

Kentucky Retirement Systems

# Domestic and Global Commissions Report

Quarter Ending: December 31, 2017

**Kentucky Retirement Systems**  
**Domestic Equity - Common Stock Commissions**  
**Quarter Ended December 31, 2017**

| Broker/Account                           | Shares Traded     | Commission     | Value of Trade     | Per Share     | % Cost of Trade |
|--|-------------------|----------------|--------------------|---------------|-----------------|
| BAIRD, ROBERT W & CO INC, MILWAUKEE      | 67,140            | 2,014          | 4,215,058          | 0.0300        | 0.0478%         |
| BARCLAYS CAPITAL INC./LE, NEW JERSEY     | 38,210            | 1,528          | 573,318            | 0.0400        | 0.2666%         |
| BARCLAYS CAPITAL LE, NEW YORK            | 225,619           | 5,638          | 4,375,831          | 0.0250        | 0.1288%         |
| BERNSTEIN SANFORD C & CO, NEW YORK       | 205,285           | 5,358          | 7,304,747          | 0.0261        | 0.0734%         |
| BMO CAPITAL MARKETS CORP, NEW YORK       | 51,620            | 2,065          | 1,805,807          | 0.0400        | 0.1143%         |
| BTIG LLC, NEW YORK                       | 69,246            | 1,731          | 1,076,186          | 0.0250        | 0.1609%         |
| CANTOR FITZGERALD & CO INC, NEW YORK     | 73,744            | 2,036          | 1,100,561          | 0.0276        | 0.1850%         |
| CITIGROUP GBL MKTS INC, NEW YORK         | 50,738            | 1,359          | 1,526,582          | 0.0268        | 0.0890%         |
| CONVERGEX EXECUTION SOLUTION, NEW YORK   | 9,421             | 71             | 172,692            | 0.0075        | 0.0409%         |
| COWEN AND CO LLC, NEW YORK               | 53,410            | 1,625          | 1,257,406          | 0.0304        | 0.1293%         |
| CREDIT SUISSE, NEW YORK (CSUS)           | 116,181           | 2,448          | 12,218,456         | 0.0211        | 0.0200%         |
| DEUTSCHE BK SECS INC, NY (NWSCUS33)      | 268,441           | 7,048          | 8,571,770          | 0.0263        | 0.0822%         |
| FRIEDMAN, BILLINGS AND RAMSEY, NEW YORK  | 16,060            | 642            | 223,681            | 0.0400        | 0.2872%         |
| GOLDMAN SACHS & CO, NY                   | 330,697           | 5,129          | 15,910,336         | 0.0155        | 0.0322%         |
| INSTINET CLEARING SER INC, NEW YORK      | 1,501,509         | 42,381         | 22,427,609         | 0.0282        | 0.1890%         |
| INSTINET CORP, NEW YORK                  | 53,656            | 719            | 3,382,776          | 0.0134        | 0.0212%         |
| INSTINET CORP, NY                        | 3,330             | 33             | 288,025            | 0.0100        | 0.0116%         |
| INVESTMENT TECH GROUP INC, NEW YORK      | 2,280,027         | 31,440         | 90,393,899         | 0.0138        | 0.0348%         |
| INVESTMENT TECHNOLOGY GROUP, NEW YORK    | 21,030            | 273            | 1,870,648          | 0.0130        | 0.0146%         |
| ISI GROUP INC, NEW YORK                  | 78,332            | 2,526          | 6,879,382          | 0.0323        | 0.0367%         |
| ITG INC, NEW YORK                        | 464,576           | 6,855          | 17,838,985         | 0.0148        | 0.0384%         |
| J.P MORGAN SECURITIES INC, NEW YORK      | 197,832           | 6,196          | 20,684,675         | 0.0313        | 0.0300%         |
| J.P. MORGAN CLEARING CORP, NEW YORK      | 19,485            | 400            | 586,963            | 0.0205        | 0.0681%         |
| JANNEY MONTGOMERY SCOTT, PHILADELPHIA    | 13,355            | 534            | 2,328,948          | 0.0400        | 0.0229%         |
| JEFFERIES & CO INC, NEW YORK             | 14,685            | 447            | 580,147            | 0.0305        | 0.0771%         |
| JONESTRADING INST SVCS LLC, NEW YORK     | 123,700           | 3,711          | 5,770,254          | 0.0300        | 0.0643%         |
| KEEFE BRUYETTE + WOODS INC, NEW YORK     | 26,140            | 1,046          | 1,085,369          | 0.0400        | 0.0963%         |
| KEYBANC CAPITAL MARKETS INC, NEW YORK    | 3,250             | 130            | 463,592            | 0.0400        | 0.0280%         |
| KNIGHT CLEARING SERVICES LLC, JERSEY CIT | 23,579            | 707            | 814,208            | 0.0300        | 0.0869%         |
| KNIGHT EQUITY MARKETS LP, NEW YORK       | 527,674           | 15,830         | 11,054,556         | 0.0300        | 0.1432%         |
| LEERINK SWANN AND COMPANY, NEW YORK      | 6,820             | 273            | 662,536            | 0.0400        | 0.0412%         |
| LIQUIDNET INC, NEW YORK                  | 2,413,171         | 34,603         | 88,457,917         | 0.0143        | 0.0391%         |
| MERRILL LYNCH PIERCE FENNER SMITH INC NY | 469,653           | 15,668         | 15,524,736         | 0.0334        | 0.1009%         |
| MERRILL LYNCH PROFESSIONAL CLRG, PURCHAS | 9,240             | 370            | 763,053            | 0.0400        | 0.0484%         |
| MORGAN STANLEY & CO INC, NY              | 112,255           | 4,385          | 4,687,190          | 0.0391        | 0.0935%         |
| NATIONAL FINL SVCS CORP, NEW YORK        | 87,835            | 3,096          | 3,260,554          | 0.0352        | 0.0949%         |
| NEEDHAM AND CO LLC, NEW YORK             | 30,695            | 921            | 1,459,477          | 0.0300        | 0.0631%         |
| O NEIL WILLIAM CO INC BCC CLRG, NEW YORK | 64,340            | 2,574          | 2,764,042          | 0.0400        | 0.0931%         |
| OPPENHEIMER & CO INC, NEW YORK           | 3,560             | 142            | 109,775            | 0.0400        | 0.1297%         |
| PERSHING LLC, JERSEY CITY                | 42,270            | 1,691          | 707,117            | 0.0400        | 0.2391%         |
| RAYMOND JAMES & ASSOC INC, ST PETERSBURG | 99,370            | 3,975          | 2,818,553          | 0.0400        | 0.1410%         |
| RBC CAPITAL MARKETS LLC, NEW YORK        | 22,265            | 167            | 408,088            | 0.0075        | 0.0409%         |
| STIFEL NICOLAUS                          | 72,579            | 2,172          | 2,990,877          | 0.0299        | 0.0726%         |
| SUNTRUST CAPITAL MARKETS INC, NEW YORK   | 117,705           | 3,837          | 4,754,068          | 0.0326        | 0.0807%         |
| UBS SECURITIES LLC, STAMFORD             | 807,329           | 10,925         | 41,064,170         | 0.0135        | 0.0266%         |
| WEEDEN & CO, NEW YORK                    | 351,068           | 10,532         | 12,770,556         | 0.0300        | 0.0825%         |
| WELLS FARGO SECURITIES LLC, CHARLOTTE    | 14,980            | 599            | 1,498,283          | 0.0400        | 0.0400%         |
| WELLS FARGO SECURITIES, LLC, NEW YORK    | 111,608           | 3,571          | 5,639,446          | 0.0320        | 0.0633%         |
| WOLFE TRAHAN SECURITIES, NEW YORK        | 18,140            | 726            | 593,792            | 0.0400        | 0.1222%         |
| <b>TOTAL DOMESTIC</b>                    | <b>11,782,855</b> | <b>252,148</b> | <b>437,716,695</b> | <b>0.0214</b> | <b>0.0576%</b>  |

| Broker/Account    | Shares Traded | Commission | Value of Trade | Per Share | % Cost of Trade |
|-------------------|---------------|------------|----------------|-----------|-----------------|
| COLUMBIA          | (209)         | 1,379      | 51,837         | -6.5958   | 2.6593%         |
| INST VEN PTRN XI  | 2,452         | 25         | 29,484         | 0.0100    | 0.0832%         |
| INST VEN PTRN XII | 126,171       | 1,262      | 1,518,000      | 0.0100    | 0.0831%         |
| NTGI STRUCTURED   | 120,849       | 1,208      | 3,223,350      | 0.0100    | 0.0375%         |
| RIVER ROAD        | 135,623       | 3,654      | 5,262,745      | 0.0269    | 0.0694%         |

|                       |                   |                |                    |               |                |
|-----------------------|-------------------|----------------|--------------------|---------------|----------------|
| RIVER ROAD FAV        | 2,880,888         | 83,444         | 53,151,426         | 0.0290        | 0.1570%        |
| S&P 500 INDEX         | 472,967           | 3,548          | 33,956,039         | 0.0075        | 0.0105%        |
| SYSTEMATIC            | 6,026,873         | 93,815         | 223,723,163        | 0.0156        | 0.0419%        |
| TORTOISE CAP          | 152,319           | 1,551          | 4,878,095          | 0.0102        | 0.0318%        |
| WARBURG PINCUS PE X   | 7,630             | 76             | 280,238            | 0.0100        | 0.0272%        |
| WESTFIELD CAPITAL     | 1,857,292         | 62,186         | 111,642,318        | 0.0335        | 0.0557%        |
| <b>TOTAL DOMESTIC</b> | <b>11,782,855</b> | <b>252,148</b> | <b>437,716,695</b> | <b>0.0214</b> | <b>0.0576%</b> |

| <b>Kentucky Retirement Systems</b>              |  |  |  |  |  |
|---|--|--|--|--|--|
| <b>Global Equity - Common Stock Commissions</b> |  |  |  |  |  |
| <b>Quarter Ended December 31, 2017</b>          |  |  |  |  |  |

| Broker/Account                           | Shares Traded | Commission | Value of Trade | Per Share | % Cost of Trade |
|--|---------------|------------|----------------|-----------|-----------------|
| ABG SECS, OSLO                           | 14,450        | 84         | 59,571         | 0.0058    | 0.1402%         |
| AUTONOMOUS LLP, LONDON                   | 34,495        | 1,534      | 1,096,967      | 0.0445    | 0.1398%         |
| BANCO ITAU, SAO PAULO                    | 86,100        | 3,184      | 1,595,150      | 0.0370    | 0.1996%         |
| BARCLAYS CAPITAL LE, NEW YORK            | 42,900        | 1,611      | 3,319,408      | 0.0376    | 0.0485%         |
| BARCLAYS CAPITAL, LONDON (BARCGB33)      | 388,566       | 6,817      | 8,246,053      | 0.0175    | 0.0827%         |
| BERENBERG GOSSLER & CIE, HAMBURG         | 129,761       | 2,687      | 1,852,146      | 0.0207    | 0.1451%         |
| BNP PARIBAS PEREGRINE SEC LTD, HONG KONG | 85,000        | 4,381      | 3,646,224      | 0.0515    | 0.1201%         |
| BNP PARIBAS SEC SRVS SA, SINGAPORE       | 38,300        | 974        | 1,218,819      | 0.0254    | 0.0799%         |
| BNP PARIBAS SEC SVCS, LONDON (PARBGB2L)  | 16,351        | 3,552      | 2,958,461      | 0.2172    | 0.1200%         |
| BNY CONVERGEX EXECUTION SOL, NEW YORK    | 200,000       | 1,862      | 2,675,601      | 0.0093    | 0.0696%         |
| CARNEGIE ASA, OSLO                       | 168,334       | 417        | 695,303        | 0.0025    | 0.0600%         |
| CITIGROUP GBL MKTS INC, NEW YORK         | 37,400        | 874        | 3,334,938      | 0.0234    | 0.0262%         |
| CITIGROUP GBL MKTS/SALOMON, NEW YORK     | 328,196       | 11,225     | 10,643,548     | 0.0342    | 0.1055%         |
| CITIGROUP GLOBAL MARKETS LTD, LONDON     | 110,000       | 3,093      | 2,610,018      | 0.0281    | 0.1185%         |
| CREDIT LYONNAIS SECS (ASIA), HONG KONG   | 190,000       | 2,454      | 2,761,301      | 0.0129    | 0.0889%         |
| CREDIT SUISSE (EUROPE), LONDON           | 614,912       | 13,254     | 21,264,933     | 0.0216    | 0.0623%         |
| CREDIT SUISSE (HK) LIMITED, HONG KONG    | 68,400        | 3,289      | 2,986,871      | 0.0481    | 0.1101%         |
| CREDIT SUISSE, NEW YORK (CSUS)           | 357,032       | 7,701      | 11,445,087     | 0.0216    | 0.0673%         |
| DAIWA SECS AMER INC, NEW YORK            | 44,200        | 2,049      | 2,051,414      | 0.0464    | 0.0999%         |
| DEUTSCHE BANK AG (GFI), LONDON           | 1,834,000     | 11         | 33,974         | 0.0000    | 0.0332%         |
| DEUTSCHE BK SECS INC, NY (NWSCUS33)      | 504,849       | 14,011     | 16,294,518     | 0.0278    | 0.0860%         |
| DEUTSCHE MORGAN GRENPELL SEC, SYDNEY     | 2,302         | 349        | 317,187        | 0.1517    | 0.1101%         |
| GOLDMAN SACHS & CO, NY                   | 2,994,609     | 28,897     | 25,770,240     | 0.0096    | 0.1121%         |
| HONG KONG & SHANGHAI BKG CORP, HONG KONG | 11,000        | 1,055      | 601,043        | 0.0959    | 0.1755%         |
| HSBC BANK PLC (MIDLAND BK)(JAC), LONDON  | 73,000        | 76         | 255,458        | 0.0010    | 0.0298%         |
| INSTINET EUROPE LIMITED, LONDON          | 54,718        | 1,665      | 2,773,117      | 0.0304    | 0.0600%         |
| INVESTMENT TECHNOLOGY GROUP LTD,DUBLIN   | 982,450       | 10,284     | 13,431,702     | 0.0105    | 0.0766%         |
| ITG AUSTRALIA LTD, MELBOURNE             | 3,600         | 534        | 485,065        | 0.1484    | 0.1101%         |
| J P MORGAN SEC LTD/STOCK LENDING, LONDON | 51,875        | 2,203      | 5,510,451      | 0.0425    | 0.0400%         |
| J P MORGAN SECS LTD, LONDON              | 385,819       | 15,762     | 16,038,984     | 0.0409    | 0.0983%         |
| J.P. MORGAN CLEARING CORP, NEW YORK      | 155,000       | 3,875      | 4,513,153      | 0.0250    | 0.0859%         |
| JEFFERIES & CO INC, NEW YORK             | 20,300        | 1,020      | 850,862        | 0.0502    | 0.1199%         |
| JEFFERIES & CO LTD, LONDON               | 310,203       | 6,237      | 5,253,076      | 0.0201    | 0.1187%         |
| JEFFERIES HONG KONG LIMITED, HONG KONG   | 261,600       | 3,619      | 2,061,935      | 0.0138    | 0.1755%         |
| JM MORGAN STANLEY SECURITIES, MUMBAI     | 449,700       | 824        | 1,645,645      | 0.0018    | 0.0501%         |
| JP MORGAN BROKING (HK) LTD, HONG KONG    | 32,800        | 587        | 1,465,914      | 0.0179    | 0.0401%         |
| KNIGHT CLEARING SERVICES LLC, JERSEY CIT | 179,000       | 3,133      | 3,097,665      | 0.0175    | 0.1011%         |
| KNIGHT SECS, NEW JERSEY                  | 7,500         | 148        | 838,088        | 0.0198    | 0.0177%         |
| LIQUIDNET CANADA INC, TORONTO            | 8,100         | 126        | 146,011        | 0.0156    | 0.0866%         |
| LIQUIDNET INC, NEW YORK                  | 47,766        | 478        | 1,909,853      | 0.0100    | 0.0250%         |
| MERRILL LYNCH INTL LONDON EQUITIES       | 4,054,237     | 25,669     | 26,702,872     | 0.0063    | 0.0961%         |
| MERRILL LYNCH PIERCE FENNER SMITH INC NY | 143,616       | 3,303      | 7,584,570      | 0.0230    | 0.0435%         |
| MERRILL LYNCH PIERCE FENNER, WILMINGTON  | 435,000       | 2,115      | 2,852,142      | 0.0049    | 0.0742%         |
| MIZUHO SECURITIES USA INC. NEW YORK      | 12,200        | 482        | 602,518        | 0.0395    | 0.0799%         |
| MORGAN STANLEY & CO INC, NY              | 1,070,126     | 18,563     | 24,178,369     | 0.0173    | 0.0768%         |
| NATIONAL FINANCIAL SERVICES LLC, BOSTON  | 9,400         | 219        | 163,972        | 0.0233    | 0.1336%         |
| NBCN INC, TORONTO (NBCS)                 | 108,700       | 1,273      | 249,471        | 0.0117    | 0.5103%         |
| NESBITT BURNS, TORONTO (NTDT)            | 14,100        | 164        | 247,812        | 0.0117    | 0.0663%         |
| NORDEA BK PLC, HELSINKI (NDEAFIHH030)    | 5,066         | 313        | 224,110        | 0.0618    | 0.1398%         |

|   |           |        |            |        |         |
|---|-----------|--------|------------|--------|---------|
| ODDO ET CIE, PARIS                      | 3,295     | 337    | 240,720    | 0.1024 | 0.1402% |
| OLIVETREE SECURITIES LTD, LONDON        | 70,000    | 1,314  | 1,878,310  | 0.0188 | 0.0700% |
| PERSHING LLC, JERSEY CITY               | 9,394     | 2,514  | 2,092,378  | 0.2676 | 0.1201% |
| PERSHING SECURITIES LTD, LONDON         | 152,980   | 3,895  | 3,801,124  | 0.0255 | 0.1025% |
| RBC CAPITAL MARKETS LLC, NEW YORK       | 11,000    | 55     | 927,132    | 0.0050 | 0.0059% |
| RBC DOMINION SECS INC, TORONTO (DOMA)   | 464,700   | 5,585  | 2,695,149  | 0.0120 | 0.2072% |
| ROYAL BANK OF CANADA EUROPE LTD, LONDON | 65,510    | 1,680  | 1,689,288  | 0.0257 | 0.0995% |
| SANFORD C BERNSTEIN & CO INC, LONDON    | 301,527   | 2,088  | 5,219,683  | 0.0069 | 0.0400% |
| SG SEC (LONDON) LTD, LONDON             | 310,124   | 2,163  | 2,699,785  | 0.0070 | 0.0801% |
| SKANDINAVISKA ENSKILDA BANKEN, LONDON   | 46,561    | 2,791  | 2,041,268  | 0.0599 | 0.1367% |
| SMBC SECURITIES, INC NEW YORK           | 177,900   | 7,608  | 7,589,299  | 0.0428 | 0.1002% |
| SOCIETE GENERALE LONDON BRANCH, LONDON  | 1,024,836 | 10,214 | 17,040,575 | 0.0100 | 0.0599% |
| TROIKA DIALOG USA, NEW YORK             | (22,123)  | (625)  | (625,536)  | 0.0282 | 0.0999% |
| UBS EQUITIES, LONDON                    | 578,599   | 1,619  | 2,699,366  | 0.0028 | 0.0600% |
| UBS SECURITIES LLC, STAMFORD            | 118,500   | 2,055  | 1,371,832  | 0.0173 | 0.1498% |
| UBS WARBURG ASIA LTD, HONG KONG         | 134,300   | 4,133  | 3,801,389  | 0.0308 | 0.1087% |
| UBS WARBURG, LONDON                     | 1,923,602 | 16,404 | 16,616,547 | 0.0085 | 0.0987% |

|              |            |         |             |        |         |
|--------------|------------|---------|-------------|--------|---------|
| TOTAL GLOBAL | 22,547,738 | 281,865 | 322,339,899 | 0.0125 | 0.0874% |
|--------------|------------|---------|-------------|--------|---------|

| Broker/Account       | Shares Traded | Commission | Value of Trade | Per Share | % Cost of Trade |
|----------------------|---------------|------------|----------------|-----------|-----------------|
| AMERICAN CENTURY     | 5,036,472     | 87,635     | 119,640,338    | 0.0174    | 0.0732%         |
| FRANKIN TEMPLETON    | 5,231,311     | 88,954     | 88,898,596     | 0.0170    | 0.1001%         |
| LAZARD ASSET MGMT    | 7,357,256     | 99,098     | 106,655,237    | 0.0135    | 0.0929%         |
| LSV ASSET MANAGEMENT | 3,076,564     | 2,309      | 5,234,799      | 0.0008    | 0.0441%         |
| MANULIFE ASSET MGMT  | 1,846,135     | 3,870      | 1,910,929      | 0.0021    | 0.2025%         |
| TOTAL GLOBAL         | 22,547,738    | 281,866    | 322,339,898    | 0.0125    | 0.0874%         |