and a negative response to the other one. Putting aside the insignificance of government bond responses for a moment, what exacly might this co-movement pattern apply? What specifically the tone sentiment indices capture? Growing or easing inflation pressures or the prospects of economic growth in the short to medium term?

2. The study seems to employ a general-purpose data set to construct the tone sentiment indices. Are this particular or alike data sets relevant for the purposes of this study? Being unfamiliar with specifics of those, I can guess that words like "happy," "sad," "bright,", and "gloomy" contribute to the positive or negative sentiment score, but are they necessarity related to forward guidance by the central bank? I would guess that what matters for investors would be such terms as "inflation pressures," "inflation risks," etc. An example of key words and expressions that are involved in the construction of sentiment indices (page 9) would be helpful.

3. Another surprising finding is low and likely statistically insignificant correlation (the coefficient of correlation equals 0.08) of the two tone sentiment indices. Is it conceivable that this almost-zero correlation is due to the fact that press conferences are more forward-looking compared with press releases? The opposite sign of responses to the two indices might be consistent with this conjecture.

4. As an advisor, I might have neglected to suggest the Author to do some preliminary data cleaning by winsorization. Given that there were a few rather turbulent episodes during the sample period, I would not exclude the possibility that some not-so-obvious patterns in the results such as spikes of responses at the five-day horizons are driven by outliers.

5. Another potentilly, helpful exercise would be to experiment with the narrowing of the event window as is typical in many studies of asset price responses to monetary policy announcements, Swanson (JME 2021) being a recent example, at least for those outcome variables that are readily available at intraday frequencies.

To conclude, I believe that the quality of this thesis is at par with that of other Bachelor's and even Master's theses that I supervised at NES in the past and that received an excellent mark.

Suggested grade: 10.

Advisor:

Konstantin Styrin, Ph.D.
Economic Advisor
Research and Forecasting Department
Bank of Russia

Date: 4 June 2022