

Real Return Strategy Process & Recommendations

March 23-24, 2016

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Agenda

- I. Real Return Search Process & Allocation Objectives
- II. Manager Search Process
- III. Education: What is Inflation Investing?
- IV. Portfolio Considerations
- V. Summary of Recommendations
- VI. Requested Board Action

I. Real Return Search Process & Allocation Objectives



2015/2016 Real Return Search Process Timeline

Mar
2015

- Contract with Albourne America signed. Albourne and TMRS determined the focus for the 2015 Real Return manager search would be focusing on building a portfolio of liquid real return strategies and identifying core holdings across a variety of private strategies. The initial search would focus on finding institutional quality managers complementary to TMRS' current Real Return portfolio.

Q2-2015 to
Q1-2016

- Conducted manager reviews through a multi-phase evaluation process.
- Multiple conference calls with Albourne and onsite visits to score and determine best candidates for TMRS.

Q4 2015

- December 2015 Board Meeting: TMRS and Albourne presented to the Board the search process utilized for the Real Return search as well as manager recommendations. Nuveen, Cohen & Steers, and Magnetar were approved for a total of \$800 million in commitments.
- 2016 Real Return search process approved for a total of \$800 million in new commitments.

Q1 2016/
Current

- **March 2016 Board Meeting:** TMRS and Albourne will present the Board with the search process utilized for the Real Return search as well as manager recommendations. Two recommendations for a total of \$200 million in commitments is being presented.

Real Return Execution Plan

Pacing Plan Update

- July 30, 2015: Board approves doubling of Real Return allocation from 5% to 10% of the total portfolio.
- December 3, 2015: Board approves \$800 million of Real Return Investments. Based on these approvals the real return portfolio is approximately 72% allocated. \$800 million pacing plan for 2016 approved.
- March 23, 2016: Staff & Albourne recommend \$200 million of new Real Return Investments. Real Return portfolio would be approximately 78% allocated taking account of new recommendations.

Subsequent Allocation Plans

- Q2-Q4 2016: Recommendations to allocate approximately \$600 million in additional new allocations across liquid and private Real Return assets in order to fully implement, from a dollar allocation basis, the targeted Real Return Portfolio.

II. Manager Search Process



Manager Search Process Review

Step 1

- **Manager Universe Analysis & Screen**
 - TMRS performs portfolio and market analysis
 - Based on analysis, meetings are sought with qualified managers
 - Meetings taken with qualified managers; others eliminated

Step 2

- **Semi-Finalist Candidate Analysis**
 - 156 Real Return Meetings taken by the Evaluation Team
 - 98 Distinct Managers Assessed
 - Managers scored 1 or 2: Managers scored '1' advance

Step 3

- **Finalist Candidate Analysis**
 - 9 Managers Currently Selected as Finalists
 - Additional Due Diligence Materials Obtained and Reviewed
 - Managers Scored A, B or C: Managers Scored 'A' Advance

Step 4

- **Final Due Diligence & Manager Selection**
 - 'A' rated Finalist Funds enter final due diligence
 - Final Scoring Matrices are compiled for distinct possible recommended funds and immediately comparable fund products
 - 2 Funds Selected for Recommendation to Board of Trustees

Manager Scoring Matrix (1 of 3)

- Scoring was compiled by TMRS Investment Staff and discussed with Albourne to determine advancement in the search process:

Manager Screen & Universe Analysis Scoring Matrix / Finalist Selection	
Scoring Category	Score / Outcome
Manager Screen - Is vehicle consistent w/ TMRS' objectives?	Yes - Take Meeting; No - Don't Take Meeting
Manager Analysis - Does vehicle have adequate capacity and timeline? - PPPST* Preliminary Review	1 - Advance; 2 - Stop Research

- 98 Managers Advance Past Initial Screen
- 9 Managers Currently Scored '1' (9.2% Selection Rate)

Manager Scoring Matrix (2 of 3)

- Based on initial scoring screen, further diligence efforts were prioritized based on a number of factors:

Final Due Diligence Selection Process	
Scoring Category	Score
Finalist Manager Review <ul style="list-style-type: none">- Due Diligence Questionnaire Review- Detailed PPPST* Review- In-depth Manager Qualifications Review- Compliance with TMRS IPS- Verification of Research, References, Further Market Research	A - Prioritize for Final Due Diligence B - Perform More Research C - Stop Research / Manager not Selected

- 2 Managers Currently Scored 'A' (2.0% Selection Rate)

Manager Scoring Matrix (3 of 3)

- Scoring was provided by TMRS and discussed with Albourne to determine final selection.
- Based on the above criteria, 9 managers were selected for finalist review & 2 managers were selected for final due diligence:

Final Due Diligence Scoring Matrix	
Scoring Category	Possible Points*
People (Firm and Team)	0 - 40 points
Process (Sourcing Underwriting and Managing)	0 - 40 points
Performance (Historical / Expected)	0 - 40 points
Strategy (Attractiveness of Opportunity / Portfolio Fit)	0 - 40 points
Terms (Fees, Liquidity, etc.)	0 - 20 points
Total	100†

*Scoring matrices utilize difference calibrations depending on the strategy being utilized.

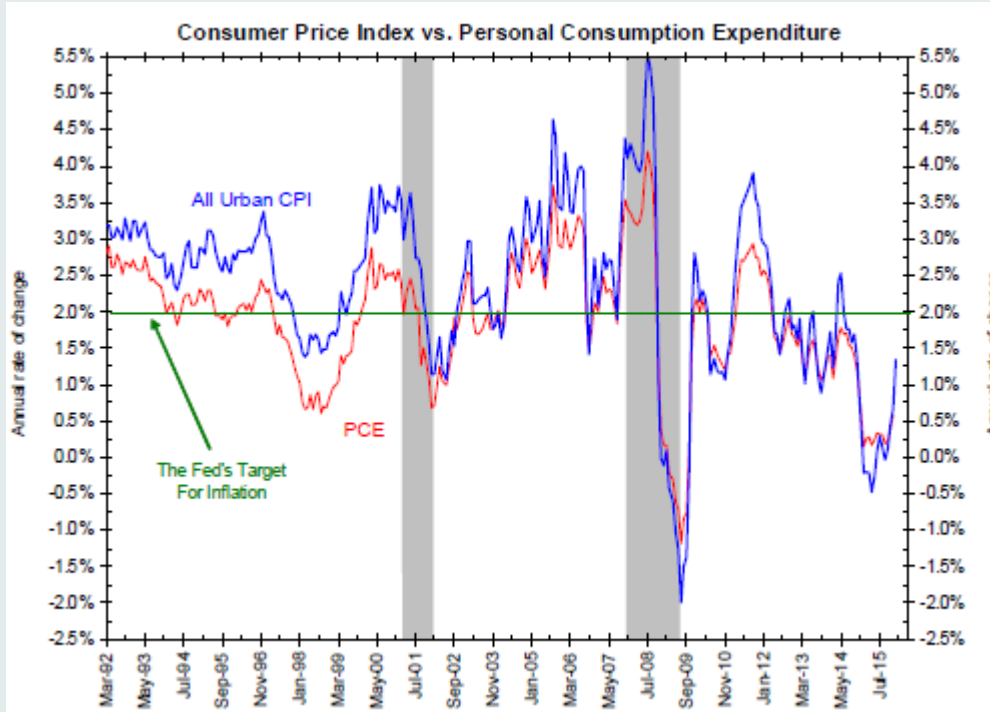
†Selected managers standardized to a score of 100 to allow comparability among selected managers.

III. Education: What is Inflation Investing?



What is Inflation Investing? (1/4)

The Statistical Experience



Sources: Chart - Bianco Research, "Charts of the Week", February 24, 2016; Yields - Barclay's Live

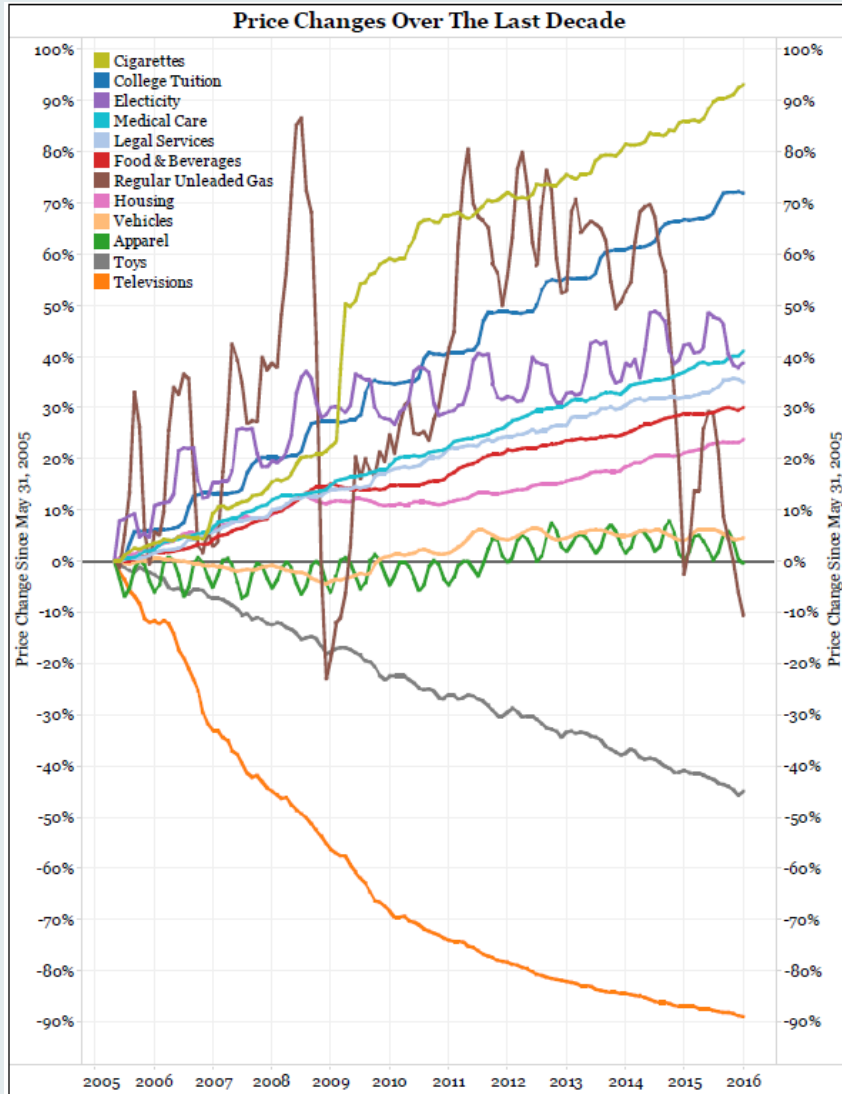
Real Return Program Highlights

- The TMRS IPS stipulates a full market cycle performance goal of CPI + 400 basis points.
- Based on a look-back to 1992, when measured on an annual basis, the TMRS goal for real return is bounded by 2.0% on the downside and 9.5% on the upside.
- Global Inflation Linked Bonds (GILB's) current yield: -0.3% (duration 12.1)
- Treasury Inflation Protected Securities (TIPS) current yield: 0.54% (duration 8.3)

The Statistical Experience of CPI does not reflect consumer or investor experiences – Consumer & Investor experiences are subject to greater variation due to personalized consumption baskets and market fundamentals.

What is Inflation Investing? (2/4)

The Consumer Experience



Source: Bianco Research, "Charts of the Week", February 24, 2016

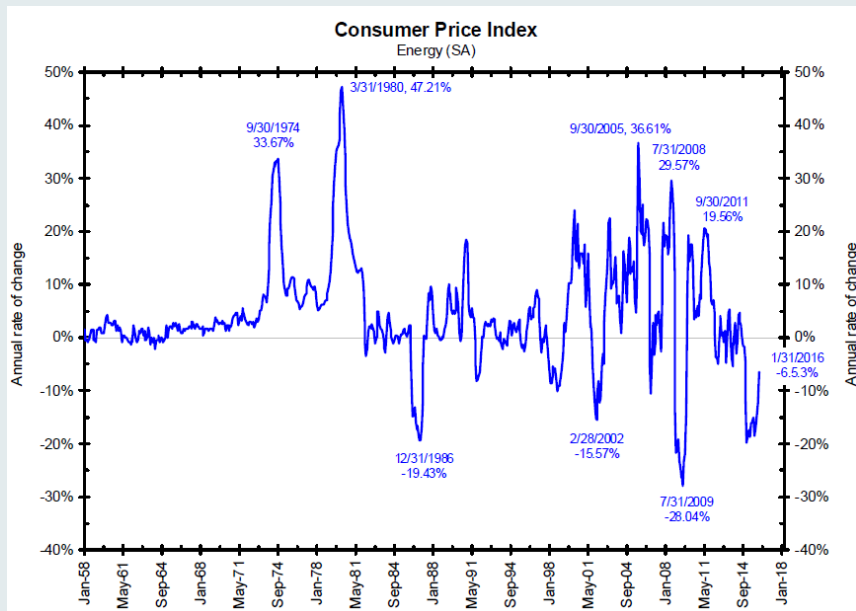
Real Return Program Highlights

- The TMRS IPS states that Real Return will include strategies that have favorable risk-adjusted returns as well as the benefit of hedging inflation for the System.
- Actual inflation on an item by item basis differs wildly – consumers experience inflation based on their personal basket of goods.
- The chart to the left documents consumers experiencing more inflation in non-discretionary expenditures than discretionary expenditures.

What is Inflation Investing? (3/4)

The Investor Experience

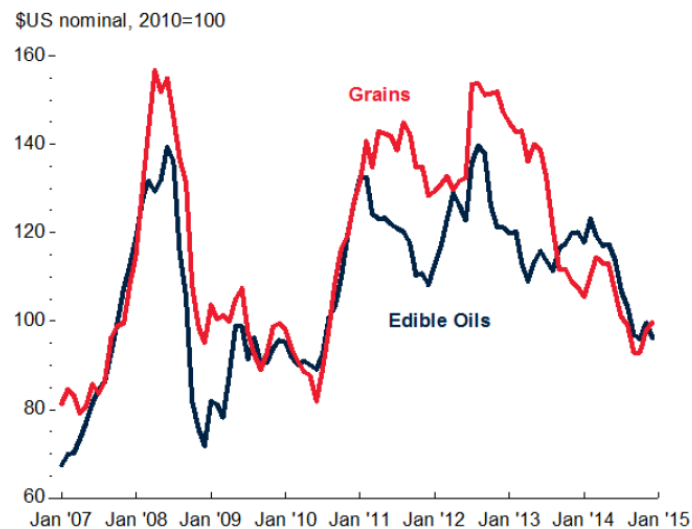
Magnetar Opportunity Set



Source: Bianco Research, "Charts of the Week", February 24, 2016

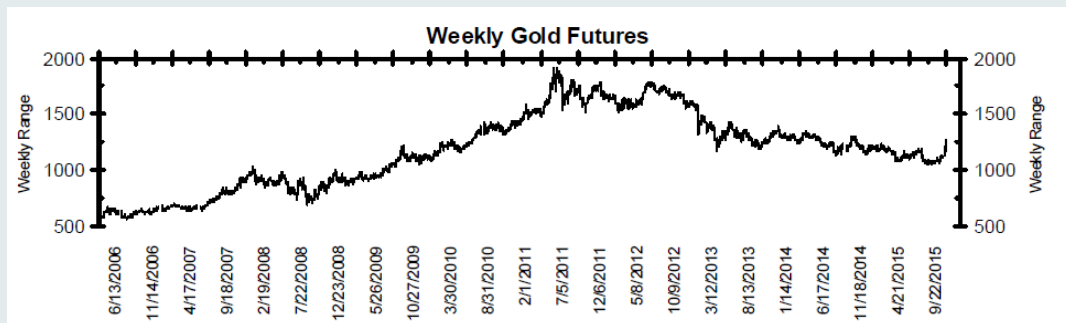
AMERRA Opportunity Set

FIGURE 2 Food price indices



Source: World Bank.

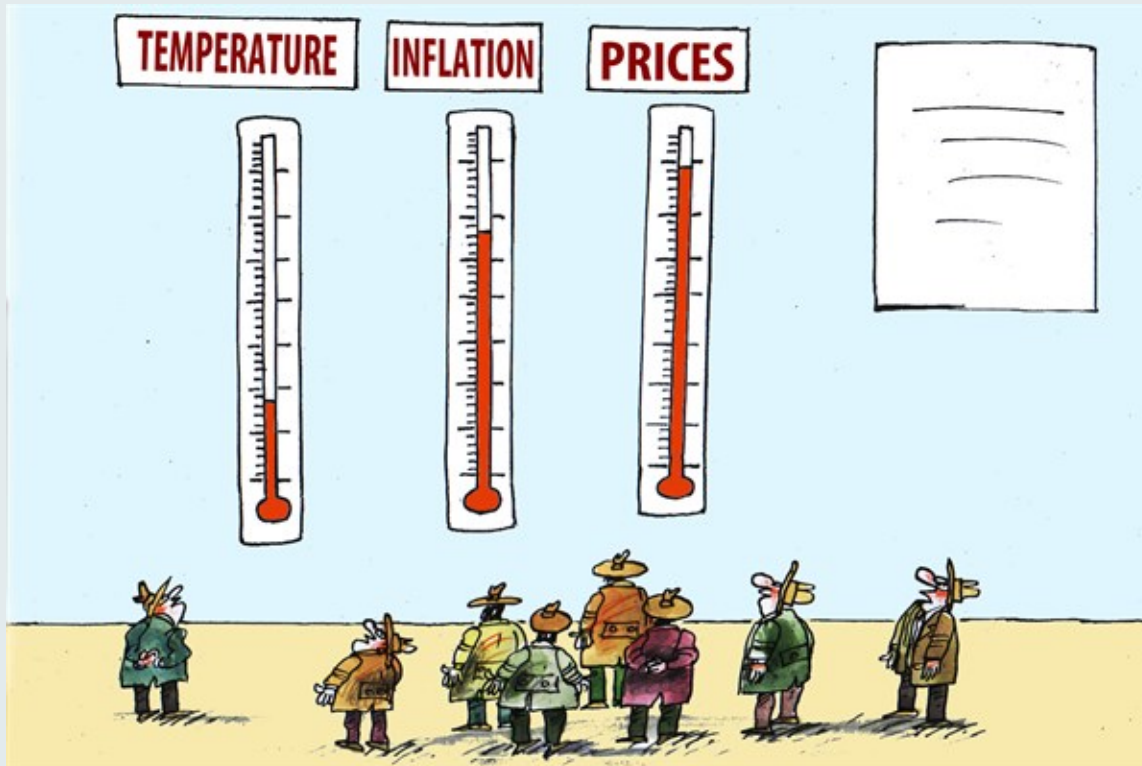
Orion Opportunity Set



Source: Bianco Research, "Charts of the Week", February 24, 2016

What is Inflation Investing? (4/4)

The Common Experience



Source: Pavel Constantin, May 16, 2013, Cagle.com

“Data Isn’t Perfect”



**DIVERSIFY &
DOWNSIDE
PROTECT**

The TMRS IPS emphasizes Inflation Protection, Return Enhancement & Diversification as key goals for the Real Return portfolio. Individual recommendations are seeking to achieve the first two objectives and cumulative recommendations the last objective.

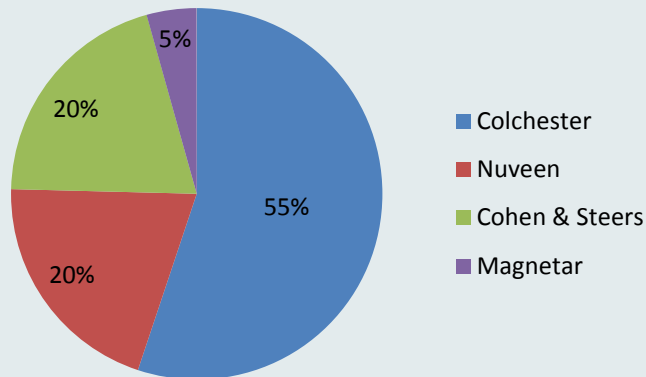
IV. Portfolio Considerations



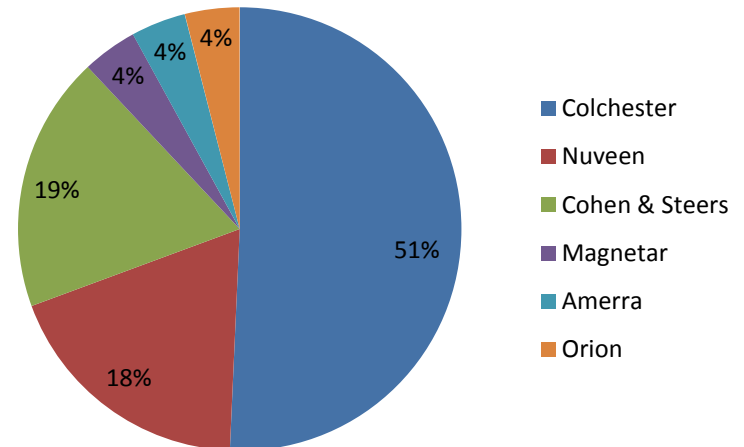
Portfolio Considerations

Diversification & Risk Management (1 of 4)

**Pre-Recommendation Portfolio
Exposure by Manager**
(by Adj. Commitments)



**Post-Recommendation Portfolio
Exposure by Manager**
(by Adj. Commitments)

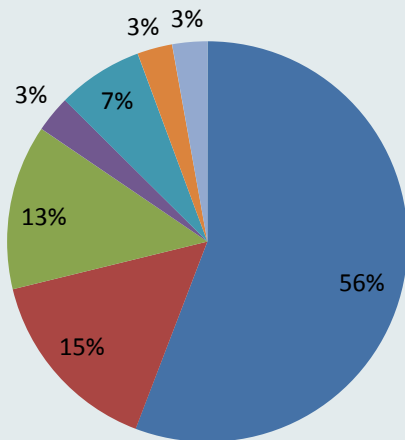


Recommendations further diversify the real return portfolio by increasing manager count and strategy.

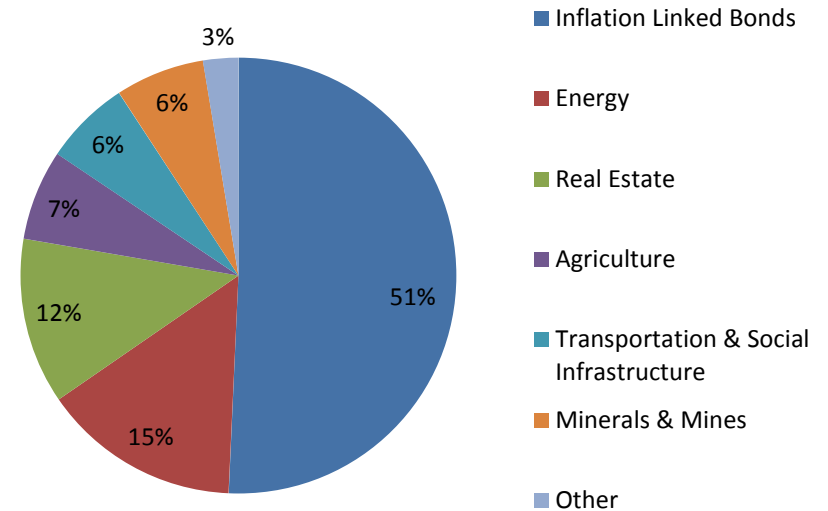
Portfolio Considerations

Diversification & Risk Management (2 of 4)

Pre-Recommendation Portfolio Exposure by Sector



Post-Recommendation Portfolio Exposure by Sector

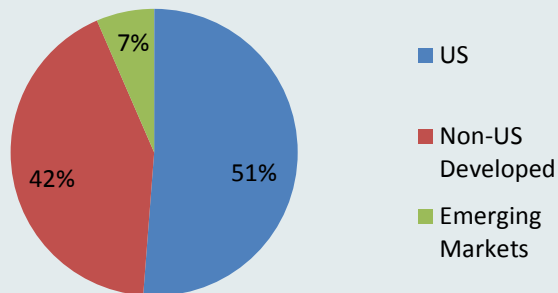


Recommendations further diversify the TMRS portfolio across global Real Return sectors.

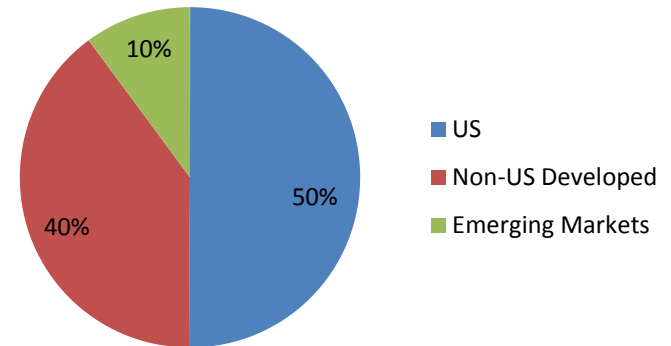
Portfolio Considerations

Diversification & Risk Management (3 of 4)

**Pre-Recommendation Portfolio
Exposure by Geography**
(by Adj. Commitments)



**Post-Recommendation Portfolio
Exposure by Geography**
(by Adj. Commitments)

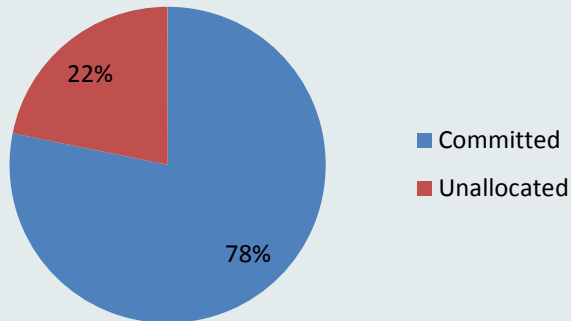


New recommendations have underlying foreign exposures that are predominantly US Dollar denominated. The GILB portfolio, which was the starting point for the Real Return program implementation, is approximately 60% internationally allocated.

Portfolio Considerations

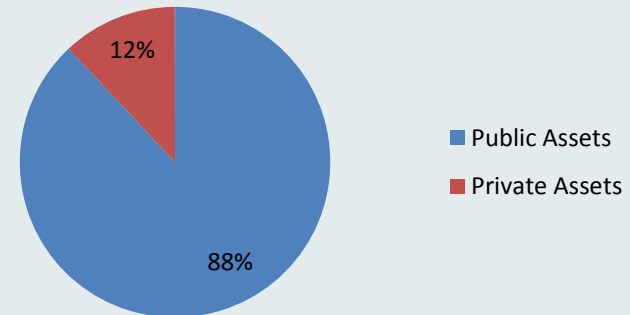
Diversification & Risk Management (4 of 4)

**Post-Recommendation Portfolio
Committed vs. Unallocated**
(by Adj. Commitments)



As of December 2015 Recommendations, Committed and Unallocated were 72% and 28% respectively. Prior to December 2015 the portfolio was 40% committed.

**Post-Recommendation Portfolio
Public vs. Private Assets**
(by Adj. Commitments)



As of December 2015 Recommendations, Public & Private Assets were 96% and 4% respectively.

Recommendations make substantial progress toward the implementation plan for the Real Return asset class – on target with asset allocation pacing models.

V. Summary of Recommendations



Executive Summary of Manager Recommendations

Summary of Recommendations		
Recommended Investment	Strategy Classification	Recommended Amount
AMERRA Agri Fund III, LP (AMERRA)	(Private) Real Return	\$100 million
Orion Mine Finance Fund II, LP (Orion)	(Private) Real Return	\$100 million
Total Recommendation		\$200 million

Top Candidate Characteristics – AMERRA (2/2)

\$100 Million Recommendation

Highlights

Portfolio Manager(s): Nancy Obler & Craig Tashjian

Firm AUM: \$1.3 billion

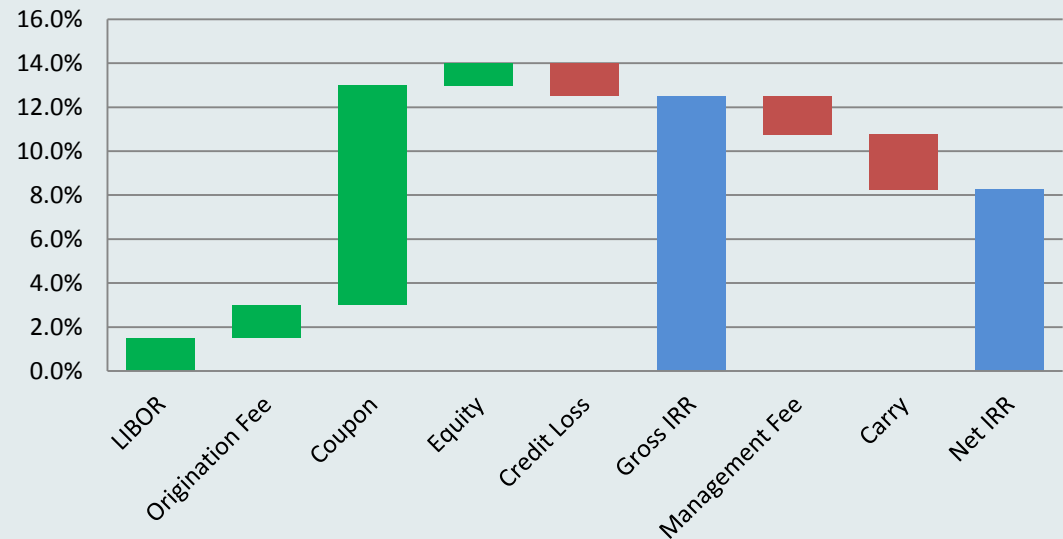
Fund III Size: \$750 million*

Investment Professionals: 14

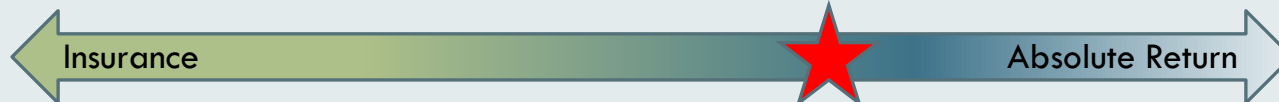
Office Location(s): New York

**Fund size refers to total capital available in the strategy in the fund, parallel entities and separate accounts.*

AMERRA Return Bridge



Return Profile Emphasis



Top Candidate Characteristics – AMERRA (2/2)

\$100 Million Recommendation

AMERRA seeks to address working capital and capital expenditure financing need of international agribusiness participants offering investors exposure to agricultural commodity finance solutions for production, transportation, storage, refinement, distribution and marketing of commodities. AMERRA will invest in senior and junior debt providing investors with direct exposure to commercial enterprises operating in ag markets with the focus being on soft commodities, agro-industrial/grains, and edible oils sectors. Through collateralization and/or tightly structuring debt, the partnership diversifies risk while maintaining attractive yield levels.

Investment Case

- Contractual yield with strong credit fundamentals
- Access to private agriculture sector
- Strength of team and structuring process
- Underlying commodity exposure is dollar denominated

Issues to Consider

- Lending in foreign jurisdictions
- Underlying commodity value volatility
- Sector specific exposure
- More absolute return orientation vs. insurance orientation (less inflation sensitivity)

Scoring Matrix

Category	AMERRA	Comp. Mgr. A	Comp. Mgr. B
People	25.0	20.0	17.5
Process	22.5	17.5	20.0
Performance	17.5	20.0	15.0
Strategy	25.0	20.0	20.0
Terms	10.0	12.5	10.0
Total Points	100.0	90.0	82.5

Top Candidate Characteristics – Orion (1/2)

\$100 Million Recommendation

Highlights

Portfolio Manager: Oskar Lewnowski

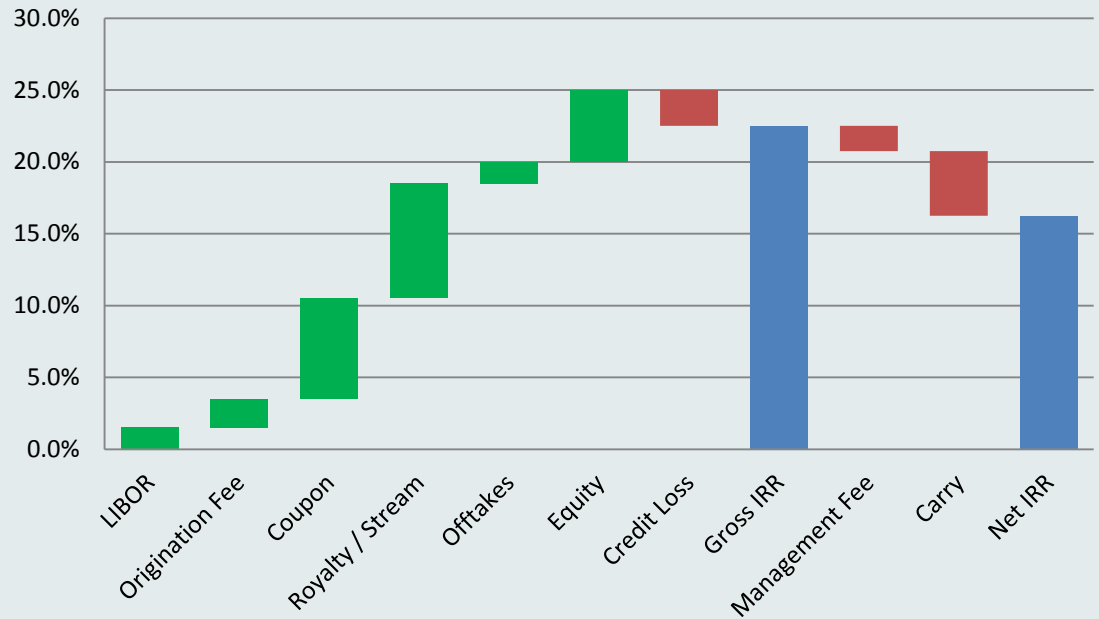
Firm AUM: \$2.0 billion

Fund II AUM: \$2.0 billion target

Investment Professionals: 12

Office Location(s): New York, Denver, London, Sydney

Orion Return Bridge



Return Profile Emphasis



Top Candidate Characteristics – Orion (2/2)

\$100 Million Recommendation

Orion is a leading global metals fund manager engaged in purchasing, financing, transporting, and selling mine output to end customers – the firm has positioned itself to be a one-stop capital provider. The fund will seek to finance the construction of mid- to later-stage mine projects in politically stable regions through a combination of debt, equity and production-linked investments (e.g., royalties, streams and offtakes). Orion will invest its portfolio in a variety of metals including both base and precious. Orion heavily emphasizes environmental, social, and governance review in its underwriting processes.

Investment Case

- Contractual yield with strong upside participation potential
- Access to low marginal cost curve mining pre-production and producing assets
- Strength of team and structuring process
- Underlying commodity exposure is dollar denominated

Issues to Consider

- Lending/investing in foreign jurisdictions
- Underlying commodity value volatility
- Sector specific exposure
- More insurance orientation vs. absolute return orientation (more inflation sensitivity for trade off of higher commodity beta)

Scoring Matrix

Category	Orion	Comp. Mgr. A	Comp. Mgr. B
People	25.0	20.0	22.5
Process	25.0	25.0	22.5
Performance	15.0	17.5	10.0
Strategy	25.0	23.5	21.0
Terms	10.0	10.0	7.5
Total Points	100.0	96.0	83.5

VI. Requested Board Action



Approval of Recommendation

- TMRS Staff and Albourne recommend that the Board of Trustees approve the following investment allocations:

Manager Recommendations:

- | | |
|----------------------------------|---------------|
| • Orion Mine Finance Fund II, LP | \$100 million |
| • AMERRA Agri Fund III, LP | \$100 million |