

LIQUIDITY MEASUREMENT AND MONITORING for 03.2020

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 03.2020. 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 | MOEX | 0,066 | 0,0600 | 17 | PLZL | 0,118 | 10,6667 | 33 | TATNP | 0,161 | 0,7952 |
| 2 | MGNT | 0,076 | 2,2381 | 18 | POLY | 0,122 | 1,4000 | 34 | PHOR | 0,163 | 3,7619 |
| 3 | GAZP | 0,077 | 0,1357 | 19 | TATN | 0,124 | 0,6095 | 35 | CBOM | 0,164 | 0,0088 |
| 4 | SBERP | 0,078 | 0,1471 | 20 | ALRS | 0,126 | 0,0781 | 36 | LSRG | 0,183 | 1,2190 |
| 5 | HYDR | 0,078 | 0,0004 | 21 | CHMF | 0,129 | 1,0571 | 37 | PIKK | 0,195 | 0,7571 |
| 6 | SBER | 0,083 | 0,1638 | 22 | DSKY | 0,129 | 0,1171 | 38 | FIVE | 0,216 | 4,071429 |
| 7 | LKOH | 0,085 | 3,9286 | 23 | RUAL | 0,130 | 0,0360 | 39 | TRNFP | 0,302 | 428,5714 |
| 8 | NLMK | 0,086 | 0,0971 | 24 | RTKM | 0,130 | 0,0933 | | | | |
| 9 | ROSN | 0,091 | 0,2786 | 25 | IRAO | 0,132 | 0,0063 | | | | |
| 10 | AFKS | 0,092 | 0,0116 | 26 | NVTK | 0,132 | 1,1524 | | | | |
| 11 | GMKN | 0,095 | 17,8095 | 27 | LNTA | 0,133 | 0,1952 | | | | |
| 12 | VTBR | 0,096 | 0,000031 | 28 | FEES | 0,133 | 0,000218 | | | | |
| 13 | MTSS | 0,096 | 0,2810 | 29 | AFLT | 0,135 | 0,0990 | | | | |
| 14 | MAGN | 0,104 | 0,0374 | 30 | YNDX | 0,138 | 3,4476 | Total stocks | | 0,126 | - |
| 15 | SNGS | 0,107 | 0,0340 | 31 | TCSG | 0,138 | 1,4667 | | | | |
| 16 | SNGSP | 0,112 | 0,0402 | 32 | UPRO | 0,160 | 0,0041 | | | | |

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 | 4,271 | 10,418 | 0,41 | 3 347 464 353 | 24 | UPRO | 0,267 | 1,670 | 0,16 | 427 896 297 |
| 2 | TATNP | 1,776 | 1,776 | 1,00 | 1 284 150 651 | 25 | CHMF | 0,252 | 1,258 | 0,20 | 1 725 406 806 |
| 3 | SBERP | 1,637 | 1,637 | 1,00 | 3 007 330 672 | 26 | RTKM | 0,244 | 0,762 | 0,32 | 446 750 975 |
| 4 | MOEX | 1,357 | 2,339 | 0,58 | 2 809 885 572 | 27 | POLY | 0,240 | 0,534 | 0,45 | 1 268 201 080 |
| 5 | MGNT | 1,078 | 1,518 | 0,71 | 3 105 845 679 | 28 | ROSN | 0,236 | 2,144 | 0,11 | 7 501 977 252 |
| 6 | SNGSP | 0,970 | 1,329 | 0,73 | 2 694 576 988 | 29 | PLZL | 0,231 | 1,098 | 0,21 | 2 788 708 045 |
| 7 | HYDR | 0,755 | 3,972 | 0,19 | 1 846 231 615 | 30 | TRNFP | 0,219 | 0,684 | 0,32 | 478 548 681 |
| 8 | AFKS | 0,720 | 2,182 | 0,33 | 894 544 242 | 31 | NLMK | 0,209 | 1,099 | 0,19 | 1 448 276 500 |
| 9 | SBER | 0,664 | 1,383 | 0,48 | 27 936 741 339 | 32 | MAGN | 0,203 | 1,267 | 0,16 | 820 071 880 |
| 10 | DSKY | 0,647 | 1,902 | 0,34 | 442 413 296 | 33 | CBOM | 0,191 | 0,955 | 0,20 | 306 587 921 |
| 11 | VTBR | 0,640 | 2,370 | 0,27 | 2 789 142 642 | 34 | FIVE | 0,169 | 0,413 | 0,41 | 886 287 420 |
| 12 | ALRS | 0,486 | 1,430 | 0,34 | 2 245 998 266 | 35 | RUAL | 0,137 | 0,858 | 0,16 | 539 096 541 |
| 13 | FEES | 0,468 | 2,600 | 0,18 | 988 412 267 | 36 | PHOR | 0,126 | 0,505 | 0,25 | 374 665 726 |
| 14 | GAZP | 0,458 | 0,997 | 0,46 | 19 407 931 522 | 37 | NVTK | 0,125 | 0,596 | 0,21 | 3 290 600 420 |
| 15 | LKOH | 0,434 | 0,805 | 0,54 | 14 508 211 196 | 38 | LNTA | 0,104 | 0,493 | 0,21 | 76 152 437 |
| 16 | MTSS | 0,434 | 0,964 | 0,45 | 2 482 961 558 | 39 | PIKK | 0,024 | 0,133 | 0,18 | 60 030 186 |
| 17 | GMKN | 0,390 | 1,027 | 0,38 | 11 610 864 892 | | | | | | |
| 18 | IRAO | 0,389 | 1,179 | 0,33 | 1 973 530 840 | | | | | | |
| 19 | YNDX | 0,386 | 0,402 | 0,96 | 2 851 381 307 | | | | | | |
| 20 | TCSG | 0,381 | 0,428 | 0,89 | 481 624 364 | | | | | | |
| 21 | LSRG | 0,379 | 0,901 | 0,42 | 238 930 323 | | | | | | |
| 22 | SNGS | 0,374 | 1,495 | 0,25 | 4 136 020 546 | | | | | | |
| 23 | TATN | 0,324 | 1,012 | 0,32 | 3 696 250 709 | Total stocks | | 0,574 | 1,507 | | |

3. Elasticity*

| | | HH | | | HH |
|----|-------|-------|---------------------|------|--------------|
| 1 | AFLT | 0,002 | 24 | TATN | 0,027 |
| 2 | SBERP | 0,004 | 25 | LSRG | 0,028 |
| 3 | MOEX | 0,005 | 26 | UPRO | 0,028 |
| 4 | SNGSP | 0,005 | 27 | NLMK | 0,030 |
| 5 | TATNP | 0,006 | 28 | RTKM | 0,031 |
| 6 | MGNT | 0,007 | 29 | PLZL | 0,031 |
| 7 | SBER | 0,010 | 30 | MAGN | 0,032 |
| 8 | VTBR | 0,010 | 31 | TCSG | 0,034 |
| 9 | HYDR | 0,011 | 32 | ROSN | 0,038 |
| 10 | AFKS | 0,013 | 33 | POLY | 0,042 |
| 11 | GAZP | 0,013 | 34 | PHOR | 0,043 |
| 12 | MTSS | 0,014 | 35 | FIVE | 0,052 |
| 13 | DSKY | 0,014 | 36 | NVTK | 0,073 |
| 14 | YNDX | 0,016 | 37 | RUAL | 0,074 |
| 15 | LKOH | 0,017 | 38 | LNTA | 0,090 |
| 16 | FEES | 0,017 | 39 | PIKK | 0,230 |
| 17 | ALRS | 0,018 | | | |
| 18 | IRAO | 0,019 | | | |
| 19 | CHMF | 0,022 | | | |
| 20 | GMKN | 0,022 | | | |
| 21 | SNGS | 0,024 | | | |
| 22 | TRNFP | 0,025 | | | |
| 23 | CBOM | 0,025 | Total stocks | | 0,031 |

* 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 |
|---------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|
| 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 |
| 03.2020 | 1 | MOEX | AFLT | AFLT | 1 | CBOM | RUAL | FIVE |
| 03.2020 | 2 | MGNT | TATNP | SBERP | 2 | LSRG | PHOR | NVTK |
| 03.2020 | 3 | GAZP | SBERP | MOEX | 3 | PIKK | NVTK | RUAL |
| 03.2020 | 4 | SBERP | MOEX | SNGSP | 4 | FIVE | LNTA | LNTA |
| 03.2020 | 5 | HYDR | MGNT | TATNP | 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 10.2019 – 03.2020:

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): **MOEX, SBERP.**

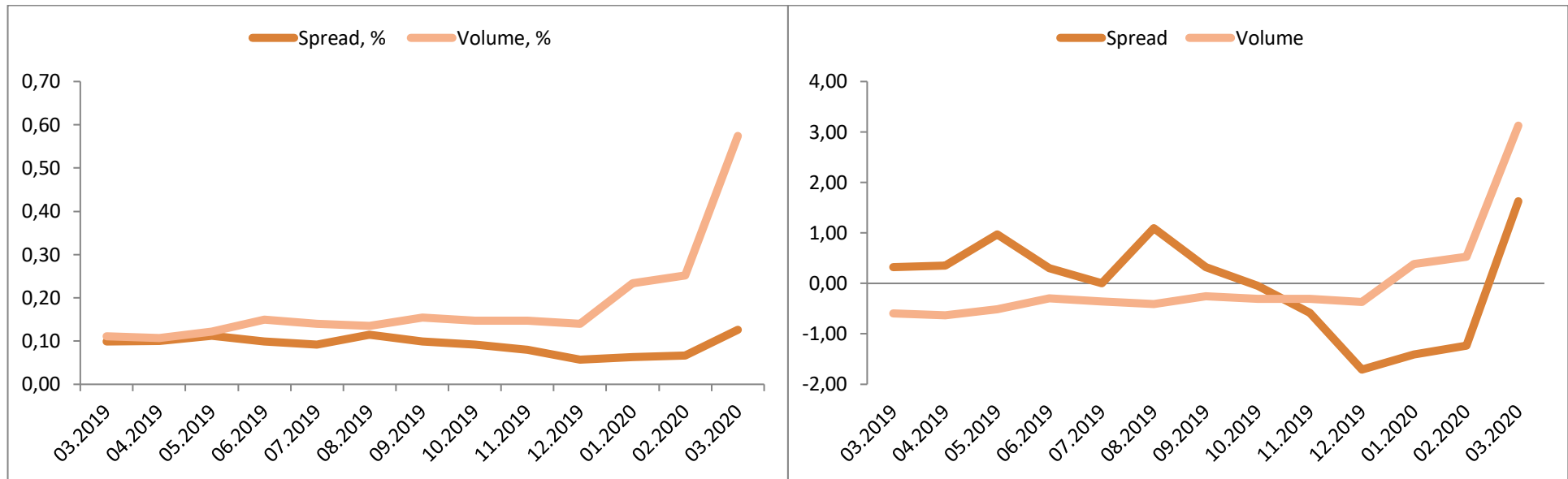
Stocks, appearing no less than 5-6 months in the top-5 list of the most liquid stocks in any of the dimensions (displayed in red bold font in the table):

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

Among the least liquid stocks within a half-year period of 10.2019 – 03.2020:

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): **TRNFP (trading costs), LNTA, NVTK (trading activity), LNTA, NVTK, PIKK (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 March 2020 increased nearly twice and amounted to 0.126%. Trading activity measured by average percentage daily trading volume in March 2020 also increased nearly twice to the level of 0.574%. In March 2020 liquidity was in a disequilibrium state: the trading activity metric and the trading costs metric moved in the same direction.

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