

VTB Capital Re-Search

To the moon: Scoring social stock sentiment

- Russian retail stock market investors have become a mature and material investor base whose investment patterns and preferences have considerable influence on market outcomes.
- We attempt to gain insight into the sentiment of the collective retail investor base at a granular level by studying unstructured text data from Russia's most active stock market-focused social media, and applying modern Machine Learning natural language processing tools.
- Our findings show that for a subset of publicly traded stocks, data suggest a potential causal link between social media sentiment and price changes, and so insights into social sentiment may help inform professional investors' asset allocation decisions.

These results are a work in progress and we would appreciate any and all feedback on this; please [get in touch](#).

Below, we provide a brief Q&A summary of the exercise and its results.

Russian investors' version of Reddit's 

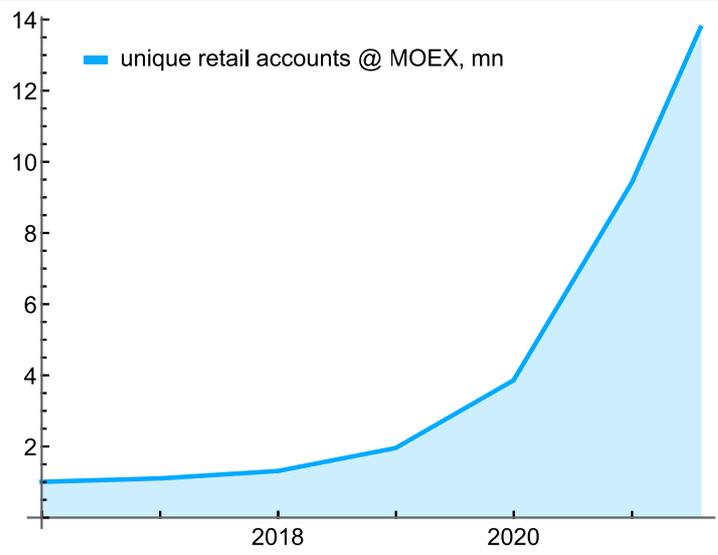


Source: VTB Capital Research.

Q: How large is the retail investor base in Russia?

A: It is large and booming: The CBR reports total retail holdings at RUB 6.0tn as of 1Q21 (up from RUB 2.6tn in 1Q19); MOEX reports some 14 mn unique retail clients, while MOEX officials report that more than 15% of the recent IPO books have been filled with retail orders.

MOEX retail client count, mn



Source: CBR, VTB Capital Research.

Q: You want capture retail sentiment – but in what sense?

A: Yes, we attempt to capture social sentiment toward individual stocks.

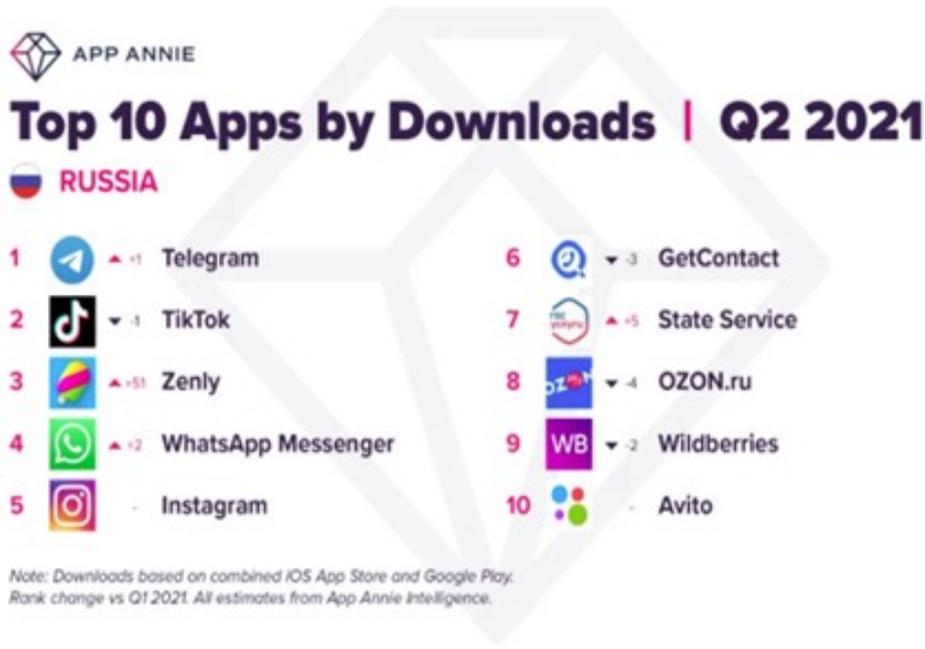
More practically, we harvest publicly available text data at scale, identify discussions about publicly traded companies, and map these onto a five point scale ranging from 'strong sell'-equivalent to 'strong buy'-equivalent messages, and everything in between.

Q: How?

A: In short, public social media messages + a modern text-processing machine learning methods.

More particularly, we track text updates posted by financial market-focused groups with meaningful audiences (i.e. 1k+) in one of the most popular social media platforms in Russia, Telegram.

We then **fit a set of text classification ML-models to a manually scored seed message sample**, with our models **ranging in complexity from standard** (i.e. regularised logit) **to state-of-the-art** (i.e. a classification neural net head on top of the deep learning Russian language model SBERT, see ([SberDevices, 2020](#))). The resulting sentiment score is an ensemble, i.e. a consensus, of our models.



Source: VTB Capital Research

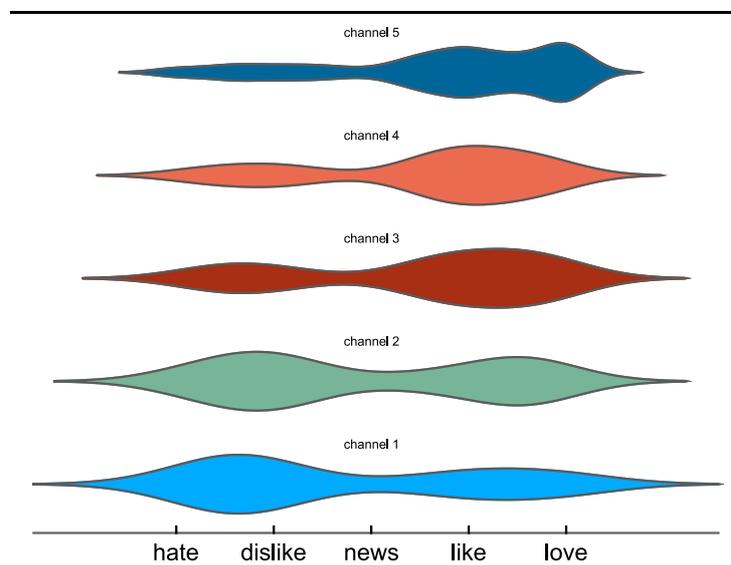
Q: What is the scale of the exercise? Is it representative?

A: The total audience count covered is some 1.5 mn, which is approximately 11% of the unique and 75% of the active retail investor accounts on the MOEX.

The audience of the channels (*channels* are essentially author-centred communities where messages are translated onto the audience) definitely has a substantial intersection and the unique audience is substantially smaller. Still we believe that the universe of opinion is adequately covered.

We deliberately concentrate on a segment of social media that is focused on stock picking and are not general 'news aggregators' in order to reduce signal to noise ratios. Nevertheless, even in the stock picking community, 'statement of fact without price cross-read' messages dominate the flow.

Distribution of sentiment for top-5 communities: some are balanced, others tilted



Source: VTB Capital Research.

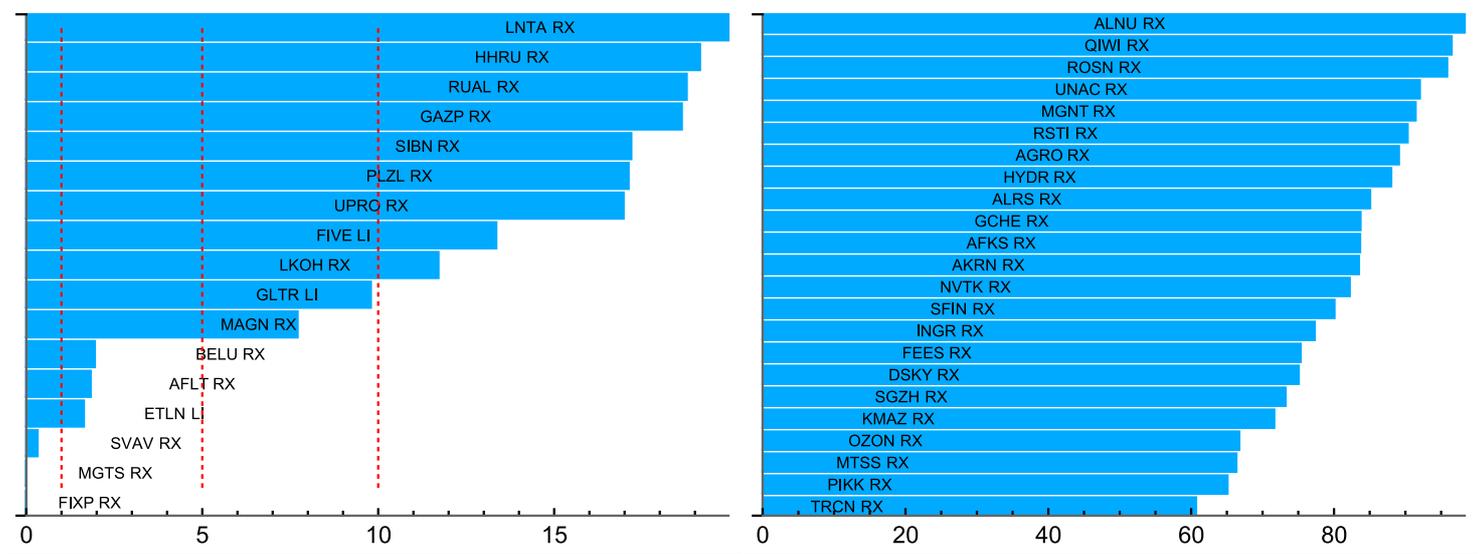
Q: What is the key takeaway from an equity investor perspective?

A: This depends on the investor – and the covered sector – as stock prices, on our numbers, have varying degrees of sensitivity to public sentiment.

In order to estimate this sensitivity, we run a Granger causality test for 1-5 lags of social sentiment influencing stock price changes and calculate the corresponding p-values. The null hypothesis here is that there is no causality, so the lower a stock's p-value, the stronger the evidence that the influence of public sentiment on that stock's prices should not be excluded.

The bar chart on below, left shows some of the stocks that have the lowest mean p-values in our sample covering January 2019-August 2021. For their holders (both actual and potential), tracking social sentiment might make sense and improve asset allocation.

Most crowd conscious: mean 5 lag Granger causality p-values, % **Least crowd conscious: mean 5 lag Granger causality p-values, %**



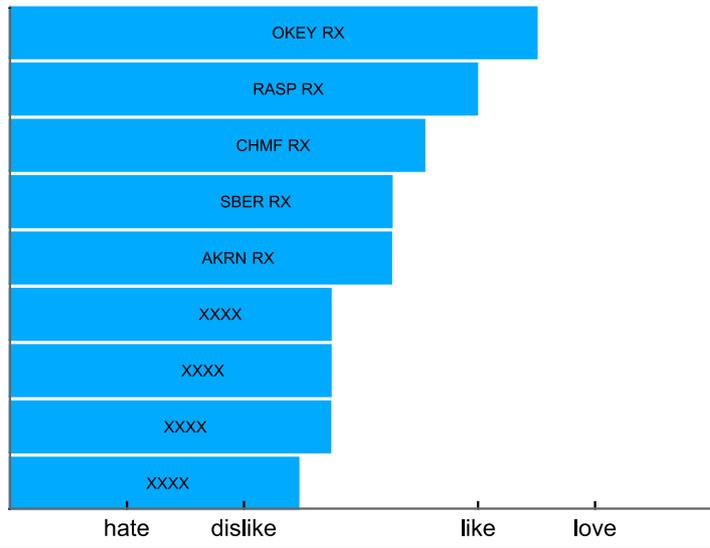
Source: VTB Capital Research.

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Q: What is current social sentiment by stock?

A: In the chart below we exclude neutral sentiment (i.e. messages concerning statement of fact) and only show those with strong current sentiment. We also censor tickers with the most negative social sentiment.

Social stock sentiment: most cared about stocks*



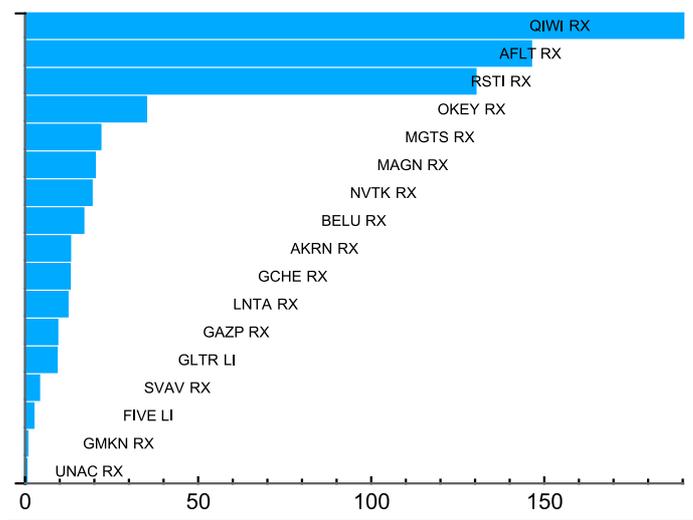
Source: VTB Capital Research. * as of 2021-09-17

Q: Did you test how a hypothetical portfolio allocation strategy based on social sentiment would perform?

A: Yes. The charts below shows a stock sentiment-based single stock strategy performance relative to 'buy and hold' for January 2019-August 2021 based on daily USD-nominated stock returns.

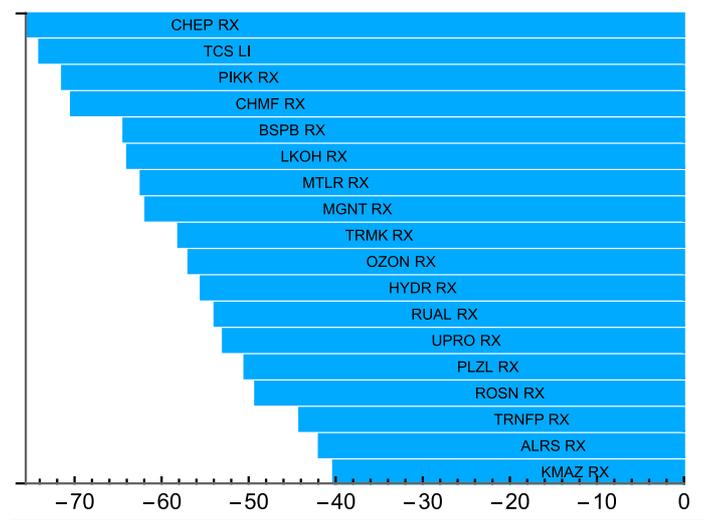
For illustrative purposes we estimated a strategy in which short stocks that are 'disliked' or 'hated' and longs stocks 'liked' and 'loved'. The charts below show that for some of the stocks, social sentiment outperforms simple buy and hold and for others trails behind it.

Crowd's best calls: cum. return over buy&hold, Jan'19-Aug'21



Source: VTB Capital Research.

Crowd's worst calls: cum. return over buy&hold, Jan'19-Aug'21



Source: VTB Capital Research.

Q: How can I get the data on the social stock sentiment?

A: How would you like to get it? This is a work in progress and should be treated as largely experimental. If you would like to get the data or have any feedback on how to best distribute it, [please get in touch](#). 🚀 🚀 🚀

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