

LIQUIDITY MEASUREMENT AND MONITORING for 07.2019

The list and free-float coefficients of the MICEX Index stocks as of 22.06.2019, total stocks outstanding as of the corresponding business day of 07.2019. 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 | SBER | 0,025 | 0,0583 | 17 | YNDX | 0,054 | 1,3478 | 33 | PLZL | 0,127 | 7,9348 |
| 2 | SBERP | 0,028 | 0,0574 | 18 | AFLT | 0,054 | 0,0583 | 34 | FIVE | 0,136 | 2,956522 |
| 3 | GAZP | 0,028 | 0,0670 | 19 | CHMF | 0,057 | 0,6000 | 35 | IRAO | 0,141 | 0,0064 |
| 4 | VTBR | 0,032 | 0,000014 | 20 | FEES | 0,064 | 0,000120 | 36 | MVID | 0,179 | 0,7652 |
| 5 | ROSN | 0,033 | 0,1370 | 21 | SNGS | 0,070 | 0,0187 | 37 | LNTA | 0,184 | 0,3913 |
| 6 | GMKN | 0,035 | 5,0435 | 22 | CBOM | 0,071 | 0,0043 | 38 | PIKK | 0,191 | 0,7261 |
| 7 | NLMK | 0,037 | 0,0565 | 23 | NVTK | 0,072 | 0,9391 | 39 | RNFT | 0,421 | 2,4783 |
| 8 | LKOH | 0,037 | 1,9348 | 24 | RTKM | 0,075 | 0,0609 | 40 | SFIN | 0,452 | 2,2261 |
| 9 | SNGSP | 0,037 | 0,0139 | 25 | MTSS | 0,077 | 0,2065 | | | | |
| 10 | MGNT | 0,040 | 1,5217 | 26 | UPRO | 0,078 | 0,0020 | | | | |
| 11 | MOEX | 0,041 | 0,0378 | 27 | RUAL | 0,083 | 0,0226 | | | | |
| 12 | ALRS | 0,043 | 0,0348 | 28 | DSKY | 0,088 | 0,0774 | | | | |
| 13 | MAGN | 0,046 | 0,0202 | 29 | TATNP | 0,093 | 0,5957 | | | | |
| 14 | TATN | 0,049 | 0,3609 | 30 | PHOR | 0,105 | 2,5217 | Total stocks | | 0,092 | - |
| 15 | AFKS | 0,050 | 0,0059 | 31 | POLY | 0,105 | 0,8261 | | | | |
| 16 | HYDR | 0,051 | 0,0003 | 32 | TRNFP | 0,107 | 173,9130 | | | | |

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 | SNGSP | 0,553 | 0,758 | 0,73 | 1 532 319 842 | 24 | GMKN | 0,068 | 0,180 | 0,38 | 1 568 965 303 |
| 2 | AFLT | 0,498 | 1,213 | 0,41 | 592 985 562 | 25 | CHMF | 0,068 | 0,340 | 0,20 | 600 484 864 |
| 3 | TATNP | 0,459 | 0,459 | 1,00 | 436 879 256 | 26 | POLY | 0,067 | 0,176 | 0,38 | 246 558 596 |
| 4 | AFKS | 0,360 | 1,091 | 0,33 | 396 670 428 | 27 | RTKM | 0,064 | 0,201 | 0,32 | 133 956 513 |
| 5 | MOEX | 0,348 | 0,600 | 0,58 | 738 166 192 | 28 | MAGN | 0,060 | 0,377 | 0,16 | 297 800 264 |
| 6 | SBERP | 0,337 | 0,337 | 1,00 | 694 441 122 | 29 | UPRO | 0,059 | 0,367 | 0,16 | 97 836 760 |
| 7 | VTBR | 0,295 | 1,094 | 0,27 | 1 642 952 504 | 30 | RUAL | 0,041 | 0,254 | 0,16 | 171 003 116 |
| 8 | ALRS | 0,238 | 0,699 | 0,34 | 1 444 267 622 | 31 | SNGS | 0,035 | 0,140 | 0,25 | 333 495 725 |
| 9 | MVID | 0,237 | 0,742 | 0,32 | 182 656 772 | 32 | PHOR | 0,029 | 0,117 | 0,25 | 91 906 774 |
| 10 | MGNT | 0,231 | 0,325 | 0,71 | 903 694 953 | 33 | FIVE | 0,028 | 0,069 | 0,41 | 166 837 736 |
| 11 | GAZP | 0,224 | 0,487 | 0,46 | 12 401 659 976 | 34 | ROSN | 0,021 | 0,189 | 0,11 | 930 275 741 |
| 12 | SBER | 0,157 | 0,327 | 0,48 | 8 049 080 977 | 35 | NVTK | 0,018 | 0,087 | 0,21 | 722 471 622 |
| 13 | HYDR | 0,154 | 0,811 | 0,19 | 385 050 014 | 36 | LNTA | 0,017 | 0,062 | 0,28 | 17 807 226 |
| 14 | YNDX | 0,124 | 0,130 | 0,96 | 909 734 880 | 37 | CBOM | 0,016 | 0,090 | 0,18 | 26 187 565 |
| 15 | FEES | 0,119 | 0,663 | 0,18 | 288 314 492 | 38 | SFIN | 0,012 | 0,029 | 0,40 | 6 391 322 |
| 16 | MTSS | 0,101 | 0,224 | 0,45 | 548 175 287 | 39 | PIKK | 0,010 | 0,055 | 0,18 | 24 625 703 |
| 17 | IRAO | 0,098 | 0,298 | 0,33 | 471 584 965 | 40 | RNFT | 0,002 | 0,011 | 0,20 | 3 939 877 |
| 18 | NLMK | 0,092 | 0,576 | 0,16 | 859 520 521 | | | | | | |
| 19 | LKOH | 0,082 | 0,150 | 0,55 | 3 248 150 054 | | | | | | |
| 20 | TATN | 0,075 | 0,235 | 0,32 | 1 227 034 528 | | | | | | |
| 21 | DSKY | 0,073 | 0,215 | 0,34 | 47 628 450 | | | | | | |
| 22 | PLZL | 0,071 | 0,441 | 0,16 | 584 661 601 | | | | | | |
| 23 | TRNFP | 0,071 | 0,220 | 0,32 | 179 437 646 | | Total stocks | 0,140 | 0,371 | | |

3. Elasticity*

| | | HH | | | HH |
|----|-------|-------|---------------------|------|--------------|
| 1 | SBERP | 0,004 | 24 | YNDX | 0,030 |
| 2 | SNGSP | 0,005 | 25 | RTKM | 0,032 |
| 3 | TATNP | 0,006 | 26 | PLZL | 0,035 |
| 4 | AFLT | 0,006 | 27 | UPRO | 0,038 |
| 5 | MOEX | 0,006 | 28 | MVID | 0,040 |
| 6 | ALRS | 0,008 | 29 | SNGS | 0,043 |
| 7 | MGNT | 0,009 | 30 | POLY | 0,044 |
| 8 | VTBR | 0,010 | 31 | PHOR | 0,048 |
| 9 | SBER | 0,011 | 32 | CBOM | 0,049 |
| 10 | AFKS | 0,014 | 33 | RUAL | 0,057 |
| 11 | GAZP | 0,015 | 34 | ROSN | 0,068 |
| 12 | HYDR | 0,016 | 35 | FIVE | 0,098 |
| 13 | MTSS | 0,016 | 36 | NVTK | 0,108 |
| 14 | NLMK | 0,018 | 37 | LNTA | 0,123 |
| 15 | LKOH | 0,019 | 38 | SFIN | 0,127 |
| 16 | DSKY | 0,020 | 39 | PIKK | 0,186 |
| 17 | FEES | 0,024 | 40 | RNFT | 0,690 |
| 18 | GMKN | 0,025 | 41 | | |
| 19 | TRNFP | 0,025 | | | |
| 20 | CHMF | 0,025 | 43 | | |
| 21 | MAGN | 0,026 | 44 | | |
| 22 | TATN | 0,027 | 45 | | |
| 23 | IRAO | 0,029 | Total stocks | | 0,054 |

* 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 |
|---------|-------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|
| 02.2019 | 1 | SBER | AFLT | AFLT | 1 | CBOM | NVTK | LNTA |
| 02.2019 | 2 | GAZP | SBERP | SBERP | 2 | TRNFP | UPRO | UPRO |
| 02.2019 | 3 | ROSN | MOEX | MOEX | 3 | PIKK | CBOM | NVTK |
| 02.2019 | 4 | LKOH | SBER | SBER | 4 | SFIN | PIKK | PIKK |
| 02.2019 | 5 | SNGSP | MGNT | MGNT | 5 | RNFT | RNFT | RNFT |
| 03.2019 | 1 | SBER | SBERP | SBERP | 1 | LNTA | PHOR | PIKK |
| 03.2019 | 2 | MOEX | AFLT | MOEX | 2 | TRMK | CBOM | PHOR |
| 03.2019 | 3 | LKOH | MOEX | AFLT | 3 | PIKK | NVTK | FIVE |
| 03.2019 | 4 | SBERP | MTLR | SBER | 4 | RNFT | PIKK | NVTK |
| 03.2019 | 5 | GAZP | SBER | SNGSP | 5 | SFIN | RNFT | RNFT |
| 04.2019 | 1 | SBER | SBERP | SBERP | 1 | LNTA | CBOM | FIVE |
| 04.2019 | 2 | LKOH | MVID | MOEX | 2 | FIVE | NVTK | NVTK |
| 04.2019 | 3 | ROSN | MOEX | SBER | 3 | PIKK | PHOR | PHOR |
| 04.2019 | 4 | MOEX | SBER | SNGSP | 4 | SFIN | PIKK | PIKK |
| 04.2019 | 5 | SBERP | MGNT | AFLT | 5 | RNFT | RNFT | RNFT |
| 05.2019 | 1 | GAZP | SBERP | SBERP | 1 | PIKK | ROSN | NVTK |
| 05.2019 | 2 | SBER | MOEX | MOEX | 2 | TRNFP | CBOM | FIVE |
| 05.2019 | 3 | MOEX | TATNP | SNGSP | 3 | MVID | LNTA | PIKK |
| 05.2019 | 4 | SBERP | AFLT | AFLT | 4 | RNFT | PIKK | LNTA |
| 05.2019 | 5 | CHMF | SNGSP | MGNT | 5 | SFIN | RNFT | RNFT |
| 06.2019 | 1 | SBER | SBERP | SBERP | 1 | FIVE | NVTK | NVTK |
| 06.2019 | 2 | GAZP | AFLT | MOEX | 2 | LNTA | SFIN | FIVE |
| 06.2019 | 3 | SBERP | MOEX | MVID | 3 | TRNFP | CBOM | LNTA |
| 06.2019 | 4 | LKOH | MGNT | AFLT | 4 | SFIN | PIKK | SFIN |
| 06.2019 | 5 | MGNT | MVID | SNGSP | 5 | RNFT | RNFT | RNFT |
| 07.2019 | 1 | SBER | SNGSP | SBERP | 1 | MVID | LNTA | NVTK |
| 07.2019 | 2 | SBERP | AFLT | SNGSP | 2 | LNTA | CBOM | LNTA |
| 07.2019 | 3 | GAZP | TATNP | TATNP | 3 | PIKK | SFIN | SFIN |
| 07.2019 | 4 | VTBR | AFKS | AFLT | 4 | RNFT | PIKK | PIKK |
| 07.2019 | 5 | ROSN | MOEX | MOEX | 5 | SFIN | RNFT | RNFT |

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 02.2019 - 07.2019:

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, SBER, SBERP.

Stocks, appearing no less then 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, MOEX, SBERP (trading activity), AFLT, MOEX, SBERP, SNGSP (elasticity).

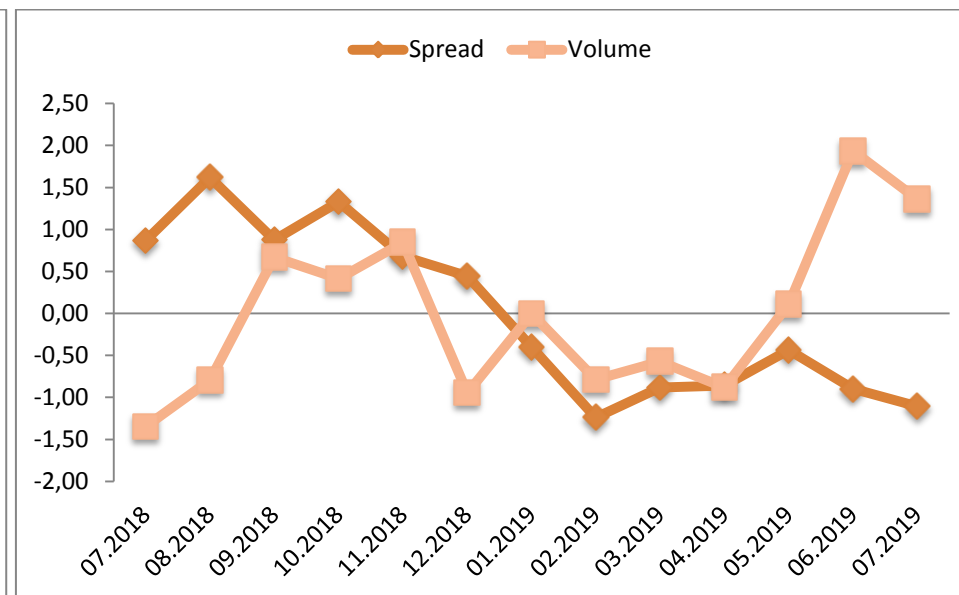
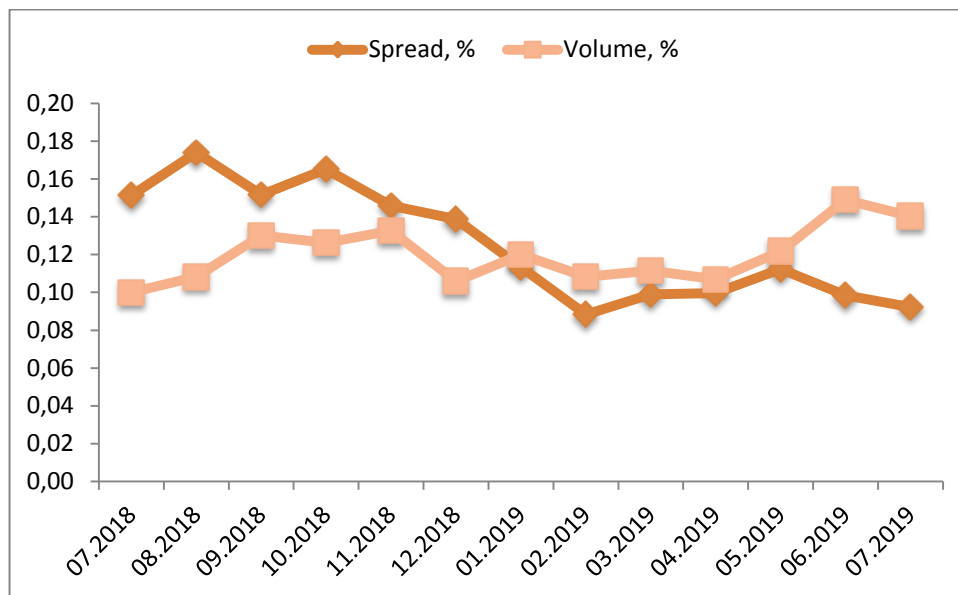
Among the least liquid stocks within a half-year period of 02.2019 - 07.2019:

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):

LNTA, PIKK, RNFT, SFIN.

2. Stocks, appearing no less then 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):

PIKK, RNFT, SFIN (trading costs), CBOM, PIKK, RNFT (trading activity), NVTK, PIKK, RNFT (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 July 2019 decreased compared to the previous month to 0.092%. Trading activity measured by average percentage daily trading volume in July 2019 also decreased compared to the previous month to 0.140%. In July 2019 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 July 2019 trading costs were below the average level over a 1-year period while trading volume reached second maximum over a 1-year period. This can be explained by the ex-dividend date traditionally falling on July.