

LIQUIDITY MEASUREMENT AND MONITORING for 02.2020

The list and free-float coefficients of the MICEX Index stocks as of 20.12.2019, total stocks outstanding as of the corresponding business day of 02.2020. Free-float coefficients are estimated by the Moscow Exchange.

1. Trading costs

| | | Percentage spread, % | Absolute spread, rubles | | | Percentage spread, % | Absolute spread, rubles | | | Percentage spread, % | Absolute spread, rubles |
|----|-------|----------------------|-------------------------|----|-------|----------------------|-------------------------|---------------------|-------|----------------------|-------------------------|
| 1 | GAZP | 0,022 | 0,0500 | 17 | POLY | 0,061 | 0,6474 | 33 | RTKM | 0,095 | 0,0842 |
| 2 | SBER | 0,025 | 0,0611 | 18 | MAGN | 0,063 | 0,0282 | 34 | TCSG | 0,097 | 1,5474 |
| 3 | LKOH | 0,030 | 1,9211 | 19 | AFLT | 0,065 | 0,0737 | 35 | FEES | 0,099 | 0,000223 |
| 4 | SBERP | 0,031 | 0,0721 | 20 | SNGS | 0,066 | 0,0303 | 36 | FIVE | 0,099 | 2,184211 |
| 5 | GMKN | 0,036 | 7,7895 | 21 | LNTA | 0,067 | 0,1263 | 37 | AFKS | 0,105 | 0,0191 |
| 6 | TATN | 0,041 | 0,3053 | 22 | MTSS | 0,069 | 0,2342 | 38 | PIKK | 0,114 | 0,4895 |
| 7 | ALRS | 0,043 | 0,0347 | 23 | UPRO | 0,070 | 0,0022 | 39 | TRNFP | 0,123 | 200,0000 |
| 8 | MGNT | 0,044 | 1,5789 | 24 | PLZL | 0,072 | 5,7368 | | | | |
| 9 | ROSN | 0,046 | 0,2079 | 25 | DSKY | 0,073 | 0,0842 | | | | |
| 10 | VTBR | 0,047 | 0,000022 | 26 | PHOR | 0,075 | 1,7895 | | | | |
| 11 | SNGSP | 0,048 | 0,0166 | 27 | YNDX | 0,076 | 2,2105 | | | | |
| 12 | CHMF | 0,049 | 0,4421 | 28 | IRAO | 0,076 | 0,0046 | | | | |
| 13 | NVTK | 0,056 | 0,6000 | 29 | TATNP | 0,081 | 0,5737 | | | | |
| 14 | MOEX | 0,058 | 0,0637 | 30 | RUAL | 0,086 | 0,0295 | Total stocks | | 0,067 | - |
| 15 | NLMK | 0,058 | 0,0800 | 31 | LSRG | 0,090 | 0,8105 | | | | |
| 16 | HYDR | 0,059 | 0,0004 | 32 | CBOM | 0,093 | 0,0054 | | | | |

2. Trading activity

| | | Trading volume, % | Trading volume (adjusted for free-float), % | FF | Trading volume, units of securities | | | Trading volume, % | Trading volume (adjusted for free-float), % | FF | Trading volume, units of securities |
|----|-------|-------------------|---|------|-------------------------------------|----|---------------------|-------------------|---|------|-------------------------------------|
| 1 | AFLT | 1,248 | 3,044 | 0,41 | 1 528 340 184 | 24 | PLZL | 0,138 | 0,659 | 0,21 | 1 521 669 844 |
| 2 | SBERP | 0,735 | 0,735 | 1,00 | 1 680 957 885 | 25 | UPRO | 0,135 | 0,842 | 0,16 | 257 035 224 |
| 3 | MGNT | 0,684 | 0,963 | 0,71 | 2 504 952 078 | 26 | TATN | 0,134 | 0,419 | 0,32 | 2 158 229 731 |
| 4 | HYDR | 0,585 | 3,080 | 0,19 | 1 774 526 563 | 27 | NLMK | 0,126 | 0,662 | 0,19 | 1 029 671 408 |
| 5 | TATNP | 0,557 | 0,557 | 1,00 | 583 572 611 | 28 | TRNFP | 0,120 | 0,374 | 0,32 | 299 226 158 |
| 6 | SNGSP | 0,483 | 0,661 | 0,73 | 1 291 270 671 | 29 | CBOM | 0,118 | 0,589 | 0,20 | 203 249 063 |
| 7 | MOEX | 0,341 | 0,588 | 0,58 | 844 412 368 | 30 | POLY | 0,115 | 0,256 | 0,45 | 575 751 072 |
| 8 | YNDX | 0,308 | 0,321 | 0,96 | 2 578 500 894 | 31 | RUAL | 0,110 | 0,690 | 0,16 | 587 902 642 |
| 9 | FEES | 0,305 | 1,695 | 0,18 | 879 624 307 | 32 | LSRG | 0,103 | 0,245 | 0,42 | 94 546 857 |
| 10 | ALRS | 0,294 | 0,866 | 0,34 | 1 727 179 048 | 33 | RTKM | 0,101 | 0,316 | 0,32 | 230 713 471 |
| 11 | IRAO | 0,282 | 0,854 | 0,33 | 1 755 205 584 | 34 | PHOR | 0,091 | 0,366 | 0,25 | 285 225 531 |
| 12 | AFKS | 0,270 | 0,817 | 0,33 | 474 221 620 | 35 | NVTK | 0,087 | 0,416 | 0,21 | 2 827 139 175 |
| 13 | VTBR | 0,243 | 0,901 | 0,27 | 1 475 261 656 | 36 | FIVE | 0,083 | 0,202 | 0,41 | 494 072 369 |
| 14 | GAZP | 0,237 | 0,516 | 0,46 | 12 719 459 840 | 37 | ROSN | 0,080 | 0,731 | 0,11 | 3 862 165 698 |
| 15 | SNGS | 0,230 | 0,919 | 0,25 | 3 690 246 361 | 38 | LNTA | 0,054 | 0,260 | 0,21 | 49 718 422 |
| 16 | SBER | 0,224 | 0,467 | 0,48 | 12 084 844 601 | 39 | PIKK | 0,023 | 0,125 | 0,18 | 63 804 625 |
| 17 | DSKY | 0,213 | 0,626 | 0,34 | 180 887 419 | | | | | | |
| 18 | MTSS | 0,169 | 0,376 | 0,45 | 1 130 813 011 | | | | | | |
| 19 | LKOH | 0,164 | 0,304 | 0,54 | 7 409 010 971 | | | | | | |
| 20 | MAGN | 0,162 | 1,012 | 0,16 | 807 158 748 | | | | | | |
| 21 | GMKN | 0,160 | 0,422 | 0,38 | 5 442 023 229 | | | | | | |
| 22 | CHMF | 0,160 | 0,798 | 0,20 | 1 200 648 162 | | | | | | |
| 23 | TCSG | 0,145 | 0,163 | 0,89 | 275 561 062 | | Total stocks | 0,252 | 0,714 | | |

3. Elasticity*

| | | HH | | | HH |
|----|-------|-------|---------------------|-------|--------------|
| 1 | SBERP | 0,003 | 24 | TATN | 0,018 |
| 2 | AFLT | 0,003 | 25 | TRNFP | 0,018 |
| 3 | TATNP | 0,004 | 26 | SNGS | 0,019 |
| 4 | SNGSP | 0,005 | 27 | UPRO | 0,021 |
| 5 | MGNT | 0,005 | 28 | NLMK | 0,021 |
| 6 | HYDR | 0,006 | 29 | LSRG | 0,023 |
| 7 | MOEX | 0,007 | 30 | PLZL | 0,025 |
| 8 | VTBR | 0,008 | 31 | TCSG | 0,029 |
| 9 | SBER | 0,009 | 32 | RTKM | 0,029 |
| 10 | GAZP | 0,011 | 33 | POLY | 0,033 |
| 11 | ALRS | 0,012 | 34 | ROSN | 0,034 |
| 12 | CHMF | 0,013 | 35 | RUAL | 0,037 |
| 13 | YNDX | 0,013 | 36 | LNTA | 0,039 |
| 14 | LKOH | 0,013 | 37 | FIVE | 0,047 |
| 15 | FEES | 0,014 | 38 | NVTK | 0,048 |
| 16 | MTSS | 0,014 | 39 | PIKK | 0,094 |
| 17 | IRAO | 0,014 | | | |
| 18 | AFKS | 0,014 | | | |
| 19 | GMKN | 0,015 | | | |
| 20 | DSKY | 0,015 | | | |
| 21 | CBOM | 0,015 | | | |
| 22 | PHOR | 0,016 | | | |
| 23 | MAGN | 0,017 | Total stocks | | 0,020 |

* From 10.2015 performance in the elasticity dimension is assessed through the HUI-HEUBEL Liquidity Ratio (hereinafter HH).

| | Most liquid | Spread, % | Volume, % | HH | Least liquid | Spread, % | Volume, % | HH |
|---------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|
| 09.2019 | 1 | GAZP | SNGSP | TATNP | 1 | LNTA | CBOM | NVTK |
| 09.2019 | 2 | SBER | TATNP | SBERP | 2 | PIKK | SFIN | PIKK |
| 09.2019 | 3 | ROSN | AFLT | AFLT | 3 | MVID | PIKK | SFIN |
| 09.2019 | 4 | SNGSP | SBERP | SNGSP | 4 | RNFT | LNTA | LNTA |
| 09.2019 | 5 | HYDR | SNGS | MOEX | 5 | SFIN | RNFT | RNFT |
| 10.2019 | 1 | SBER | SNGSP | SBERP | 1 | PIKK | CBOM | NVTK |
| 10.2019 | 2 | GAZP | YNDX | TATNP | 2 | LNTA | NVTK | MVID |
| 10.2019 | 3 | GMKN | SBERP | AFLT | 3 | MVID | SFIN | RNFT |
| 10.2019 | 4 | VTBR | AFLT | MOEX | 4 | RNFT | LNTA | SFIN |
| 10.2019 | 5 | SBERP | TATNP | MGNT | 5 | SFIN | RNFT | LNTA |
| 11.2019 | 1 | SBER | MOEX | SBERP | 1 | LNTA | RUAL | NVTK |
| 11.2019 | 2 | LKOH | DSKY | TATNP | 2 | MVID | NVTK | PIKK |
| 11.2019 | 3 | SBERP | SBERP | MOEX | 3 | TRNFP | SFIN | RNFT |
| 11.2019 | 4 | GAZP | GAZP | AFLT | 4 | RNFT | LNTA | LNTA |
| 11.2019 | 5 | VTBR | VTBR | MGNT | 5 | SFIN | RNFT | SFIN |
| 12.2020 | 1 | GAZP | DSKY | SBERP | 1 | IRAO | RUAL | ROSN |
| 12.2020 | 2 | LKOH | AFLT | AFLT | 2 | CBOM | ROSN | PIKK |
| 12.2020 | 3 | SBERP | TATNP | TATNP | 3 | TCSG | PIKK | FIVE |
| 12.2020 | 4 | SBER | SBERP | MGNT | 4 | LSRG | LNTA | LNTA |
| 12.2020 | 5 | VTBR | SNGSP | DSKY | 5 | TRNFP | NVTK | NVTK |
| 01.2020 | 1 | SBER | HYDR | AFLT | 1 | RTKM | POLY | RUAL |
| 01.2020 | 2 | LKOH | AFLT | SBERP | 2 | CBOM | ROSN | ROSN |
| 01.2020 | 3 | GAZP | MGNT | MGNT | 3 | IRAO | LNTA | LNTA |
| 01.2020 | 4 | VTBR | SBERP | SNGSP | 4 | TCSG | NVTK | NVTK |
| 01.2020 | 5 | SBERP | TATNP | HYDR | 5 | TRNFP | PIKK | PIKK |
| 02.2020 | 1 | GAZP | AFLT | SBERP | 1 | FEES | NVTK | RUAL |
| 02.2020 | 2 | SBER | SBERP | AFLT | 2 | FIVE | FIVE | LNTA |
| 02.2020 | 3 | LKOH | MGNT | TATNP | 3 | AFKS | ROSN | FIVE |
| 02.2020 | 4 | SBERP | HYDR | SNGSP | 4 | PIKK | LNTA | NVTK |
| 02.2020 | 5 | GMKN | TATNP | MGNT | 5 | TRNFP | PIKK | PIKK |

The table to the left provides statistics on liquidity at a level of an individual stock.

Among the most liquid stocks within a half-year period of 09.2019 – 02.2020:

1. Stocks, appearing at least once in the top-5 list of the most liquid stocks in the three dimensions simultaneously (highlighted in red in the table): **SBERP, SNGSP.**

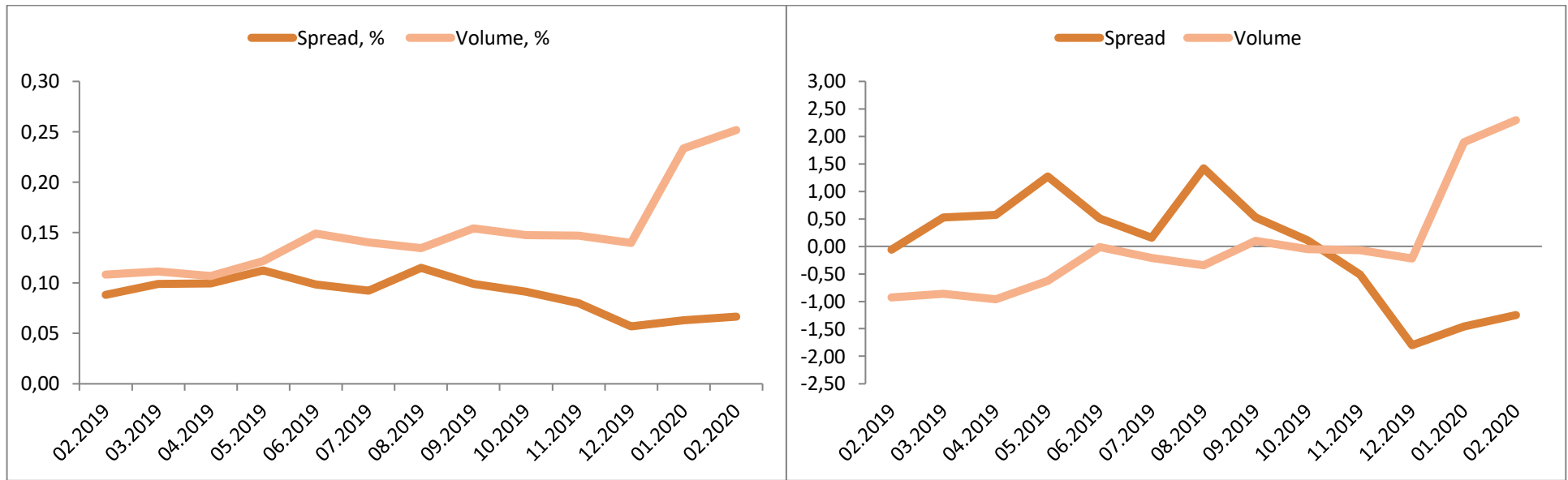
Stocks, appearing no less than 5-6 months in the top-5 list of the most liquid stocks in any of the dimensions (displayed in red bold font in the table):

GAZP, SBER (trading costs), AFLT, SBERP, TATNP (trading activity), AFLT, MGNT, SBERP, TATNP (elasticity).

Among the least liquid stocks within a half-year period of 09.2019 – 02.2020:

1. Stocks, appearing at least once in the list of the 5 least liquid stocks in the three dimensions simultaneously (highlighted in blue in the table): **FIVE, LNTA, PIKK, RNFT, SFIN.**

2. Stocks, appearing no less than 5-6 months in the list of the 5 least liquid stocks in any of the dimensions (displayed in blue bold font in the table):
- **(trading costs), LNTA, NVTK (trading activity), LNTA, NVTK (elasticity).**



The figures above provide liquidity dynamics **at an aggregate level**. The left figure displays dynamics of the two liquidity dimensions *in original numerical values*. Trading costs measured by average percentage daily spread in February 2020 increased and amounted to 0.067%. Trading activity measured by average percentage daily trading volume in February 2020 kept growing to the level of 0.252%. In February 2020 liquidity was in a disequilibrium state: the trading activity metric and the trading costs metric moved in the same directions.

The right figure displays dynamics of the two liquidity dimensions *in standardized numerical values*. In February 2020 trading costs reached the third lowest level over a 1-year period while trading activity reached the maximum level over a 1-year period.