

MIAMI UNIVERSITY
INVESTMENT SUBCOMMITTEE MEETING
Wednesday, December 6, 2017
4 p.m. - 6 p.m.
104 Roudebush Hall
Oxford, OH

AGENDA

Objectives:

1. Review risk and return statistics of various asset allocations
2. Continue discussion of future state

Agenda:

- | | | |
|-------|--|---------------|
| I. | Executive Session - To consult with General Counsel | Budig |
| II. | Asset Allocation Scenario Analysis - Risk & return characteristics | Guiot |
| III. | Governance - Resolution to Amend the Non-endowment Funds Annual Expenditure Policy - Resolution to Amend the Non-endowment Funds Investment Policy | Creamer/Guiot |
| IV. | Performance Review - Non-endowment - Endowment | Guiot |
| V. | Cintrifuse Syndicate Fund II | Creamer/Guiot |
| VI. | OCIO Resolution | Creamer |
| VII. | Endowment Growth Model | Creamer |
| VIII. | Adjourn | |



Non-Endowment Asset Allocation Scenario Analysis

December 2017

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Miami University Foundation

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Nolan Bean, CFA, CAIA
Consultant / Managing Principal



Fund Evaluation Group®
investment advisors

ASSUMPTIONS

- FEG was asked to run a number of portfolio allocations given various fund sizes
 - \$576 million (current balance expectation)
 - \$526 million
 - \$500 million
 - \$400 million
- Miami has previously determined that a fixed amount of \$375 million in liquid and relatively low-volatility Tier 1 and Tier 2 assets was appropriate given the University's operating budget
 - Given this fixed determination, scenarios were run with Long Term Capital (Tier 3) balances ranging in value from approximately \$200 million to as little as \$25 million
- This analysis provides guidance on the return and risk profile of various allocations of the Long Term Pool under each of the four fund sizes outlined above
- A further analysis looks at the risk impact of an immediate \$50 million withdrawal coming from the more liquid Tier 2

ASSET ALLOCATION SCENARIO - \$576 MILLION POOL

| Broad Allocation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
|-----------------------------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Tier 1 | 31.0 | 100.0 | 0.0 | 54.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| Cash | 8.2 | 30.0 | 0.0 | 16.2 | 11.0 | 11.0 | 11.0 | 11.0 |
| Short Term Government Bonds | 22.8 | 70.0 | 0.0 | 37.8 | 24.0 | 24.0 | 24.0 | 24.0 |
| Tier 2 | 20.7 | 0.0 | 100.0 | 46.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| Investment Grade Bonds | 15.5 | 0.0 | 70.0 | 32.2 | 21.0 | 21.0 | 21.0 | 21.0 |
| Bank Loans | 5.2 | 0.0 | 30.0 | 13.8 | 9.0 | 9.0 | 9.0 | 9.0 |
| Tier 3 - Long Term Capital | 48.3 | 0.0 | 0.0 | 0.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| Global Long Only Equity | 0.0 | 0.0 | 0.0 | 0.0 | 33.2 | 28.2 | 18.2 | 8.2 |
| Internal Loans | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 1.8 | 1.8 | 1.8 |
| Real Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 5.0 | 5.0 |
| Absolute Return | 46.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 20.0 |
| | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| Risk (StdDev Rtn), % | 5.4 | 3.8 | 6.2 | 3.9 | 8.1 | 7.8 | 6.8 | 6.0 |
| Sharpe Ratio | 0.48 | -0.02 | 0.35 | 0.27 | 0.40 | 0.42 | 0.44 | 0.45 |
| Maximum Drawdown | -8.9 | -7.5 | -11.1 | -6.8 | -14.5 | -13.7 | -11.6 | -10.1 |
| 10 Year - Monte Carlo Simulation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| 5th Percentile | 1.0 | -0.6 | 0.2 | 0.4 | 0.3 | 0.5 | 0.8 | 0.9 |
| 25th Percentile | 2.6 | 0.5 | 2.1 | 1.5 | 2.6 | 2.7 | 2.7 | 2.6 |
| 50th Percentile | 3.7 | 1.3 | 3.4 | 2.3 | 4.4 | 4.4 | 4.2 | 3.9 |
| 75th Percentile | 4.9 | 2.2 | 4.8 | 3.2 | 6.0 | 6.0 | 5.6 | 5.1 |
| 95th Percentile | 6.6 | 3.4 | 6.7 | 4.4 | 8.5 | 8.4 | 7.7 | 7.0 |
| Probability of Earning > 0% | | | | | | | | |
| 5 year | 94.5 | 78.9 | 88.7 | 91.1 | 89.4 | 90.5 | 92.3 | 93.2 |
| 1 year | 75.2 | 63.7 | 70.7 | 72.6 | 70.1 | 71.5 | 73.1 | 74.2 |
| Liquidity | | | | | | | | |
| Liquid | 47 | 100 | 70 | 86 | 89 | 89 | 79 | 69 |
| Semi-Liquid | 52 | 0 | 30 | 14 | 9 | 9 | 19 | 29 |
| Illiquid | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 2 |

ASSET ALLOCATION SCENARIO - \$526 MILLION POOL

| Broad Allocation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
|-----------------------------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Tier 1 | 31.0 | 100.0 | 0.0 | 54.0 | 38.0 | 38.0 | 38.0 | 38.0 |
| Cash | 8.2 | 30.0 | 0.0 | 16.2 | 11.4 | 11.4 | 11.4 | 11.4 |
| Short Term Government Bonds | 22.8 | 70.0 | 0.0 | 37.8 | 26.6 | 26.6 | 26.6 | 26.6 |
| Tier 2 | 20.7 | 0.0 | 100.0 | 46.0 | 33.0 | 33.0 | 33.0 | 33.0 |
| Investment Grade Bonds | 15.5 | 0.0 | 70.0 | 32.2 | 23.1 | 23.1 | 23.1 | 23.1 |
| Bank Loans | 5.2 | 0.0 | 30.0 | 13.8 | 9.9 | 9.9 | 9.9 | 9.9 |
| Tier 3 - Long Term Capital | 48.3 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 | 29.0 | 29.0 |
| Global Long Only Equity | 0.0 | 0.0 | 0.0 | 0.0 | 27.0 | 22.0 | 14.0 | 10.0 |
| Internal Loans | 1.8 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Real Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 3.0 | 2.0 |
| Absolute Return | 46.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 15.0 |
| | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| Risk (StdDev Rtn), % | 5.4 | 3.8 | 6.2 | 3.9 | 7.0 | 6.7 | 6.0 | 5.6 |
| Sharpe Ratio | 0.48 | -0.02 | 0.35 | 0.27 | 0.40 | 0.42 | 0.43 | 0.44 |
| Maximum Drawdown | -8.9 | -7.5 | -11.1 | -6.8 | -12.4 | -11.6 | -10.1 | -9.4 |
| 10 Year - Monte Carlo Simulation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| 5th Percentile | 1.0 | -0.6 | 0.3 | 0.3 | 0.5 | 0.7 | 0.8 | 0.8 |
| 25th Percentile | 2.6 | 0.5 | 2.1 | 1.5 | 2.5 | 2.6 | 2.5 | 2.5 |
| 50th Percentile | 3.8 | 1.4 | 3.4 | 2.4 | 4.0 | 4.0 | 3.8 | 3.6 |
| 75th Percentile | 4.9 | 2.2 | 4.8 | 3.2 | 5.5 | 5.5 | 5.0 | 4.8 |
| 95th Percentile | 6.6 | 3.4 | 6.6 | 4.4 | 7.6 | 7.5 | 6.8 | 6.5 |
| Probability of Earning > 0% | | | | | | | | |
| 5 year | 94.5 | 78.7 | 89.3 | 91.2 | 90.6 | 91.8 | 92.7 | 93.1 |
| 1 year | 75.9 | 64.3 | 71.7 | 73.0 | 71.4 | 72.6 | 73.9 | 74.3 |
| Liquidity | | | | | | | | |
| Liquid | 47 | 100 | 70 | 86 | 88 | 88 | 78 | 73 |
| Semi-Liquid | 52 | 0 | 30 | 14 | 10 | 10 | 20 | 25 |
| Illiquid | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 2 |

ASSET ALLOCATION SCENARIO - \$500 MILLION POOL

| Broad Allocation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
|-----------------------------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Tier 1 | 31.0 | 100.0 | 0.0 | 54.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Cash | 8.2 | 30.0 | 0.0 | 16.2 | 12.0 | 12.0 | 12.0 | 12.0 |
| Short Term Government Bonds | 22.8 | 70.0 | 0.0 | 37.8 | 28.0 | 28.0 | 28.0 | 28.0 |
| Tier 2 | 20.7 | 0.0 | 100.0 | 46.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| Investment Grade Bonds | 15.5 | 0.0 | 70.0 | 32.2 | 24.5 | 24.5 | 24.5 | 24.5 |
| Bank Loans | 5.2 | 0.0 | 30.0 | 13.8 | 10.5 | 10.5 | 10.5 | 10.5 |
| Tier 3 - Long Term Capital | 48.3 | 0.0 | 0.0 | 0.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Global Long Only Equity | 0.0 | 0.0 | 0.0 | 0.0 | 22.9 | 18.9 | 10.7 | 7.9 |
| Internal Loans | 1.8 | 0.0 | 0.0 | 0.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Real Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 2.2 | 0.0 |
| Absolute Return | 46.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 15.0 |
| | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| Risk (StdDev Rtn), % | 5.4 | 3.8 | 6.2 | 3.9 | 6.4 | 6.2 | 5.4 | 5.1 |
| Sharpe Ratio | 0.48 | -0.02 | 0.35 | 0.27 | 0.40 | 0.42 | 0.43 | 0.42 |
| Maximum Drawdown | -8.9 | -7.5 | -11.1 | -6.8 | -11.1 | -10.5 | -9.0 | -8.6 |
| 10 Year - Monte Carlo Simulation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| 5th Percentile | 1.0 | -0.6 | 0.2 | 0.3 | 0.6 | 0.7 | 0.8 | 0.8 |
| 25th Percentile | 2.6 | 0.6 | 2.1 | 1.5 | 2.4 | 2.5 | 2.4 | 2.3 |
| 50th Percentile | 3.8 | 1.4 | 3.4 | 2.4 | 3.8 | 3.8 | 3.5 | 3.4 |
| 75th Percentile | 4.9 | 2.2 | 4.8 | 3.2 | 5.1 | 5.1 | 4.7 | 4.5 |
| 95th Percentile | 6.6 | 3.4 | 6.7 | 4.4 | 7.1 | 7.0 | 6.4 | 6.1 |
| Probability of Earning > 0% | | | | | | | | |
| 5 year | 94.7 | 78.6 | 89.1 | 91.1 | 91.8 | 92.8 | 93.8 | 93.9 |
| 1 year | 76.5 | 63.9 | 70.9 | 72.9 | 72.4 | 73.2 | 74.8 | 74.8 |
| Liquidity | | | | | | | | |
| Liquid | 47 | 100 | 70 | 86 | 87 | 87 | 77 | 72 |
| Semi-Liquid | 52 | 0 | 30 | 14 | 11 | 11 | 21 | 26 |
| Illiquid | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 2 |

ASSET ALLOCATION SCENARIO - \$400 MILLION POOL

| Broad Allocation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
|-----------------------------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Tier 1 | 31.0 | 100.0 | 0.0 | 54.0 | 50.0 | 50.0 | 50.0 | 50.0 |
| Cash | 8.2 | 30.0 | 0.0 | 16.2 | 15.0 | 15.0 | 15.0 | 15.0 |
| Short Term Government Bonds | 22.8 | 70.0 | 0.0 | 37.8 | 35.0 | 35.0 | 35.0 | 35.0 |
| Tier 2 | 20.7 | 0.0 | 100.0 | 46.0 | 43.0 | 43.0 | 43.0 | 43.0 |
| Investment Grade Bonds | 15.5 | 0.0 | 70.0 | 32.2 | 30.1 | 30.1 | 30.1 | 30.1 |
| Bank Loans | 5.2 | 0.0 | 30.0 | 13.8 | 12.9 | 12.9 | 12.9 | 12.9 |
| Tier 3 - Long Term Capital | 48.3 | 0.0 | 0.0 | 0.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Global Long Only Equity | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 0.0 |
| Internal Loans | 1.8 | 0.0 | 0.0 | 0.0 | 2.6 | 2.6 | 2.6 | 2.6 |
| Real Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Absolute Return | 46.5 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | 4.4 | 4.4 |
| | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| Risk (StdDev Rtn), % | 5.4 | 3.8 | 6.2 | 3.9 | 4.1 | 3.9 | 4.0 | 3.9 |
| Sharpe Ratio | 0.48 | -0.02 | 0.35 | 0.27 | 0.34 | 0.32 | 0.32 | 0.32 |
| Maximum Drawdown | -8.9 | -7.5 | -11.1 | -6.8 | -6.8 | -6.5 | -6.6 | -6.6 |
| 10 Year - Monte Carlo Simulation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| 5th Percentile | 1.0 | -0.6 | 0.3 | 0.3 | 0.6 | 0.6 | 0.5 | 0.6 |
| 25th Percentile | 2.6 | 0.5 | 2.1 | 1.5 | 1.8 | 1.7 | 1.7 | 1.7 |
| 50th Percentile | 3.8 | 1.4 | 3.4 | 2.4 | 2.7 | 2.5 | 2.6 | 2.6 |
| 75th Percentile | 4.9 | 2.2 | 4.8 | 3.2 | 3.5 | 3.4 | 3.4 | 3.4 |
| 95th Percentile | 6.6 | 3.4 | 6.6 | 4.4 | 4.8 | 4.5 | 4.6 | 4.6 |
| Probability of Earning > 0% | | | | | | | | |
| 5 year | 94.5 | 78.7 | 89.3 | 91.2 | 93.2 | 92.9 | 92.9 | 93.0 |
| 1 year | 75.9 | 64.3 | 71.7 | 73.0 | 74.7 | 74.6 | 74.3 | 74.4 |
| Liquidity | | | | | | | | |
| Liquid | 47 | 100 | 70 | 86 | 85 | 80 | 80 | 80 |
| Semi-Liquid | 52 | 0 | 30 | 14 | 13 | 17 | 17 | 17 |
| Illiquid | 2 | 0 | 0 | 0 | 3 | 3 | 3 | 3 |

ASSUMPTION – REDUCE TIER 2 BY \$50 MILLION

- In the instance that \$50 million is spent out of Tier 2, but not immediately replenished

| Broad Allocation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
|-----------------------------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Tier 1 | 31.0 | 100.0 | 0.0 | 59.2 | 38.4 | 38.4 | 38.4 | 38.4 |
| Cash | 8.2 | 30.0 | 0.0 | 17.8 | 12.4 | 12.4 | 12.4 | 12.4 |
| Short Term Government Bonds | 22.8 | 70.0 | 0.0 | 41.4 | 26.0 | 26.0 | 26.0 | 26.0 |
| Tier 2 | 20.7 | 0.0 | 100.0 | 40.8 | 23.4 | 23.4 | 23.4 | 23.4 |
| Investment Grade Bonds | 15.5 | 0.0 | 70.0 | 28.6 | 16.0 | 16.0 | 16.0 | 16.0 |
| Bank Loans | 5.2 | 0.0 | 30.0 | 12.2 | 7.4 | 7.4 | 7.4 | 7.4 |
| Tier 3 - Long Term Capital | 48.3 | 0.0 | 0.0 | 0.0 | 38.2 | 38.2 | 38.2 | 38.2 |
| Global Long Only Equity | 0.0 | 0.0 | 0.0 | 0.0 | 36.2 | 31.2 | 22.2 | 13.7 |
| Internal Loans | 1.8 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Real Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 4.0 | 2.5 |
| Absolute Return | 46.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 20.0 |
| | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| Risk (StdDev Rtn), % | 5.4 | 3.8 | 6.2 | 3.8 | 8.4 | 8.1 | 7.2 | 6.4 |
| Sharpe Ratio | 0.48 | -0.02 | 0.35 | 0.25 | 0.39 | 0.41 | 0.43 | 0.44 |
| Maximum Drawdown | -8.9 | -7.5 | -11.0 | -6.6 | -15.2 | -14.3 | -12.4 | -10.9 |
| 10 Year - Monte Carlo Simulation | Current | Tier 1 Only | Tier 2 Only | T1/T2 | T1/T2/LTC 1 | T1/T2/LTC 2 | T1/T2/LTC 3 | T1/T2/LTC 4 |
| 5th Percentile | 1.0 | -0.6 | 0.2 | 0.3 | 0.2 | 0.4 | 0.6 | 0.7 |
| 25th Percentile | 2.6 | 0.5 | 2.1 | 1.5 | 2.7 | 2.8 | 2.7 | 2.6 |
| 50th Percentile | 3.8 | 1.4 | 3.5 | 2.3 | 4.4 | 4.5 | 4.2 | 4.0 |
| 75th Percentile | 4.9 | 2.2 | 4.7 | 3.1 | 6.2 | 6.2 | 5.7 | 5.3 |
| 95th Percentile | 6.6 | 3.4 | 6.7 | 4.3 | 8.8 | 8.7 | 7.9 | 7.3 |
| Probability of Earning > 0% | | | | | | | | |
| 5 year | 94.4 | 78.8 | 89.6 | 91.0 | 88.8 | 89.9 | 91.3 | 92.6 |
| 1 year | 75.8 | 63.8 | 71.8 | 72.7 | 69.6 | 70.5 | 72.0 | 72.9 |
| Liquidity | | | | | | | | |
| Liquid | 46.5 | 100.0 | 70.0 | 87.8 | 90.6 | 90.6 | 80.6 | 70.6 |
| Semi-Liquid | 51.7 | 0.0 | 30.0 | 12.2 | 7.4 | 7.4 | 17.4 | 27.4 |
| Illiquid | 1.8 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 |

Resolution R2018-xx

WHEREAS, in April 2009 the Board of Trustees adopted a “non-endowment funds annual expenditure policy” to guide the spending of investment returns following the sharp stock market declines in 2008 and early 2009; and

WHEREAS, the intent at that time was to restore the recent losses and build a sufficient reserve to protect future spending from investment returns; and

WHEREAS, the investment fluctuation balance (reserve) has largely been restored allowing for greater flexibility in setting the annual budget spending plan.

NOW THEREFORE BE IT RESOLVED: that the Board of Trustees adopts the Non-Endowment Funds Annual Expenditure Policy as amended.

MIAMI UNIVERSITY
NON-ENDOWMENT FUNDS ANNUAL EXPENDITURES POLICY
December 2017

- A. The annual investment earnings derived from the Miami University Non-Endowment Fund contribute to the university's non-operating revenues budget. The underlying investments are guided by the Non-Endowment Funds Investment Policy.
- B. A reserve for investment fluctuations will be maintained in order to buffer the portfolio from short-term capital market fluctuations. The target balance of the reserve for future investment fluctuations is the amount of the statistical maximum drawdown¹ of the previous fiscal year-end Non-endowment pool, plus one year of budgeted Non-endowment fund investment earnings.
- C. Each year, the University budget office shall budget investment earnings based upon a reasonable assessment of the interest rate and capital markets environment and any underfunding of the reserve for investment fluctuations.
- D. Any earnings in excess of this budgeted level shall be allocated 100% to the reserve for investment fluctuations, unless otherwise determined by the Board of Trustees.
- E. In the event the earnings are short of the budgeted amount, the difference shall be drawn from the reserve for investment fluctuations.
- F. This policy shall be reviewed on an annual basis.

¹ Maximum drawdown is calculated by statistically modelling 2.326 standard deviations, providing a 99% confidence interval.

MIAMI UNIVERSITY
NON-ENDOWMENT FUNDS ANNUAL EXPENDITURES POLICY
~~APRIL 2009~~December 2017

- A. The annual investment earnings derived from the Miami University Non-Endowment Fund contribute to the university's non-operating revenues budget. The underlying investments are guided by the Non-Endowment Funds Investment Policy.
- ~~A.~~
- ~~B.~~ Since it is inherently difficult to accurately budget the annual level of dividends, interest, and realized and unrealized capital gains and losses, the University instead shall rely upon an annual spending policy.
- ~~C.~~B. A reserve for investment fluctuations will be maintained in order to buffer the portfolio from short-term capital market fluctuations. The target balance of the reserve for future investment fluctuations is the amount of the statistical maximum drawdown¹ of the previous fiscal year-end Non-endowment pool, plus one yearthree years of budgeted Non-endowment fund investment earnings.
- C. Each year, the University budget office shall budget investment earnings based upon a reasonable assessment of the interest rate and capital markets environment and any underfunding of the reserve for investment fluctuations.
- ~~D.~~ as 3.50% of the average of the last 4 quarter balances of the total Non-Endowment Fund as of March 31. If the balance of the reserve investment fluctuations is less than the budgeted amount of investment earnings, then the investment earnings budget target rate of 3.50% shall be reduced by up to 1.25 percentage points.
- D. Any earnings in excess of this budgeted level shall be allocated 100% to the reserve for investment fluctuations, unless otherwise determined by the Board of Trustees.
- E. as follows:
- a. If the reserve for future investment fluctuations is below its target balance (as described above), then 100% of the surplus earnings shall be used to replenish this reserve, until it reaches the target balance;
- b. Once the reserve for future investment fluctuations target is attained,
- i. 50% of the remaining surplus shall be allocated to the University Education & General fund (E&G) to be applied to projects as approved by the Finance & Audit Committee of the Board of Trustees
- ii. 50% of the remaining surplus shall be retained in the Non-Endowment Fund with the intention of growing the total fund balance
- ~~F.~~E. In the event the earnings are short of the budgeted amount, the difference shall be drawn from the reserve for investment fluctuations.
- F. This policy shall be reviewed on an annual basis.

G- ¹Maximum drawdown is calculated by statistically modelling 2.326 standard deviations, providing a 99% confidence interval.

**Miami University
Resolution R201-**

WHEREAS, the Board of Trustees adopted Resolution R2015-45 on May 1, 2015 to update and amend the Non-Endowment Investment Policy; and

WHEREAS, the Senior Vice President for Finance and Business Services of the University, with the concurrence of the Investment Sub-committee and the Finance and Audit Committee, has concluded that the risk metrics described in Section C of the Non-endowment Funds Investment Policy are unsuitable in the current economic and capital market environment; and

WHEREAS, the Senior Vice President for Finance and Business Services of the University, with the concurrence of the Investment Sub-committee and the Finance and Audit Committee, recommends that Section C be suspended until the Investment Sub-committee develops an updated Non-endowment Funds Investment Policy; and

NOW, THEREFORE BE IT RESOLVED: The Board of Trustees approves the Suspension of Section C of the Non-Endowment Funds Investment Policy.

BE IT FURTHER RESOLVED: The suspension of Section C shall remain in effect until new investment objective and risk parameters can be adopted by the Investment Sub-Committee of the Finance and Audit Committee.

NON-ENDOWMENT FUNDS INVESTMENT POLICY
MIAMI UNIVERSITY
Updated May 2015

- A. All university funds derived from the sources enumerated in Ohio Revised Code 3345.05 (A) (hereinafter referred to as Non-Endowment Funds) shall for investment purposes be designated into one of three pools: 1) University's Operating Cash pool; 2) University's Core Cash pool; and 3) University's Long-Term Capital pool. In addition, the Miami University Board of Trustees may designate some of these funds as quasi-endowments, which for investment purposes shall be invested in the University's endowment pool according to the endowment investment policy (Appendix A).
- B. The investment of the remaining Non-Endowment Funds shall be made with an average of at least twenty-five percent of the average amount of the investment portfolio over the course of the previous fiscal year invested in securities of the United States government or of its agencies or instrumentalities, the treasurer of the state's pooled investment program, obligations of this state or any political subdivision of this state, certificates of deposit of any national bank located in this state, written repurchase agreements with any eligible Ohio financial institution that is a member of the federal reserve system or federal home loan bank, money market funds, or bankers acceptances maturing in two hundred seventy days or less which are eligible for purchase by the federal reserve system, as a reserve.
- C. The investment of Non-Endowment Funds will be guided by the objective of earning market rates of return while accepting a low level of market risk. The portfolio's asset allocation will be statistically modeled using historical and projected risk and return characteristics of the portfolio's asset classes. The portfolio will be constructed so that the statistical models project a 15% or lower probability of loss in any one year, and a projected one-year worst-case loss of 5% or less.
- D. The investment allocation objectives and instruments of each pool shall be:
 - Operating Cash
 - Objective: To meet the day-to-day cash obligations of the University.
 - Investments: Short-term U.S. Treasury and government agency securities, commercial and bank paper, and AAA-rated corporate fixed income securities, with an average weighted maturity of less than one year.
 - Core Cash
 - Objective: To provide a liquid source of funds in the event the Operating Cash pool is insufficient to meet the University's cash needs.
 - Investments: Intermediate-term fixed income investments in U.S. Treasury and government agency securities, corporate fixed income securities rated A or better, and commercial and bank paper, with an average weighted maturity of between one and five years.

- Long-Term Capital
 - Objective: To optimize earned income on long-term funds which would be expended by the University in the unlikely event of severe financial exigency.
 - Investments: The primary determinant of allocation will be the risk parameters established in paragraph C.

E. Asset allocation target ranges will be:

Operating Cash: between two and six months of projected cash needs.

Core Cash: between two and six months of projected cash needs.

Long-Term Capital: funds in excess of the amounts needed for operating and core cash purposes.

F. Rebalancing may occur at the discretion of the Treasurer, as conditions dictate.

G. The Board of Trustees' Finance and Audit Committee shall serve as the Investment Committee required by Ohio Revised Code 3345.05. The Committee may retain the services of an investment advisor who satisfies the requirements of Ohio Revised Code Section 3345.05 (D) (1) and may delegate implementation of this policy to an investment subcommittee comprised of Board members and university employees. The Investment Committee shall report at least semi-annually to the Board.

H. All fiduciaries are required to discharge their duties with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

APPENDIX A

MIAMI UNIVERSITY FOUNDATION INVESTMENT POLICY FEBRUARY 2014

The Directors of the Miami University Foundation recognize their responsibility to prudently manage the funds that have been and will be given to the Foundation. Spending from these funds is intended to benefit Miami University in perpetuity; therefore, the Foundation's investment policy, built upon the Foundation's Core Investment Philosophy, is intended to protect the principal of the funds and to produce maximum total return without assuming inappropriate risks.

GOALS

The Directors hereby affirm the following goals for the Foundation's investment portfolio:

- 1) To maintain a proper balance between the preservation of principal, the total return available for spending, and the enhancement of the value of the funds.
- 2) To maintain a spending rate that protects the real value of the principal, thereby preserving intergenerational equity.
- 3) To provide investment returns which are sufficient to meet the Endowment's spending requirements while remaining within an acceptable level of volatility, as determined by the Endowment's Asset Allocation Policy.

OBJECTIVES

The Directors' primary objective is to target a long-term risk adjusted return that exceeds the sum of the annual spending rate, the long-term inflation rate, and operating fees and expenses.

Due to the long-term investment horizon of the Foundation's funds, the Directors recognize that the portfolio can tolerate some year-to-year fluctuations in returns. The Directors also acknowledge that the values of the variables in the target rate of return, along with expectations for future rates of return, will vary over time. However, the portfolio is modeled such that it plans to achieve its objective over a complete business cycle, with excess returns providing real growth in the fund.

While recognizing that short term volatility accompanies the pursuit of long term returns, the Directors also acknowledge the importance of the annual Endowment distribution to Miami University, its students, and faculty. The Directors will endeavor to strike a prudent balance between these potentially conflicting short and long term objectives.

PORTFOLIO MANAGEMENT

Oversight and direction of the Foundation's investment portfolio shall be the responsibility of the Investment Committee of the Foundation Board of Directors. The Investment Committee will establish an asset allocation policy designed to achieve the Foundation's investment goals and objectives. The asset allocation policy may be updated from time to time, as circumstances and capital market expectations warrant.

The Investment Committee does not view its role as one of making individual investment decisions. Decisions on specific investments will be made by advisors and managers. The investment managers will be jointly recommended by the Foundation's Chief Investment Officer and external investment consultant, and approved by the Investment Committee. These managers will comprise a variety of investment strategies to implement the Asset Allocation Policy.

In managing and investing the Foundation's pooled fund, the following factors shall be considered:

- 1) General economic conditions;
- 2) The possible effect of inflation or deflation;
- 3) The role that each investment or course of action plays within the overall investment portfolio of the fund;
- 4) The expected total return from income and the appreciation of investments;
- 5) Other resources of the Miami University Foundation;
- 6) The need of the Miami University Foundation and of the fund to make distributions and preserve capital;
- 7) An asset's special relationship or special value, if any, to the purposes of Miami University Foundation.

Management and investment decisions shall be made not in isolation but rather in the context of the Miami University Foundation's portfolio of investments as a whole and as part of an overall investment strategy having risk and return objectives reasonably suited to the fund and to the Foundation. In considering these factors, the investment committee may rely on the advice of external financial experts.

The Investment Committee will regularly review the strategy and performance of the Foundation investment managers. Any change in investment philosophy, style, or a significant departure from past procedure by an investment manager will be reviewed by the Committee.

The Investment Committee has the authority to invest new funds and to rebalance the investment portfolio among the managers, with the objective of maintaining the Foundation's adherence to its asset allocation target ranges.

REPORT ON CASH AND INVESTMENTS
Finance and Audit Committee
Miami University
December 7, 2017

Non-Endowment Fund

For the first fiscal quarter ending September 30, 2017, the non-endowment's return was +1.2%. Returns among the absolute return strategies contributed most to performance while public debt strategies in the long-term capital category held up despite a slight pick-up in rates during the quarter. Performance for the calendar year to date was +3.7%, with the absolute return strategies leading the way. A summary of performance is attached.

At September 30, the Operating Cash balance was over \$129.7 million after an influx of cash as a result of tuition payments.

| Current Funds | Fair Value | % of Portfolio |
|---------------------------------------|----------------------|-----------------------|
| Operating Cash: | | |
| Short-term Investments* | \$129,742,669 | 19.8% |
| Core Cash: | | |
| Intermediate-term Investments | \$128,694,071 | 19.6% |
| Long-Term Capital: | | |
| Debt Investments** | \$128,270,626 | 19.5% |
| Absolute Return | <u>\$269,760,175</u> | <u>41.1%</u> |
| Total Long-Term Capital | \$398,030,801 | 60.6% |
| Total Current Fund Investments | \$656,467,541 | 100.0% |

*includes bank account balances not included on performance report

** includes internal loans

Endowment Fund

The endowment fund preliminary return was +3.2% for the first fiscal quarter ending September 30, 2017. This figure excludes the results for the private capital investments, which report on a significant time lag. Results during the recent quarter reflected solid returns again from global public equity strategies. Please see the attached performance report for additional endowment related details.

The Miami University Foundation Investment Committee next meets in Oxford, OH on November 9.

Bond Project Funds

Construction activity continued steadily through the late summer and early fall. Approximately \$19.6 million in draws were made during the September quarter. As of September 30, 2017, the balances were as follows:

Plant Funds

| | |
|-------------------------------|-----------------------------|
| Series 2014 Bond Project Fund | \$ 12,063,253 |
| Series 2017 Bond Project Fund | <u>\$120,768,852</u> |
| Total Plant Funds | <u>\$132,832,105</u> |

Attachments

Non-endowment Performance Summary as of 9/30/2017

MUF Treasurer's Report as of 9/30/2017

Miami University Non-Endowment

Summary of Investment Performance

Report for Periods Ending September 30, 2017

| | Annualized | | | | | | | | Date | Market Value |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------|---------------|
| | Qtr | YTD | 1Yr | 3Yr | 5Yr | 7Yr | 10Yr | Since Inception | | |
| <u>Total Composite</u> | 1.2% | 3.7% | 4.2% | 2.1% | 2.6% | 2.6% | 1.3% | 3.3% | 6/02 | \$590,470,506 |
| <u>Operating Cash</u> | 0.1 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.6 | 1.6 | 6/02 | 63,637,949 |
| U.S. 91-Day Treasury Bills | 0.3 | 0.6 | 0.7 | 0.3 | 0.2 | 0.2 | 0.4 | 1.2 | | |
| BlackRock | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.1 | 10/08 | 503,239 |
| U.S. 91-Day Treasury Bills | 0.3 | 0.6 | 0.7 | 0.3 | 0.2 | 0.2 | - | 0.2 | | |
| Star Ohio | 0.2 | 0.7 | 0.9 | 0.5 | 0.3 | 0.3 | 0.6 | 1.7 | 6/02 | 3,331,945 |
| U.S. 91-Day Treasury Bills | 0.3 | 0.6 | 0.7 | 0.3 | 0.2 | 0.2 | 0.4 | 1.2 | | |
| Chase Savings | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | - | 0.2 | 10/08 | 38,486,250 |
| U.S. 91-Day Treasury Bills | 0.3 | 0.6 | 0.7 | 0.3 | 0.2 | 0.2 | - | 0.2 | | |
| STAROhio Plus | 0.1 | 0.3 | 0.4 | 0.3 | 0.2 | - | - | 0.2 | 7/12 | 1,167,391 |
| U.S. 91-Day Treasury Bills | 0.3 | 0.6 | 0.7 | 0.3 | 0.2 | - | - | 0.2 | | |
| Huntington ICS | 0.1 | 0.5 | 0.7 | - | - | - | - | 0.7 | 9/16 | 20,149,124 |
| U.S. 91-Day Treasury Bills | 0.3 | 0.6 | 0.7 | - | - | - | - | 0.7 | | |
| <u>Core Cash</u> | 0.4 | 1.4 | 0.1 | 1.3 | 1.1 | 1.7 | 2.5 | 2.9 | 6/02 | 128,694,071 |
| Bloomberg Barclays 1-3yr U.S. Govt Index | 0.2 | 0.7 | 0.3 | 0.8 | 0.6 | 0.7 | 1.8 | 2.3 | | |
| Bartlett A | 0.2 | 0.7 | 0.1 | 0.7 | 0.5 | 0.7 | 1.7 | 2.2 | 6/02 | 23,351,613 |
| Bloomberg Barclays 1-3yr U.S. Govt Index | 0.2 | 0.7 | 0.3 | 0.8 | 0.6 | 0.7 | 1.8 | 2.3 | | |
| Bartlett B | 0.5 | 1.9 | -0.2 | 1.8 | 1.3 | 2.1 | 3.6 | 3.7 | 6/02 | 31,352,501 |
| Bloomberg Barclays 1-3yr U.S. Govt Index | 0.2 | 0.7 | 0.3 | 0.8 | 0.6 | 0.7 | 1.8 | 2.3 | | |
| Commonfund Intermediate Bond Fund | 0.4 | 1.1 | 0.5 | 1.1 | 1.1 | 1.7 | 1.6 | 2.3 | 6/02 | 6,234,505 |
| Bloomberg Barclays 1-5 YR Treasury Index | 0.3 | 1.1 | -0.1 | 1.2 | 0.8 | 1.1 | 2.4 | 2.7 | | |
| M.D. Sass - 3 Year | 0.5 | 1.7 | -0.1 | 1.6 | 1.4 | - | - | 2.3 | 1/11 | 31,005,667 |
| Bloomberg Barclays Interm Govt Bond Index | 0.3 | 1.5 | -0.7 | 1.6 | 1.0 | - | - | 1.9 | | |
| M.D. Sass - 2 Year | 0.4 | 1.3 | 0.6 | 1.1 | 1.1 | - | - | 1.1 | 9/12 | 36,749,785 |
| Bloomberg Barclays Interm Govt Bond Index | 0.3 | 1.5 | -0.7 | 1.6 | 1.0 | - | - | 1.0 | | |
| <u>Long Term Capital</u> | 1.5 | 5.1 | 6.3 | 2.8 | 4.2 | 4.2 | 1.0 | 4.5 | 6/02 | 398,138,486 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | 3.9 | 7.5 | | |
| Bloomberg Barclays US Aggregate Index | 0.8 | 3.1 | 0.1 | 2.7 | 2.1 | 3.0 | 4.3 | 4.5 | | |

Miami University Non-Endowment

Summary of Investment Performance

Report for Periods Ending September 30, 2017

| | Annualized | | | | | | | Since Inception | Date | Market Value |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------|------|---------------|
| | Qtr | YTD | 1Yr | 3Yr | 5Yr | 7Yr | 10Yr | | | |
| Public Debt | 1.0% | 3.4% | 4.6% | 2.8% | 3.1% | 3.8% | 5.3% | 5.1% | 6/02 | \$128,270,627 |
| Bloomberg Barclays US Aggregate Index | 0.8 | 3.1 | 0.1 | 2.7 | 2.1 | 3.0 | 4.3 | 4.5 | | |
| Bartlett C | 0.7 | 2.6 | -0.5 | 2.4 | 1.7 | 2.6 | 4.5 | 4.4 | 6/02 | 23,279,569 |
| Bloomberg Barclays US Aggregate Index | 0.8 | 3.1 | 0.1 | 2.7 | 2.1 | 3.0 | 4.3 | 4.5 | | |
| Beach Point Loan Fund | 0.7 | 1.8 | 2.6 | 3.5 | - | - | - | 3.8 | 1/13 | 29,709,130 |
| CS Leveraged Loan Index | 1.1 | 3.0 | 5.4 | 4.0 | - | - | - | 4.1 | | |
| Commonfund High Quality Bond Fund | 1.0 | 4.0 | 1.2 | 3.3 | 2.9 | 3.9 | 5.3 | 5.3 | 6/02 | 29,217,967 |
| Bloomberg Barclays US Aggregate Index | 0.8 | 3.1 | 0.1 | 2.7 | 2.1 | 3.0 | 4.3 | 4.5 | | |
| Templeton Global Total Return Fund | 1.3 | 4.9 | 13.6 | 2.3 | 3.5 | - | - | 3.8 | 5/11 | 35,381,067 |
| Bloomberg Barclays Multiverse TR | 1.9 | 6.6 | -0.6 | 1.6 | 0.8 | - | - | 1.6 | | |
| Internal Loans | 0.9 | 2.6 | 3.5 | - | - | - | - | 2.9 | 3/16 | 10,682,894 |

Miami University Non-Endowment

Summary of Investment Performance

Report for Periods Ending September 30, 2017

| | Annualized | | | | | | | Since Inception | Date | Market Value |
|--|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-----------------|------|---------------|
| | Qtr | YTD | 1Yr | 3Yr | 5Yr | 7Yr | 10Yr | | | |
| Absolute Return | 1.7% | 6.0% | 7.1% | 2.8% | 5.4% | 4.7% | -0.9% | 3.7% | 6/02 | \$269,867,859 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | 3.9 | 7.5 | | |
| Bloomberg Barclays US Aggregate Index | 0.8 | 3.1 | 0.1 | 2.7 | 2.1 | 3.0 | 4.3 | 4.5 | | |
| ABS Investment Management | 3.3 | 10.5 | 10.8 | 4.6 | 7.1 | 5.6 | - | 5.9 | 5/09 | 28,503,749 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | - | 10.8 | | |
| HFRI Fund of Funds Index | 2.3 | 5.6 | 6.5 | 2.2 | 3.8 | 2.9 | - | 3.4 | | |
| Beach Point Total Return Fund | 1.6 | 4.3 | 7.0 | 3.6 | - | - | - | 4.9 | 3/13 | 26,003,272 |
| ICE BofAML High Yield Bond Index | 2.0 | 7.0 | 9.1 | 5.9 | - | - | - | 5.7 | | |
| HFRI Event Driven Index | 1.9 | 5.9 | 9.7 | 3.7 | - | - | - | 4.9 | | |
| Evanston Weatherlow Fund | 1.9 | 3.2 | 4.1 | 2.3 | 5.2 | 4.4 | - | 5.5 | 5/09 | 26,575,772 |
| HFRI Fund of Funds Index | 2.3 | 5.6 | 6.5 | 2.2 | 3.8 | 2.9 | - | 3.4 | | |
| S&P 500 Index | 4.5 | 14.2 | 18.6 | 10.8 | 14.2 | 14.4 | - | 15.3 | | |
| GEM Realty Securities LP | 0.7 | 5.8 | 4.0 | - | - | - | - | -1.2 | 4/15 | 24,279,727 |
| MSCI U.S. REIT Index | 0.6 | 2.7 | -0.7 | - | - | - | - | 5.3 | | |
| HFRI Equity Hedge Index | 3.5 | 9.6 | 11.0 | - | - | - | - | 4.1 | | |
| Lighthouse Diversified Fund | 1.2 | 3.5 | 4.6 | 3.1 | 5.6 | 5.1 | - | 5.1 | 5/10 | 27,766,190 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | - | 10.3 | | |
| HFRI Fund of Funds Index | 2.3 | 5.6 | 6.5 | 2.2 | 3.8 | 2.9 | - | 3.1 | | |
| Rimrock High Income PLUS Fund | 0.8 | 4.4 | 8.0 | 1.8 | - | - | - | 1.8 | 9/14 | 26,347,053 |
| Bloomberg Barclays US Corporate HY Index | 2.0 | 7.0 | 8.9 | 5.8 | - | - | - | 5.8 | | |
| Bloomberg Barclays US Aggregate Index | 0.8 | 3.1 | 0.1 | 2.7 | - | - | - | 2.7 | | |
| Sandler Offshore | 2.4 | 6.2 | 5.7 | 5.4 | - | - | - | 3.7 | 3/13 | 27,996,604 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | - | - | - | 9.2 | | |
| HFRI Equity Hedge Index | 3.5 | 9.6 | 11.0 | 4.6 | - | - | - | 5.4 | | |
| SCS Opportunities | 1.2 | 6.2 | 6.6 | 2.4 | 5.2 | 4.2 | - | 4.4 | 5/09 | 27,076,458 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | - | 10.8 | | |
| HFRI Fund of Funds Index | 2.3 | 5.6 | 6.5 | 2.2 | 3.8 | 2.9 | - | 3.4 | | |
| SkyBridge Series G | 2.2 | 5.8 | 6.6 | -0.4 | 4.3 | - | - | 5.4 | 4/12 | 25,319,846 |
| MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | - | - | 9.8 | | |
| HFRI Fund of Funds Index | 2.3 | 5.6 | 6.5 | 2.2 | 3.8 | - | - | 3.6 | | |
| Waterfall Eden Master Fund, Ltd. | 1.8 | 9.6 | 13.4 | - | - | - | - | 11.4 | 1/16 | 29,999,188 |
| HFRI RV: Asset Backed Index | 1.7 | 6.4 | 8.6 | - | - | - | - | 7.7 | | |
| Bloomberg Barclays Asset Backed Index | 0.4 | 1.6 | 0.9 | - | - | - | - | 1.5 | | |

Miami University Non-Endowment

Summary of Investment Performance

Report for Periods Ending September 30, 2017

Footnotes:

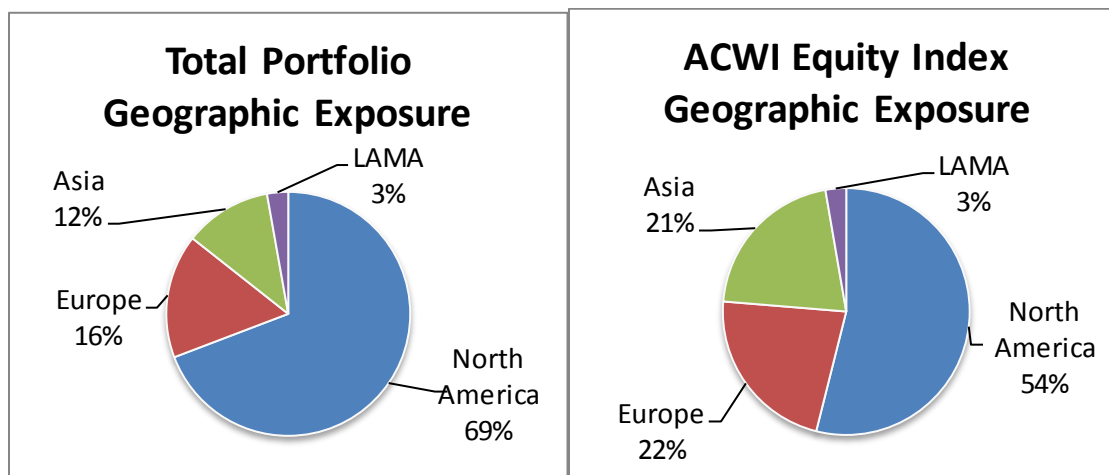
- * Performance returns are net of investment management fees.
- * Calculated returns may differ from the manager's due to differences in security pricing and/or cash flows.
- * Manager and index data represent the most current available at the time of report publication.
- * Hedge fund and private capital manager market values and rates of return may be based on estimates and may be revised until completion of an annual audit by the manager.
- * For managers and indices that report returns on a lag, 0.0% is utilized for the most recent time period until the actual return data are reported.
- * The fiscal year ends in June.

**MIAMI UNIVERSITY FOUNDATION
TREASURER'S REPORT
September 30, 2017**

The preliminary September 30, 2017 market value for the Miami University Foundation totaled \$510,571,110. Most of the private programs have not yet reported September 30 values. The following table summarizes the Foundation's strategic allocation compared with the strategic ranges.

| ASSET CATEGORY | MARKET VALUE | % OF TOTAL | STRATEGIC RANGE |
|--------------------------------|--------------------|--------------|------------------|
| Long-Only Global Equity | 196,982,526 | 38.6% | 20%-40% |
| Hedged Equity | 26,964,906 | 5.3% | 5%-10% |
| Private Equity | 15,205,437 | 3.0% | 5%-10% |
| Global Equity | 239,152,868 | 46.8% | 35% - 55% |
| Interest Rate Sensitive | 49,043,680 | 9.6% | 5%-20% |
| Credit Sensitive | 43,972,558 | 8.6% | 5%-20% |
| Global Debt | 93,016,237 | 18.2% | 10% - 30% |
| Natural Resources | 44,676,380 | 8.8% | 5%-20% |
| Real Estate | 26,920,168 | 5.3% | 5%-10% |
| Global Real Assets | 71,596,548 | 14.0% | 10% - 30% |
| Diversifying Strategies | 88,544,201 | 17.3% | 5% - 25% |
| Cash | 18,261,256 | 3.6% | 0%-10% |
| Total Portfolio | 510,571,110 | 100% | |

| LIQUIDITY | | | | | | | |
|--------------------------|---------------|--------------|--------------|-------------------------|-------------|--------------------|---------|
| | Global Equity | Global Debt | Real Assets | Diversifying Strategies | Cash | Total by Liquidity | Policy |
| Liquid (< quarter) | 38.6% | 9.6% | 1.1% | 2.4% | 3.6% | 55.2% | 40% min |
| Semi Liquid (> quarter) | 3.6% | 6.0% | 2.6% | 10.4% | | 22.7% | 40% max |
| Illiquid (> 2 years) | 4.6% | 2.6% | 10.3% | 4.5% | | 22.1% | 35% max |
| Total by Category | 46.8% | 18.2% | 14.0% | 17.3% | 3.6% | 100.0% | |



During the first quarter of fiscal year 2017, the value of the combined endowment investment pool decreased from \$512.4 million to \$510.6 million due to annual distributions. The fiscal year 2017 endowment, under the new endowment spending policy, distributed about \$15.5 million. The administrative fee was about \$4.2 million. Preliminary investment returns were positive for the quarter. New cash gifts to the Miami University and the Miami University Foundation endowments totaled \$1,777,173 for the quarter.

The Investment Committee met in September in New York, NY. The Committee endorsed plans to make an addition to its exiting Master Limited Partnerships investment, a rare investment area where valuations currently appear attractive. These companies primarily provide transportation and storage for domestic oil and gas production.

The committee will next meet in Oxford, OH on November 8, 2017.

Preliminary investment returns were 3.2% for the September quarter, excluding the private programs which report on a significant time lag. Investment performance for the recent quarter was driven largely by global public equity strategies.

The tables on the following pages report each underlying manager's returns for multiple time periods, including the preliminary first fiscal quarter.

Respectfully submitted,

Ellen Schubert
Treasurer

Miami University Foundation

Summary of Allocation and Performance

Report For Periods Ending September 30, 2017

| Current Allocation | | Market Value | | ----- Annualized ----- | | | | | | | Since Inception | Inception Date |
|--------------------|----|--------------|--------------------------------------|------------------------|----------|------|------|------|------|-------|-----------------|----------------|
| | | | | Qtr. | Cal. YTD | 1 Yr | 3 Yr | 5 Yr | 7 Yr | 10 Yr | | |
| 100% | \$ | 510,168,639 | Total Composite | 2.7 | 9.0 | 10.1 | 3.7 | 6.2 | 6.1 | 3.1 | 8.8 | 4/93 |
| | | | MUF Custom Index ¹ | 2.5 | 8.7 | 11.1 | 4.3 | 6.8 | 6.9 | 3.7 | - | |
| | | | Global 60/40 | 3.4 | 11.4 | 10.9 | 5.7 | 7.0 | 6.8 | 4.4 | 6.2 | |
| | | | CPI + 5% | 2.2 | 5.2 | 7.3 | 6.3 | 6.3 | 6.8 | 6.7 | 7.2 | |
| 84.2% | \$ | 429,416,447 | Total Composite ex. Private Capital | 3.2 | 10.3 | 11.3 | 4.4 | 6.5 | 6.0 | 3.4 | 6.2 | 12/96 |
| | | | Global 60/40 | 3.4 | 11.4 | 10.9 | 5.7 | 7.0 | 6.8 | 4.4 | 6.2 | |
| 46.8% | \$ | 238,686,506 | Global Equity | 4.6 | 17.2 | 16.9 | 7.4 | 9.1 | 8.3 | 4.3 | 9.5 | 4/93 |
| | | | Global Equity Benchmark ² | 4.1 | 14.8 | 16.4 | 7.9 | 10.4 | 9.5 | 4.9 | 9.4 | |
| 43.9% | \$ | 223,947,431 | Global Equity ex. Private Equity | 5.0 | 18.2 | 17.5 | 7.5 | 8.7 | 7.6 | 3.7 | 6.2 | 12/96 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | 3.9 | 6.3 | |
| 38.6% | \$ | 196,982,526 | Public Equity | 5.6 | 21.0 | 20.3 | 8.6 | 9.4 | 8.3 | 3.9 | 6.4 | 12/96 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | 3.9 | 6.3 | |
| | | | S&P 500 Index | 4.5 | 14.2 | 18.6 | 10.8 | 14.2 | 14.4 | 7.4 | 8.1 | |
| 6.2% | \$ | 31,616,357 | Barings | 5.0 | 22.6 | 19.7 | 9.5 | - | - | - | 10.6 | 12/12 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | - | - | - | 10.1 | |
| 4.7% | \$ | 23,764,450 | Harris Oakmark Global Fund | 9.0 | 22.5 | 31.8 | 8.1 | - | - | - | 7.2 | 10/13 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | - | - | - | 7.5 | |
| 2.0% | \$ | 10,117,482 | Highclere International SMID Fund | 4.8 | - | - | - | - | - | - | - | 6/17 |
| | | | MSCI Small Cap EAFE Index | 7.5 | - | - | - | - | - | - | 7.5 | |
| 6.5% | \$ | 33,282,139 | Northern Trust ACWI IMI Fund | 5.4 | 17.5 | - | - | - | - | - | 21.4 | 10/16 |
| | | | MSCI AC World Index | 5.2 | 17.3 | - | - | - | - | - | 20.7 | |
| 6.2% | \$ | 31,748,965 | PIMCO RAE Fundamental Global Inst'l | 6.4 | 16.1 | 20.9 | - | - | - | - | 8.3 | 3/15 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | - | - | - | - | 7.8 | |
| 3.4% | \$ | 17,476,721 | Virtus Emerging Opportunities | 3.7 | 27.4 | 13.1 | 4.7 | 4.0 | - | - | 4.6 | 8/11 |
| | | | MSCI Emerging Markets Index | 7.9 | 27.8 | 22.5 | 4.9 | 4.0 | - | - | 3.2 | |
| 4.5% | \$ | 22,947,459 | Virtus Global Opportunities | 2.9 | 22.3 | 20.2 | 11.2 | 11.3 | - | - | 12.2 | 10/11 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | - | - | 10.2 | |
| 5.1% | \$ | 26,028,953 | William Blair Global Leaders Fund | 6.9 | 21.9 | 18.2 | 9.3 | - | - | - | 8.6 | 10/13 |
| | | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | - | - | - | 7.5 | |

Miami University Foundation

Summary of Allocation and Performance

Report For Periods Ending September 30, 2017

| Current Allocation | Market Value | | Qtr. | Cal. YTD | Annualized | | | | | Since Inception | Inception Date |
|--------------------|---------------|---|------|----------|------------|------|------|------|-------|-----------------|----------------|
| | | | | | 1 Yr | 3 Yr | 5 Yr | 7 Yr | 10 Yr | | |
| 5.3% | \$ 26,964,905 | Hedged Equity | 0.4 | 1.1 | 0.7 | 1.0 | 4.3 | 3.5 | 1.5 | 2.7 | 12/01 |
| | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | 3.9 | 6.7 | |
| | | HFRI Equity Hedge Index | 3.6 | 9.8 | 11.1 | 4.6 | 6.3 | 4.9 | 2.9 | 5.2 | |
| 1.6% | \$ 8,413,727 | JHL Capital | -3.2 | -3.1 | -6.6 | - | - | - | - | -4.9 | 11/14 |
| | | HFRI Equity Hedge Index | 3.6 | 9.8 | 11.1 | - | - | - | - | 4.8 | |
| | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | - | - | - | - | 7.0 | |
| 2.2% | \$ 10,978,786 | Marble Arch Offshore Fund | 2.7 | 2.5 | 5.3 | - | - | - | - | 4.8 | 10/14 |
| | | HFRI Equity Hedge Index | 3.6 | 9.8 | 11.1 | - | - | - | - | 4.8 | |
| | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | - | - | - | - | 7.4 | |
| 1.5% | \$ 7,572,392 | Starboard Value | 1.4 | 4.3 | 3.3 | 5.8 | 8.0 | - | - | 7.4 | 4/12 |
| | | HFRI Equity Hedge Index | 3.6 | 9.8 | 11.1 | 4.6 | 6.3 | - | - | 5.7 | |
| | | Russell 2000 Index | 5.7 | 10.9 | 20.7 | 12.2 | 13.8 | - | - | 13.3 | |
| 2.9% | \$ 14,739,075 | Private Equity | 0.0 | 6.7 | 9.7 | 5.6 | 10.1 | 11.4 | 7.5 | 13.3 | 4/93 |
| | | Thomson One All Private Equity Index | 0.0 | 7.7 | 10.6 | 9.3 | 11.9 | 11.9 | 7.7 | 14.9 | |
| | | MSCI AC World Index | 5.2 | 17.3 | 18.6 | 7.4 | 10.2 | 9.2 | 3.9 | 7.3 | |
| 0.0% | \$ 57,111 | Commonfund International Private Equity III | 0.0 | -2.5 | -0.5 | 1.1 | 0.9 | 2.4 | 1.6 | 2.3 | 6/00 |
| 0.0% | \$ 87,582 | Commonfund Private Equity IV | 0.0 | 11.0 | 15.2 | 16.4 | 15.3 | 17.9 | 13.3 | 11.2 | 6/00 |
| 0.0% | \$ 244,924 | Commonfund Private Equity V | 0.0 | 6.7 | 14.3 | 13.7 | 12.4 | 12.9 | 9.9 | -0.8 | 3/02 |
| 0.0% | \$ 136,022 | Commonfund Venture Capital IV | 0.0 | 3.9 | -0.1 | -2.2 | -1.1 | 2.4 | 2.6 | 2.8 | 3/99 |
| 0.0% | \$ 180,624 | Commonfund Venture Capital V | 0.0 | -6.0 | -12.4 | -7.7 | -4.8 | -2.0 | -2.2 | -6.4 | 1/00 |
| 0.1% | \$ 579,806 | Goldman Sachs Private Equity Offshore 2004 | 0.0 | 3.9 | 5.7 | 1.6 | 7.4 | 8.1 | 5.7 | -2.9 | 11/05 |
| 0.8% | \$ 4,089,352 | Goldman Sachs Private Equity Partners IX | 0.0 | 2.9 | 10.0 | 9.2 | 12.2 | 12.0 | 1.1 | 1.1 | 8/07 |
| 1.3% | \$ 6,509,543 | Hamilton Lane Co-Investment Fund II | 0.0 | 12.4 | 14.3 | 6.7 | 16.0 | 18.0 | - | 4.2 | 2/08 |
| 0.3% | \$ 1,336,476 | Hamilton Lane Secondary Fund II | 0.0 | -4.5 | -1.4 | -6.4 | 1.0 | 5.4 | - | 4.4 | 10/08 |
| 0.0% | \$ - | Huron Fund V | - | - | - | - | - | - | - | - | - |
| 0.2% | \$ 944,634 | Pomona Capital VI | 0.0 | 7.3 | 3.4 | 3.4 | 3.2 | 5.7 | 3.9 | -3.9 | 9/05 |
| 0.1% | \$ 573,001 | Summit Partners GE IX-A | 0.0 | - | - | - | - | - | - | | 3/17 |

Miami University Foundation
Summary of Allocation and Performance
Report For Periods Ending September 30, 2017

[illegible]

Miami University Foundation
Summary of Allocation and Performance
Report For Periods Ending September 30, 2017

| Current Allocation | Market Value | | | Annualized | | | | | | | Since Inception | Inception Date |
|--------------------|--------------|------------|---|------------|----------|-------|-------|-------|-------|-------|-----------------|----------------|
| | | | | Qtr. | Cal. YTD | 1 Yr | 3 Yr | 5 Yr | 7 Yr | 10 Yr | | |
| 14.0% | \$ | 71,599,319 | Global Real Assets | 0.4 | -1.6 | 0.7 | -5.6 | 0.7 | 2.3 | -1.3 | 5.0 | 9/95 |
| | | | Global Real Assets Benchmark ⁴ | 0.0 | 2.0 | 7.0 | -2.3 | 2.6 | 5.1 | 3.5 | - | |
| 3.7% | \$ | 18,965,218 | Public Real Assets | 1.4 | -6.9 | -1.4 | -12.6 | 0.2 | - | - | 3.6 | 10/11 |
| | | | Blended Index ⁵ | 1.8 | -1.3 | 0.0 | -2.9 | 3.3 | - | - | 5.6 | |
| | | | CPI + 5% | 2.2 | 5.2 | 7.3 | 6.3 | 6.3 | - | - | 6.5 | |
| 2.6% | \$ | 13,402,142 | Eagle Global MLP | -2.8 | -10.2 | -5.0 | -13.8 | 1.5 | - | - | 4.8 | 10/11 |
| | | | Alerian MLP Index | -3.0 | -5.6 | -3.7 | -12.9 | -0.6 | - | - | 1.8 | |
| 1.1% | \$ | 5,563,076 | Victory Global Natural Resources | 13.0 | 1.9 | 8.6 | -8.4 | - | - | - | -5.9 | 6/13 |
| | | | S&P North America Nat'l Resources Index | 7.4 | -4.4 | 0.4 | -6.6 | - | - | - | -0.5 | |
| 10.3% | \$ | 52,634,101 | Private Real Assets | 0.0 | 0.5 | 1.5 | -2.5 | 1.3 | 2.4 | -1.3 | 5.0 | 9/95 |
| | | | Thomson One Private Real Estate Index | 0.0 | 8.0 | 9.9 | 10.7 | 12.1 | 11.7 | 3.5 | 10.8 | |
| | | | S&P GSSI Natural Resources Index | 7.4 | -4.4 | 0.4 | -6.6 | -0.7 | 1.9 | -0.4 | - | |
| | | | NCREIF Timberland Index | 0.0 | 1.5 | 2.7 | 5.0 | 7.0 | 5.3 | 5.1 | 7.4 | |
| 5.3% | \$ | 26,922,940 | Private Real Estate Composite | 0.0 | 5.1 | 5.2 | 4.3 | 6.5 | 6.7 | -5.3 | -11.2 | 5/06 |
| 1.0% | \$ | 5,265,003 | GEM Realty Evergreen | 0.0 | 7.9 | 10.0 | - | - | - | - | 5.8 | 2/16 |
| 0.3% | \$ | 1,475,415 | Metropolitan Real Estate Partners IV | 0.0 | 6.1 | 5.3 | 2.7 | 5.2 | 3.1 | -4.8 | -10.8 | 5/06 |
| 0.5% | \$ | 2,708,576 | Penn Square Global Real Estate | 0.0 | 5.3 | 0.2 | -1.5 | 1.8 | 3.4 | - | -4.1 | 1/08 |
| 0.3% | \$ | 1,364,610 | Penn Square Global Real Estate II | 0.0 | 3.0 | 2.4 | 8.5 | 11.3 | -43.9 | - | -62.7 | 2/10 |
| 1.4% | \$ | 7,363,236 | WCP Real Estate IV | 0.0 | 4.3 | 8.8 | - | - | - | - | 8.8 | 3/15 |
| 1.7% | \$ | 8,746,100 | WCP NewCold | 0.0 | 4.3 | - | - | - | - | - | - | 11/16 |
| 5.0% | \$ | 25,711,161 | Private Natural Resources | 0.0 | -3.5 | -1.9 | -6.1 | -1.5 | 0.0 | 1.2 | 6.9 | 9/95 |
| 0.0% | \$ | 40,313 | Commonfund Energy III | 0.0 | -13.1 | -10.4 | -20.8 | -8.6 | -1.1 | 1.5 | 10.3 | 9/95 |
| 0.2% | \$ | 855,027 | Commonfund Natural Resources V | 0.0 | -8.8 | -1.4 | -13.7 | -3.0 | 1.1 | 2.2 | -8.8 | 9/03 |
| 0.2% | \$ | 780,070 | Commonfund Natural Resources VI | 0.0 | -12.9 | -8.5 | -7.1 | 2.4 | 4.6 | 3.4 | 4.9 | 9/05 |
| 0.4% | \$ | 1,916,384 | Commonfund Natural Resources VII | 0.0 | -4.4 | 3.9 | -9.0 | 5.5 | 3.9 | 2.7 | 2.6 | 1/07 |
| 1.3% | \$ | 6,459,650 | Commonfund Natural Resources VIII | 0.0 | -5.4 | -1.1 | -3.1 | 0.9 | 0.4 | - | 0.4 | 11/08 |
| 0.4% | \$ | 1,954,824 | Goldman Sachs Concentrated Energy | 0.0 | 8.9 | 1.4 | -19.3 | -15.6 | -9.0 | - | -7.0 | 4/08 |
| 0.5% | \$ | 2,448,944 | Rockland Power Partners III | 0.0 | - | - | - | - | - | - | - | 1/17 |
| 1.2% | \$ | 6,347,788 | Timbervest II | 0.0 | -3.5 | -3.6 | -2.0 | 0.6 | -0.3 | 0.9 | 1.4 | 5/07 |
| 0.7% | \$ | 3,370,686 | Timbervest III | 0.0 | -1.4 | -0.6 | 0.5 | 3.9 | - | - | 3.3 | 12/10 |
| 0.3% | \$ | 1,537,475 | VIA Energy Opportunity III-A | 0.0 | 2.4 | - | - | - | - | - | - | 12/16 |

Miami University Foundation

Summary of Allocation and Performance

Report For Periods Ending September 30, 2017

| Current Allocation | Market Value | | ----- Annualized ----- | | | | | | | Since Inception | Inception Date |
|-----------------------|----------------------|--|------------------------|---------------------|-------------|-------------|-------------|-------------|--------------|--------------------|-------------------|
| | | | <u>Qtr.</u> | <u>Cal. YTD</u> | <u>1 Yr</u> | <u>3 Yr</u> | <u>5 Yr</u> | <u>7 Yr</u> | <u>10 Yr</u> | | |
| 17.4% | \$ 88,555,921 | Diversifying Strategies | 1.8 | 5.2 | 6.9 | 4.1 | 6.1 | 5.4 | 4.7 | 6.5 | 3/04 |
| | | <i>HFRI FOF: Conservative Index +1%</i> | <i>1.4</i> | <i>3.6</i> | <i>5.5</i> | <i>2.8</i> | <i>4.5</i> | <i>3.7</i> | <i>2.0</i> | <i>3.4</i> | |
| | | <i>Barclays U.S. Aggregate Bond Index</i> | <i>0.8</i> | <i>3.1</i> | <i>0.1</i> | <i>2.7</i> | <i>2.1</i> | <i>3.0</i> | <i>4.3</i> | <i>4.1</i> | |
| 2.6% | \$ 13,422,355 | Beach Point Total Return | 1.6 | 4.3 | 7.0 | 3.6 | 5.8 | - | - | 6.0 | 8/12 |
| | | <i>ML High Yield Bond Index</i> | <i>2.0</i> | <i>7.0</i> | <i>9.1</i> | <i>5.9</i> | <i>6.4</i> | <i>-</i> | <i>-</i> | <i>6.6</i> | |
| | | <i>HFRI Event Driven Index</i> | <i>2.1</i> | <i>6.2</i> | <i>10.0</i> | <i>3.7</i> | <i>5.9</i> | <i>-</i> | <i>-</i> | <i>6.1</i> | |
| 3.0% | \$ 15,451,716 | Canyon | 2.7 | 10.2 | 12.0 | 5.5 | 7.8 | 7.4 | 7.3 | 7.8 | 6/06 |
| | | <i>ML High Yield Bond Index</i> | <i>2.0</i> | <i>7.0</i> | <i>9.1</i> | <i>5.9</i> | <i>6.4</i> | <i>7.3</i> | <i>7.7</i> | <i>7.9</i> | |
| | | <i>HFRI Event Driven Index</i> | <i>2.1</i> | <i>6.2</i> | <i>10.0</i> | <i>3.7</i> | <i>5.9</i> | <i>5.2</i> | <i>4.0</i> | <i>4.8</i> | |
| 4.8% | \$ 24,281,909 | Evanston Weatherlow Fund | 1.9 | 3.2 | 4.1 | 2.3 | 5.2 | 4.3 | 3.4 | 5.7 | 3/04 |
| | | <i>S&P 500 Index</i> | <i>4.5</i> | <i>14.2</i> | <i>18.6</i> | <i>10.8</i> | <i>14.2</i> | <i>14.4</i> | <i>7.4</i> | <i>8.4</i> | |
| | | <i>Barclays U.S. Aggregate Bond Index</i> | <i>0.8</i> | <i>3.1</i> | <i>0.1</i> | <i>2.7</i> | <i>2.1</i> | <i>3.0</i> | <i>4.3</i> | <i>4.1</i> | |
| 2.0% | \$ 10,054,447 | Fir Tree International Value Fund | 0.4 | 0.9 | 3.5 | - | - | - | - | 8.1 | 4/16 |
| | | <i>HFRI Fund Weighted Composite Index</i> | <i>2.3</i> | <i>5.9</i> | <i>7.2</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>7.8</i> | |
| | | <i>MSCI AC World Index</i> | <i>5.2</i> | <i>17.3</i> | <i>18.6</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>16.6</i> | |
| 2.4% | \$ 12,206,827 | Sandler Capital | 2.4 | 6.2 | 5.7 | 5.4 | 4.1 | - | - | 3.5 | 4/12 |
| | | <i>MSCI AC World Index</i> | <i>5.2</i> | <i>17.3</i> | <i>18.6</i> | <i>7.4</i> | <i>10.2</i> | <i>-</i> | <i>-</i> | <i>9.8</i> | |
| | | <i>HFRI Equity Hedge Index</i> | <i>3.6</i> | <i>9.8</i> | <i>11.1</i> | <i>4.6</i> | <i>6.3</i> | <i>-</i> | <i>-</i> | <i>5.7</i> | |
| 2.6% | \$ 13,138,667 | Strategic Value Partners | 1.1 | 5.1 | 8.7 | 5.2 | - | - | - | 7.3 | 2/13 |
| | | <i>ML High Yield Bond Index</i> | <i>2.0</i> | <i>7.0</i> | <i>9.1</i> | <i>5.9</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>5.8</i> | |
| | | <i>HFRI ED: Distressed Restructuring Index</i> | <i>1.7</i> | <i>4.9</i> | <i>10.7</i> | <i>2.2</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>4.3</i> | |

Miami University Foundation
Summary of Allocation and Performance
Report For Periods Ending September 30, 2017

| Current Allocation | Market Value | | Qtr. | Cal. YTD | ----- Annualized ----- | | | | | Since Inception | Inception Date |
|-----------------------|----------------------|-----------------------------------|------------|-------------|------------------------|-------------|-------------|-------------|--------------|--------------------|-------------------|
| | | | | | <u>1 Yr</u> | <u>3 Yr</u> | <u>5 Yr</u> | <u>7 Yr</u> | <u>10 Yr</u> | | |
| 3.6% | \$ 18,261,256 | Cash | 0.1 | 0.2 | 0.3 | 0.3 | 0.2 | - | - | 0.2 | 6/11 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | <i>0.3</i> | <i>0.2</i> | - | - | <i>0.2</i> | |
| 0.1% | \$ 496,083 | Star Ohio MUF | 0.1 | 0.4 | 0.5 | 0.4 | 0.3 | - | - | 0.2 | 6/11 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | <i>0.3</i> | <i>0.2</i> | - | - | <i>0.2</i> | |
| 0.0% | \$ 116,682 | Star Ohio University | 0.1 | 0.4 | 0.5 | 0.4 | 0.3 | - | - | 0.2 | 6/11 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | <i>0.3</i> | <i>0.2</i> | - | - | <i>0.2</i> | |
| 1.0% | \$ 5,284,145 | Star Ohio Plus | 0.1 | 0.3 | 0.4 | - | - | - | - | 0.4 | 12/15 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | - | - | - | - | <i>0.5</i> | |
| 0.0% | \$ 35,226 | Blackrock Cash | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | - | - | 0.1 | 6/11 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | <i>0.3</i> | <i>0.2</i> | - | - | <i>0.2</i> | |
| 1.8% | \$ 9,122,253 | Chase University | 0.1 | 0.2 | 0.3 | 0.2 | 0.2 | - | - | 0.2 | 6/11 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | <i>0.3</i> | <i>0.2</i> | - | - | <i>0.2</i> | |
| 0.6% | \$ 3,206,867 | Chase MUF | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | - | - | 0.2 | 6/11 |
| | | <i>U.S. 91-Day Treasury Bills</i> | <i>0.3</i> | <i>0.6</i> | <i>0.7</i> | <i>0.3</i> | <i>0.2</i> | - | - | <i>0.2</i> | |

Miami University Foundation
Summary of Investment Performance
Report for Periods Ending September 30, 2017

Footnotes:

* Performance returns are net of investment management fees.

* Calculated returns may differ from the manager's due to differences in security pricing and/or cash flows.

* Manager and index data represent the most current available at the time of report publication.

* Hedge fund and private capital manager market values and rates of return may be based on estimates and may be revised until completion of an annual audit by the manager.

* For managers and indices that report returns on a lag, 0.0% is utilized for the most recent time period until the actual return data are reported.

* The fiscal year ends in June.

¹ MUF Custom Index is currently comprised of: 3.5% Thomson One All Private Equity Index, 5.0% Thomson One Mezzanine Index, 6.2% Thomson One Private Natural Resource Index, 5.8% Thomson One Private Real Estate Index, 25.5% MSCI AC World Index, 4.0% MSCI Emerging Markets Index, 10.0% Bloomberg Barclays US Aggregate Index, 8.0% HFRI Equity Hedge Index, 3.1% Alerian MLP Index, 3.1% Bloomberg Commodity Index, 5.0% CS Leveraged Loan Index, 15.0% HFRI FOF: Conservative Index, 4.0% MSCI All Country World Small Cap Index, and 1.8% MSCI U.S. REIT Index. Please see Appendix for benchmark history.

² Global 60/40 Index is comprised of: 60.0% MSCI AC World Index and 40.0% Bloomberg Barclays US Aggregate Index.

³ Global Equity Benchmark is comprised of: 18.0% Thomson One All Private Equity Index, 70.0% MSCI AC World Index, and 12.0% HFRI Equity Hedge Index.

⁴ Global Debt Benchmark is comprised of: 10.0% Thomson One Mezzanine Index, 27.0% Bloomberg Barclays US Aggregate Index, 57.0% HFRI ED: Distressed/Restructuring Index, and 6.0% CS Leveraged Loan Index.

⁵ Global Real Assets Benchmark is comprised of: 50.0% Thomson One Private Natural Resource Index, 27.0% Thomson One Private Real Estate Index, 11.0% Alerian MLP Index, and 12.0% Bloomberg Commodity Index.

⁶ Blended Index is comprised of: 33.3% Alerian MLP Index, 33.4% FTSE NAREIT All Equity Index, and 33.3% S&P North America Nat Resources Index.

INTEROFFICE MEMORANDUM

To: Investment Sub-Committee of the Miami University Board of Trustees

From: David Creamer and Bruce Guiot

Subject: Cintrifuse Syndicate Fund II

Date: December 6, 2017

Cintrifuse is a startup catalyst public/private partnership that exists to build a sustainable tech-based economy for the Greater Cincinnati region. Its purpose is to advocate for entrepreneurs leading high-growth startups by attracting, inspiring, and supporting them on their journey. Cintrifuse brings together a network of large companies, universities, investors, and startups.

Cintrifuse has proposed a customized engagement plan for Miami University which could provide opportunities to benefit students through community engagement, curriculum development, experiential learning, and commercialization assistance. The Farmer School of Business is already engaged with Cintrifuse through the renting of space in their facility in Cincinnati's Over the Rhine neighborhood. Cintrifuse believes the relationship could extend well beyond Miami's entrepreneurship program. Miami University will need to designate a point person to customize, maximize, and coordinate these various opportunities and activities.

One tool Cintrifuse uses to further its mission is through its Syndicate Funds, a series of fund of national early-stage venture capital funds focused on technology and life sciences. The Funds seeks to connect investors to a broad network of startups, generate investment in regional startups, and create attractive financial returns for its limited partners. A key metric used is the Regional Economic Multiplier (REM), which stood at 5 to 1 (\$140 million raised by local startups and \$26 million of capital drawn by the underlying funds) at June 30, 2017.

Investment in the Syndicate Funds provides access to the underlying venture capital managers for:

- students (for student startup ventures)
- faculty (to bring experiential learning into the classroom)
- administration (to gain insights into where we might want to focus research efforts and future curriculum, to understand what skill sets our students may need to enter the future workforce, and to see visions of future technology and industry needs)
- better access to the region's large companies that are also investors and assistance with future commercialization

Fund I (2013 vintage) raised \$57 million in investor commitments and is fully committed with investments in 17 underlying funds with vintages from 2012-2017 and four direct investments in regional startups. At this early stage, it is carrying a 1.3x gross multiple valuation, has exposure to 449 underlying companies, and is 52% called. 32% of the underlying companies have been marked up, with 7% marked down.

Fund II had its first closing on June 30, 2017 with \$32.25 million out of a target of \$80 million in commitments. A second closing is planned for December 2017. Investments have been made in two underlying funds thus far.

We recommend committing \$1 million to Fund II for the December 2017 closing. This investment will be in the non-endowment fund's long-term capital component.

Fund II has a 1.25% annual management fee with a 5% carried interest (performance fee) over an 8% preferred return. The term is 13 years with the possibility of three one-year extensions. The minimum investment is \$1 million.

Venture capital funds of this nature are illiquid and the underlying startup businesses typically carry high failure rates. The expectation is that the fund will have diversification through exposure to a large number of businesses, across the country, with managers with established track records.

Thank you.

OCIO Authorization R2018-xx

WHEREAS, The Miami University Board of Trustees (Board) is responsible for managing all of the University's investments and cash; and

WHEREAS, the Board is authorized under Ohio law to delegate trust duties with respect to its investments and cash; and

WHEREAS, the University and the Miami University Foundation (Foundation) are parties to a Pooled Investment Agreement dated July 1, 2011, as amended July 1, 2015 (Pooled Investment Agreement), under which the University, as Trustee, transferred title to the University's endowment funds (Endowed Funds) and quasi-endowment funds (Quasi-Endowed Funds), to the Foundation, in trust, for the Foundation to hold, manage and invest along with the Foundation's pooled investment funds (collectively, Pooled Investment Fund) in accordance with specified standards of care; and

WHEREAS, the University and the Foundation agree that the Foundation may more effectively discharge its obligations to the University (as well as its own investments and asset management) by engaging independent management with an expertise in institutional investment on behalf of university and foundation clients, also known as an "Outside Chief Investment Officer" (OCIO), to manage and invest the Pooled Investment Fund; and

WHEREAS, the University will participate, in the diligence and selection process of an OCIO and contract negotiations and agreement upon final terms with an OCIO (collectively, University Oversight Function); and

WHEREAS, the University wishes to delegate the University Oversight Function to the chair of the Board's Investment Subcommittee and the Senior Vice President for Finance and Business Services and Treasurer (the Delegates), to be discharged by the Delegates in their sole discretion and consistent with their prescribed duties and obligations; and

WHEREAS, in order to effectuate the foregoing, the Board wishes to permit the Foundation to assign the Pooled Investment Agreement, and its duties thereunder, in whole or in part, to an OCIO, together with such amendments or modifications thereof to the Pooled Investment Agreement as the Delegates believe necessary or appropriate to effectuate the OCIO Agreement (as defined below), if any, without the prior written consent of the University;

NOW THEREFORE BE IT RESOLVED: The Board authorizes and approves the University's continued participation in the Pooled Investment Agreement (to be assigned as authorized below) and the Foundation's intention to engage an OCIO to manage and invest the Pooled Investment Fund;

NOW THEREFORE BE IT FURTHER RESOLVED: The Board authorizes and approves the University's undertaking of the University Oversight Function, with the understanding that the Foundation will retain its duties and obligations for all matters relating to the solicitation and evaluation of an OCIO;

NOW THEREFORE BE IT FURTHER RESOLVED: The Board hereby authorizes and approves the Delegates, and each of them severally, on behalf of the University, to discharge the University Oversight Function, in their sole discretion and consistent with their prescribed duties and obligations;

NOW THEREFORE BE IT FURTHER RESOLVED: In the event that the Foundation determines to engage an OCIO, the University hereby authorizes and approves of:

(i) an assignment, in form and content as deemed acceptable by the Delegates and approved in writing by the University's General Counsel, of the Pooled Investment Agreement to permit the Foundation to assign the Pooled Investment Agreement, and its duties or other terms thereunder, in whole or in part, to an OCIO, along with other related agreements and undertakings, if any, (collectively, the OCIO Agreement);

(ii) the execution of the OCIO Agreement, in form and content acceptable to the Delegates and approved in writing by the University's General Counsel, together with such amendments or modifications of the Pooled Investment Agreement as the Delegates believe necessary or appropriate to effectuate the OCIO Agreement; and

(iii) such other actions, consents, agreements, instructions or undertakings or other matters of any kind, to be made in the name or on the University's behalf, as the Delegates, with the written approval of the University's General Counsel, believes to be necessary or appropriate;

in each case without the requirement of any further action, consent or approval thereof by the Board; and

NOW THEREFORE BE IT FURTHER RESOLVED: The Delegates, and each of them, is hereby authorized and directed to sign or certify any and all actions, consents, agreements, instructions or undertakings of any kind of any kind, and to take all such actions or furnish all such instructions as they determine to be necessary or appropriate in their sole discretion, in the name of and on behalf of the University and the Board, in connection with the foregoing resolutions.

Miami University
Endowment Model

Yellow cells are variable inputs

| Fiscal Year | Endowment Balance | Quasi- | | | | | Ending Balance |
|----------------|----------------------|---------------------|-----------------------|------------------------|----------------------------------|------------------------|------------------|
| | | Endowment Pledge | Endowment Addition | Endowment Additions | Administrative Fee and Payout | Investment Earnings | |
| | | \$ 75,000,000 | 5 Annual Inst | \$5 M Per Year | 5.00% | 7.00% | |
| 2016 | \$ 444,154,847 | | \$ 10,000,000 | \$ 5,000,000 | \$ 22,207,742 | \$ 31,090,839 | \$ 468,037,944 |
| 2017 | \$ 468,037,944 | | \$ 15,000,000 | \$ 5,000,000 | \$ 23,401,897 | \$ 32,762,656 | \$ 497,398,703 |
| 2018 | \$ 497,398,703 | \$ 75,000,000 | \$ 25,000,000 | \$ 5,000,000 | \$ 24,869,935 | \$ 34,817,909 | \$ 537,346,677 |
| 2019 | \$ 537,346,677 | \$ 75,000,000 | \$ 40,000,000 | \$ 5,000,000 | \$ 26,867,334 | \$ 37,614,267 | \$ 593,093,610 |
| 2020 | \$ 593,093,610 | \$ 75,000,000 | \$ 55,000,000 | \$ 5,000,000 | \$ 29,654,681 | \$ 41,516,553 | \$ 664,955,483 |
| 2021 | \$ 664,955,483 | \$ 75,000,000 | \$ 70,000,000 | \$ 5,000,000 | \$ 33,247,774 | \$ 46,546,884 | \$ 753,254,592 |
| 2022 | \$ 753,254,592 | \$ 75,000,000 | \$ 75,000,000 | \$ 5,000,000 | \$ 37,662,730 | \$ 52,727,821 | \$ 848,319,684 |
| 2023 | \$ 848,319,684 | \$ 75,000,000 | \$ 75,000,000 | \$ 5,000,000 | \$ 42,415,984 | \$ 59,382,378 | \$ 945,286,078 |
| 2024 | \$ 945,286,078 | \$ 75,000,000 | \$ 75,000,000 | \$ 5,000,000 | \$ 47,264,304 | \$ 66,170,025 | \$ 1,044,191,799 |

Actual Performance

| | | | | | | | |
|------|---------------|--------------|--------------|--------------|--------------|----------------|---------------|
| 2016 | \$444,154,847 | | \$10,715,354 | \$19,043,233 | \$20,930,385 | (\$19,209,480) | \$433,773,569 |
| 2017 | \$433,773,569 | \$24,605,411 | \$15,791,252 | \$21,332,000 | \$19,744,046 | \$47,895,136 | \$499,047,911 |