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Firefighters' Retirement System of Louisiana

Investment Market Update
(As of December 31, 2015)

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Market Commentary – December 2015

Market Environment

Global equities ended 2015 with a whimper as investors stayed on the sidelines while central banks in Europe and the US provided guidance on monetary policy. At home, the Federal Reserve raised rates, putting its target rate from 25-to-50 basis points. The anticipated move was well received by US markets which received a modest mid-month boost. That said, the S&P 500 fell 1.6% as a strong US dollar cut into profit margins and triggered a slowdown in manufacturing. Small-cap stocks bore the brunt, with the Russell 2000 declining 5.0% amid risk aversion. In Europe, losses were largely driven by the European Central Bank's decision last month to extend its bond-buying program by six months and cut its deposit rate by 10 basis points. Despite the seemingly accommodative action most investors expected more and the MSCI EAFE fell 1.3%. Emerging market equities continued to struggle amid growth and currency concerns as the MSCI EM declined 2.2%.

In fixed-income markets, a modest increase in the 10-year Treasury rate spurred moderate losses in high-quality issues with the Barclays US Aggregate Bond Index falling 0.3%. US high-yield markets remained strained by low energy prices and declined another 2.5% in December. Emerging market debt struggled as the JPM GBI-EM Global Diversified Index fell 2.2% partly due to continued currency weakness. Commodity prices, especially oil, stayed low with the Bloomberg Commodity Index losing 3.1%; future roll yields remain largely negative too.

Market Outlook

Coming off a year in which few traditional assets met their return expectations—and many disappointed—we recommend investors reaffirm commitments to suit their long-term goals. Within equities, we still recommend an overweight to non-US developed markets, where monetary easing provides a backdrop for recovery and earnings growth. Though we are positive on emerging market equities, we recognize a number of near-term risks and believe investors are well served by moving down the capitalization spectrum and into dynamic active managers. Lastly, we believe patient capital will reap the benefits of distress in the energy market and, in the interim, recommend a focus on segments of the public markets offering a positive yield when seeking inflation protection.



NEPC, LLC

December 31, 2015

Firefighters' Retirement System of Louisiana

Investment Performance Flash Report

December 31, 2015

| | Market Value (\$) | Policy % | % of Portfolio | 1 Mo (%) | 3 Mo (%) | Fiscal YTD (%) | YTD (%) | 1 Yr (%) | 3 Yrs (%) | 5 Yrs (%) | 10 Yrs (%) | Return (%) | Since |
|--|-------------------|------------|----------------|------------|------------|----------------|------------|------------|------------|------------|------------|------------|---------------|
| Real Estate Composite | 93,282,421 | 7.0 | 7.1 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 | 5.6 | 5.6 | -- | 4.8 | Dec-09 |
| NCREIF Property Index | | | | 0.0 | 0.0 | 3.1 | 10.1 | 10.1 | 11.0 | 11.5 | 7.4 | 11.2 | Dec-09 |
| Americus Fund II (\$13,168,000) | 6,226,994 | 0.5 | | 0.0 | 0.0 | 0.0 | 2.3 | 2.3 | 3.6 | 4.7 | 8.3 | 8.3 | Dec-05 |
| Sentinel Real Estate Fund (\$30,000,000) | 32,453,468 | 2.5 | | 0.0 | 0.0 | 0.0 | 5.5 | 5.5 | 11.9 | 18.5 | -- | 5.5 | Feb-06 |
| JP Morgan India (\$8,990,000) | 5,821,440 | 0.4 | | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | -3.0 | -1.3 | -- | -13.5 | Apr-07 |
| Timbervest Crossover Fund (\$16,000,000) | 11,486,413 | 0.9 | | 0.0 | 0.0 | 0.0 | 1.3 | 1.3 | 1.1 | 1.1 | -- | 0.8 | Apr-08 |
| AEW Partners VI LP (\$20,000,000) | 10,433,034 | 0.8 | | 0.0 | 0.0 | 0.0 | 4.8 | 4.8 | 14.0 | 14.0 | -- | 12.1 | Mar-10 |
| AEW Core Property (\$12,000,000) | 12,346,555 | 0.9 | | 0.0 | 0.0 | 0.0 | -- | -- | -- | -- | -- | 2.9 | May-15 |
| FRS-GA (Georgia) | 4,754,758 | 0.4 | | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | -4.5 | -3.1 | -- | -8.9 | Jun-08 |
| FRS-LB I (NLTP AZ) | 4,482,019 | 0.3 | | 0.0 | 0.0 | 0.0 | 4.5 | 4.5 | 1.5 | -25.8 | -- | -20.4 | Jun-07 |
| FRS-LB III (ST George UT) | 5,277,740 | 0.4 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -- | 1.7 | Jun-08 |
| Total Cash (\$9 MM) | 18,810,858 | -- | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.5 | 3.0 | Jun-92 |
| 91 Day T-Bills | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 2.6 | Jun-92 |

Results for periods longer than one year are annualized. Results are preliminary and subject to change.

Fiscal YTD ends June 30th.

Real Estate valuations are as of 6/30/2015 adjusted for cash flows.

FRS - LB I is part of the Real Estate Composite as of 12/1/2012.



NEPC, LLC

December 31, 2015

Firefighters' Retirement System of Louisiana

Current Monthly Breakdown of Change in Value

December 31, 2015

Total Cash Flow Summary

Month Ending December 31, 2015

| | Beginning Market Value | Withdrawals | Contributions | Net Cash Flow | Fees | Net Investment Change | Ending Market Value |
|---|------------------------|--------------|---------------|---------------|-----------|-----------------------|---------------------|
| Acadian Emerging Markets Equity | \$33,745,362 | \$0 | \$0 | \$0 | \$0 | -\$841,471 | \$32,903,891 |
| Advisory Research SMID | \$34,385,537 | \$0 | \$0 | \$0 | \$0 | -\$2,257,223 | \$32,128,314 |
| AEW Core Property (\$12,000,000) | \$12,346,555 | \$0 | \$0 | \$0 | \$0 | \$0 | \$12,346,555 |
| AEW Partners VI LP (\$20,000,000) | \$11,365,569 | -\$932,535 | \$0 | -\$932,535 | \$0 | \$0 | \$10,433,034 |
| Americus Fund II (\$13,168,000) | \$13,417,616 | -\$7,190,622 | \$0 | -\$7,190,622 | \$0 | \$0 | \$6,226,994 |
| AQR Global Risk Premium – EL | \$38,388,992 | \$0 | \$0 | \$0 | \$0 | -\$1,265,345 | \$37,123,647 |
| Blackrock Global Allocation | \$69,332,388 | \$0 | \$0 | \$0 | \$0 | -\$673,696 | \$68,658,692 |
| BlackRock Global Focused | \$48,741,297 | \$0 | \$0 | \$0 | -\$45,050 | -\$1,332,835 | \$47,408,462 |
| Blackrock US Debt | \$140,883,080 | \$0 | \$0 | \$0 | \$0 | -\$461,158 | \$140,421,922 |
| CA Recovery Fund LLC | \$1,031,061 | \$0 | \$0 | \$0 | \$0 | \$0 | \$1,031,061 |
| Cash/Clearing Account | \$7,414,611 | -\$3,262,508 | \$10,287,377 | \$7,024,870 | \$0 | \$693 | \$14,440,173 |
| CCMP Capital Investors III (\$15,000,000) | \$7,480,238 | \$0 | \$0 | \$0 | \$0 | \$0 | \$7,480,238 |
| Commonwealth | \$399,017 | \$0 | \$0 | \$0 | \$0 | \$0 | \$399,017 |
| DCM Private Equity II (\$7,500,000) | \$3,741,637 | -\$184,713 | \$0 | -\$184,713 | \$0 | \$0 | \$3,556,924 |
| DTC Private Equity II-Q, L.P. (\$7,500,000) | \$3,838,204 | -\$375,000 | \$0 | -\$375,000 | \$0 | \$0 | \$3,463,204 |
| Energy Opportunities Fund | \$22,949,013 | \$0 | \$0 | \$0 | \$0 | -\$2,681,303 | \$20,267,710 |
| FECP II (\$20,000,000) | \$1,658,129 | \$0 | \$0 | \$0 | \$0 | \$0 | \$1,658,129 |
| FECP III (\$20,000,000) | \$3,023,967 | \$0 | \$0 | \$0 | \$0 | \$0 | \$3,023,967 |
| Fisher All Foreign Equity | \$75,084,388 | \$0 | \$0 | \$0 | \$0 | -\$1,306,950 | \$73,777,438 |
| FRS-GA (Georgia) | \$4,754,758 | \$0 | \$0 | \$0 | \$0 | \$0 | \$4,754,758 |
| FRS-LB I (NLTP AZ) | \$4,482,019 | \$0 | \$0 | \$0 | \$0 | \$0 | \$4,482,019 |
| FRS-LB III (ST George UT) | \$5,277,740 | \$0 | \$0 | \$0 | \$0 | \$0 | \$5,277,740 |
| GA Crossover Fund (\$25,000,000) | \$10,922,939 | -\$402,694 | \$0 | -\$402,694 | \$0 | \$0 | \$10,520,245 |
| Greenspring Associates (\$9,230,000) | \$7,615,470 | -\$584,787 | \$0 | -\$584,787 | \$0 | \$0 | \$7,030,683 |
| JP Morgan India (\$8,990,000) | \$5,821,440 | \$0 | \$0 | \$0 | \$0 | \$0 | \$5,821,440 |

Firefighters' Retirement System of Louisiana

Current Monthly Breakdown of Change in Value

December 31, 2015

| | Month Ending December 31, 2015 | | | | | | |
|--|--------------------------------|----------------------|---------------------|---------------------|-------------------|-----------------------|------------------------|
| | Beginning Market Value | Withdrawals | Contributions | Net Cash Flow | Fees | Net Investment Change | Ending Market Value |
| KBI Water Fund | \$20,543,621 | \$0 | \$0 | \$0 | -\$10,495 | -\$1,168,969 | \$19,374,652 |
| Landmark Equity Partners XV (\$25,000,000) | \$7,214,227 | -\$217,685 | \$263,318 | \$45,633 | \$0 | \$0 | \$7,259,860 |
| Louisiana Asset Management Pool | \$4,369,860 | \$0 | \$0 | \$0 | \$0 | \$825 | \$4,370,685 |
| Louisiana Fund I (\$1,000,000) | \$2,087,160 | \$0 | \$0 | \$0 | \$0 | \$0 | \$2,087,160 |
| LSV International Equity Value | \$70,919,628 | \$0 | \$0 | \$0 | \$0 | -\$1,428,156 | \$69,491,472 |
| Mellon Stock Index Fund | \$298,220,753 | \$0 | \$0 | \$0 | \$0 | -\$4,710,413 | \$293,510,340 |
| Murphree Venture (\$2,000,000) | \$1,530,457 | \$0 | \$0 | \$0 | \$0 | \$0 | \$1,530,457 |
| OFI Emerging Markets | \$19,532,199 | \$0 | \$0 | \$0 | -\$13,698 | -\$418,067 | \$19,114,132 |
| Orleans Core Fixed Income | \$63,336,226 | \$0 | \$0 | \$0 | \$0 | -\$328,360 | \$63,007,866 |
| Putnam Risk Parity | \$25,994,883 | \$0 | \$0 | \$0 | \$0 | -\$820,248 | \$25,174,635 |
| Rothschild U.S. SMID Core | \$53,465,595 | \$0 | \$0 | \$0 | -\$86,235 | -\$2,227,230 | \$51,238,365 |
| Sand Spring Capital III | \$775 | \$0 | \$0 | \$0 | \$0 | \$0 | \$775 |
| Sentinel Real Estate Fund (\$30,000,000) | \$32,453,468 | \$0 | \$0 | \$0 | \$0 | \$0 | \$32,453,468 |
| Standish | \$50,377,434 | \$0 | \$0 | \$0 | \$0 | -\$919,729 | \$49,457,705 |
| Stone Harbor | \$46,435,463 | \$0 | \$0 | \$0 | -\$31,967 | -\$1,305,415 | \$45,130,049 |
| The Clinton Group Magnolia | \$98,663 | -\$79,341 | \$0 | -\$79,341 | \$0 | \$0 | \$19,322 |
| Thornburg Global Opportunities | \$67,488,894 | \$0 | \$0 | \$0 | -\$96,268 | -\$604,834 | \$66,884,060 |
| Timbervest Crossover Fund (\$16,000,000) | \$11,806,413 | -\$320,000 | \$0 | -\$320,000 | \$0 | \$0 | \$11,486,413 |
| Total | \$1,343,976,745 | -\$13,549,885 | \$10,550,695 | -\$2,999,190 | -\$283,713 | -\$24,749,885 | \$1,316,227,671 |

Beginning Market Value may not match the Ending Market Value of the previous Flash report due to delayed reporting of private investments (private equity and real estate).



NEPC, LLC

December 31, 2015

Firefighters' Retirement System of Louisiana

Since Inception Breakdown of Change in Value

Total Cash Flow Summary

| | Beginning Market Value | Withdrawals | Contributions | Net Cash Flow | Net Investment Change | Ending Market Value |
|---|---------------------------|------------------|-----------------|---------------|--------------------------|------------------------|
| | Ending December 31, 2015 | | | | | |
| Acadian Emerging Markets Equity | -- | \$0 | \$40,000,000 | \$40,000,000 | -\$7,096,109 | \$32,903,891 |
| Advisory Research SMID | -- | -\$42,800,000 | \$34,937,469 | -\$7,862,531 | \$39,990,845 | \$32,128,314 |
| AEW Core Property (\$12,000,000) | -- | \$0 | \$12,000,000 | \$12,000,000 | \$346,555 | \$12,346,555 |
| AEW Partners VI LP (\$20,000,000) | -- | -\$16,539,762 | \$18,420,450 | \$1,880,688 | \$8,552,346 | \$10,433,034 |
| Americus Fund II (\$13,168,000) | -- | -\$14,482,170 | \$12,044,774 | -\$2,437,396 | \$8,664,390 | \$6,226,994 |
| AQR Global Risk Premium – EL | -- | \$0 | \$40,100,000 | \$40,100,000 | -\$2,976,353 | \$37,123,647 |
| Blackrock Global Allocation | -- | \$0 | \$66,968,808 | \$66,968,808 | \$1,689,884 | \$68,658,692 |
| BlackRock Global Focused | -- | -\$14,054,982 | \$46,831,964 | \$32,776,982 | \$14,631,480 | \$47,408,462 |
| Blackrock US Debt | -- | -\$50,000,000 | \$188,509,663 | \$138,509,663 | \$1,912,259 | \$140,421,922 |
| CA Recovery Fund LLC | -- | -\$11,071,914 | \$0 | -\$11,071,914 | \$12,102,976 | \$1,031,061 |
| Cash/Clearing Account | -- | -\$1,718,836,368 | \$1,730,180,209 | \$11,343,841 | \$3,096,332 | \$14,440,173 |
| CCMP Capital Investors III (\$15,000,000) | -- | -\$129,294 | \$7,330,124 | \$7,200,830 | \$279,408 | \$7,480,238 |
| Commonwealth | -- | -\$9,199,660 | \$30,000,000 | \$20,800,340 | -\$20,401,322 | \$399,017 |
| DCM Private Equity II (\$7,500,000) | -- | -\$5,316,549 | \$8,294,920 | \$2,978,370 | \$578,554 | \$3,556,924 |
| DTC Private Equity II-Q, L.P. (\$7,500,000) | -- | -\$5,737,500 | \$5,476,825 | -\$260,675 | \$3,723,879 | \$3,463,204 |
| Energy Opportunities Fund | -- | -\$28,002,876 | \$50,000,000 | \$21,997,124 | -\$1,729,414 | \$20,267,710 |
| FECP II (\$20,000,000) | -- | -\$21,500,400 | \$19,188,998 | -\$2,311,402 | \$3,969,531 | \$1,658,129 |
| FECP III (\$20,000,000) | -- | -\$28,118,396 | \$19,278,952 | -\$8,839,444 | \$11,863,411 | \$3,023,967 |
| Fisher All Foreign Equity | -- | -\$55,165,618 | \$87,000,000 | \$31,834,383 | \$41,943,055 | \$73,777,438 |
| FRS-GA (Georgia) | -- | \$0 | \$9,416,075 | \$9,416,075 | -\$4,661,317 | \$4,754,758 |
| FRS-LB I (NLTP AZ) | -- | \$0 | \$24,900,208 | \$24,900,208 | -\$20,418,189 | \$4,482,019 |
| FRS-LB III (ST George UT) | -- | \$0 | \$4,646,040 | \$4,646,040 | \$631,700 | \$5,277,740 |
| GA Crossover Fund (\$25,000,000) | -- | -\$36,999,811 | \$25,000,000 | -\$11,999,811 | \$22,520,056 | \$10,520,245 |
| Greenspring Associates (\$9,230,000) | -- | -\$9,738,194 | \$8,491,600 | -\$1,246,594 | \$8,277,277 | \$7,030,683 |
| JP Morgan India (\$8,990,000) | -- | -\$1,254,253 | \$8,307,355 | \$7,053,102 | -\$1,231,661 | \$5,821,440 |

Cash flow statistics exclude management fees and expenses.

Firefighters' Retirement System of Louisiana

Since Inception Breakdown of Change in Value

| | Beginning Market Value | | Withdrawals | Contributions | Net Cash Flow | Net Investment Change | Ending Market Value |
|--|---------------------------|--|----------------|---------------------------------|---------------|--------------------------|------------------------|
| | | | | Ending December 31, 2015 | | | |
| KBI Water Fund | -- | | -\$17,000,000 | \$30,000,000 | \$13,000,000 | \$6,374,652 | \$19,374,652 |
| Landmark Equity Partners XV (\$25,000,000) | -- | | -\$2,614,719 | \$8,485,461 | \$5,870,742 | \$1,389,118 | \$7,259,860 |
| Louisiana Asset Management Pool | -- | | -\$944,296,689 | \$943,990,965 | -\$305,724 | \$4,676,409 | \$4,370,685 |
| Louisiana Fund I (\$1,000,000) | -- | | \$0 | \$1,010,000 | \$1,010,000 | \$1,077,160 | \$2,087,160 |
| LSV International Equity Value | -- | | -\$17,281,912 | \$73,500,000 | \$56,218,088 | \$13,273,384 | \$69,491,472 |
| Mellon Stock Index Fund | -- | | -\$35,000,000 | \$275,215,780 | \$240,215,779 | \$53,294,560 | \$293,510,340 |
| Murphree Venture (\$2,000,000) | -- | | -\$848,459 | \$2,058,578 | \$1,210,119 | \$320,338 | \$1,530,457 |
| OFI Emerging Markets | -- | | -\$8,500,000 | \$31,500,000 | \$23,000,000 | -\$3,885,868 | \$19,114,132 |
| Orleans Core Fixed Income | -- | | -\$91,022,995 | \$126,099,081 | \$35,076,086 | \$27,931,780 | \$63,007,866 |
| Putnam Risk Parity | -- | | \$0 | \$27,400,000 | \$27,400,000 | -\$2,225,365 | \$25,174,635 |
| Rothschild U.S. SMID Core | -- | | \$0 | \$55,500,000 | \$55,500,000 | -\$4,261,635 | \$51,238,365 |
| Sand Spring Capital III | -- | | -\$11,992,916 | \$22,000,000 | \$10,007,084 | -\$10,006,310 | \$775 |
| Sentinel Real Estate Fund (\$30,000,000) | -- | | -\$12,055,721 | \$30,000,000 | \$17,944,279 | \$14,509,189 | \$32,453,468 |
| Standish | -- | | \$0 | \$50,000,000 | \$50,000,000 | -\$542,295 | \$49,457,705 |
| Stone Harbor | -- | | \$0 | \$63,000,000 | \$63,000,000 | -\$17,869,951 | \$45,130,049 |
| The Clinton Group Magnolia | -- | | -\$70,565,146 | \$25,000,000 | -\$45,565,146 | \$45,584,468 | \$19,322 |
| Thornburg Global Opportunities | -- | | -\$55,362,310 | \$47,500,000 | -\$7,862,310 | \$74,746,370 | \$66,884,060 |
| Timbervest Crossover Fund (\$16,000,000) | -- | | -\$5,568,000 | \$13,600,000 | \$8,032,000 | \$3,454,413 | \$11,486,413 |

Cash flow statistics exclude management fees and expenses.

Information Disclaimer and Reporting Methodology

Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.