

Risk Parity Allocation

AQR GRP EL 20 Offshore Fund LTD.

June 6, 2012

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Risk Parity Overview

Basic premise: Risk drives portfolio returns, so allocate risk, not capital

- Balancing risks across asset classes improves the consistency of returns and provides much better diversification
- Single asset class beta portfolios are unnecessarily risky
- Most asset classes have similar risk adjusted returns, or Sharpe ratios, over long periods of time
- Balanced risk portfolios at comparable risks to standard efficient frontier portfolios have historically outperformed

Objective: Everything in the portfolio matters, but nothing to matter too much.

Goal: Improved Sharpe Ratio versus a traditional mean-variance portfolio.

Major requirement: Must use explicit leverage to achieve higher return targets when cash rates are low

PSERS Risk Parity UPDATE

PSERS Current View:

- 5% dedicated allocation to Risk Parity
- One existing manager – Bridgewater Associates, LP

Manager Search:

- Wilshire identified several managers for consideration and Staff and Wilshire met with two of them
- AQR, along with Bridgewater, is deemed one of the leaders in risk parity

Other Comments:

- Focus on manager investment process
- Additional focus is on how correlated their product is to various beta markets

AQR Capital Management, LLC

Overview of AQR Capital Management, LLC

- Established in 1998 in Greenwich, CT
- \$51.8 billion AUM and 265 professionals,
- 110 investment professionals
- Majority owned by 18 principals with a minority ownership position by Affiliated Managers Group.

History of Risk Parity at AQR

- Risk Parity strategies began in January 2006 with the GRP Fund, which included four Broad Asset Classes:
 - Equity
 - Interest Rate
 - Inflation
 - Credit/Default
- In the Fall of 2011 AQR closed the GRP Fund and simultaneously opened the GRP-EL Fund, which does not include the capacity curtailed Credit/Default asset class
- Risk Parity Strategies AUM is \$13.5 billion

AQR Capital Management, LLC

Investment Process:

- Select Universe of Risk Premiums
 - Equity Risk (22 different risk premiums)
 - Nominal Interest Rate Risk (5)
 - Inflation Risk (27)
- Construct portfolio of equal risk weightings based on volatility forecasts and size appropriately to achieve the targeted portfolio volatility.
- Rebalance regularly to maintain diversification and steady portfolio volatility through time using dynamic risk management.
- AQR also employs a drawdown control process that is systematic to preserve capital while markets and the portfolio are under extreme stress.

PSERS Performance Benchmark and AQR GRP EL 20 Offshore Fund LTD.

PSERS Custom Performance Benchmark:

- S&P 500 Index (15% weight);
- MSCI EAFE Index Hedged (15%);
- MSCI Emerging Markets Large Index \$ Net (10%);
- Barclays Capital Global Aggregate Hedged Index (35%);
- Barclays Capital World Inflation Linked Bond Index Hedged (10%);
- DJ/UBS Commodity Index (10%); and
- S&P GSCI Precious Metals Index (5%)

Results:

- Annualized return since inception of the GRP-EL 20 Volatility Adjusted Carve Out Gross Returns is 16.7% with a realized Volatility of 18.0% and a Sharpe Ratio of 0.8

AQR Capital Management, LLC

Other

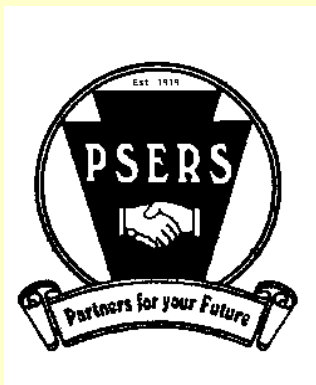
- Relationships with Wilshire: None
- Placement Agents: None
- Political Contributions in PA: None
- Introduction Source: Staff and Wilshire
- History with PSERS: AQR has managed the AQR Offshore Multi-Strategy Fund since 2006

AQR GRP EL 20 Offshore Fund LTD.

Recommendation

Staff, together with Wilshire Associates, recommends (i) that the Board invest \$500 million in the AQR GRP EL 20 Offshore Fund LTD., and (ii) that the Investment Office shall have the discretion to invest additional sums within the target ranges established in Exhibit D of the Investment Policy Statement, Objectives and Guidelines.

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