



**2012
TCDRS
ANNUAL
CONFERENCE**



TCDRS 2012 Investment Update

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May 8, 2012

2011 Economic Review



- ★ Continued, if uneven, global economic growth
- ★ Signs of stronger U.S. job creation
- ★ Unexpected events
 - Japanese earthquake and tsunami
 - “Arab Spring”
 - U.S. debt ceiling standoff
 - S&P downgrade of U.S. debt
 - Thailand flooding

Estimated Performance – periods ending Dec. 31, 2011



| <u>Asset Class</u> | <u>1Yr</u> | <u>3Yrs</u> | <u>5Yrs</u> | <u>10Yrs</u> | <u>20Yrs</u> | <u>30Yrs</u> |
|-------------------------|--------------|--------------|-------------|--------------|--------------|--------------|
| TCDRS Total Fund | -1.0% | 12.3% | 1.7% | 6.2% | 7.2% | 9.9% |
| Domestic Equity | 1.2% | 15.4% | 0.4% | 3.9% | - | - |
| Developed Int'l Equity | -11.9% | 8.6% | -3.9% | 5.1% | - | - |
| Emerging Markets | -19.1% | 18.1% | 1.3% | - | - | - |
| Private Equity * | 9.4% | 10.4% | -0.0% | - | - | - |
| Absolute Return | -3.1% | 10.1% | 1.3% | - | - | - |
| Core Fixed Income | 7.4% | 8.9% | 6.1% | 6.2% | 7.5% | 10.1% |
| High Yield Bonds | 5.7% | 20.4% | 7.4% | 8.2% | - | - |
| Opportunistic Credit | -0.6% | 22.8% | - | - | - | - |
| Distressed Debt * | 3.5% | 17.0% | 7.4% | - | - | - |
| REITs | 1.7% | 19.9% | -3.6% | 10.7% | - | - |
| Commodities | -5.4% | - | - | - | - | - |
| TIPS | 13.2% | 10.0% | 8.5% | - | - | - |
| Private Real Estate * | 12.9% | - | - | - | - | - |
| Cash & Equivalents | -0.1% | 1.2% | 4.1% | - | - | - |

* Estimated performance through 4th quarter 2011

Source: BNY Mellon Performance and Risk Analytics Division
Return calculations are annualized

Performance Comparison



For Periods ending Dec. 31, 2011

| | <u>One Year</u> | <u>Three Years</u> | <u>Five Years</u> | <u>Ten Years</u> |
|------------------------------|---------------------|------------------------|-----------------------|----------------------|
| TCDRS Return | -1.00% | 12.27% | 1.70% | 6.23% |
| Benchmark Return | | | | |
| Large Public Pension Plans * | 0.86% | 10.37% | 1.92% | 5.52% |
| Large Endowments * | 0.95% | 9.56% | 2.47% | 5.88% |

- One year negatively impacted by Non-U.S. equity
- Three year High-Yields helped outperformance
- Ten year helped by lower total equity allocation

* Trust Universe Comparison Service (TUCS) median performance

Asset Allocation



- ★ Determines 90% or more of portfolio returns

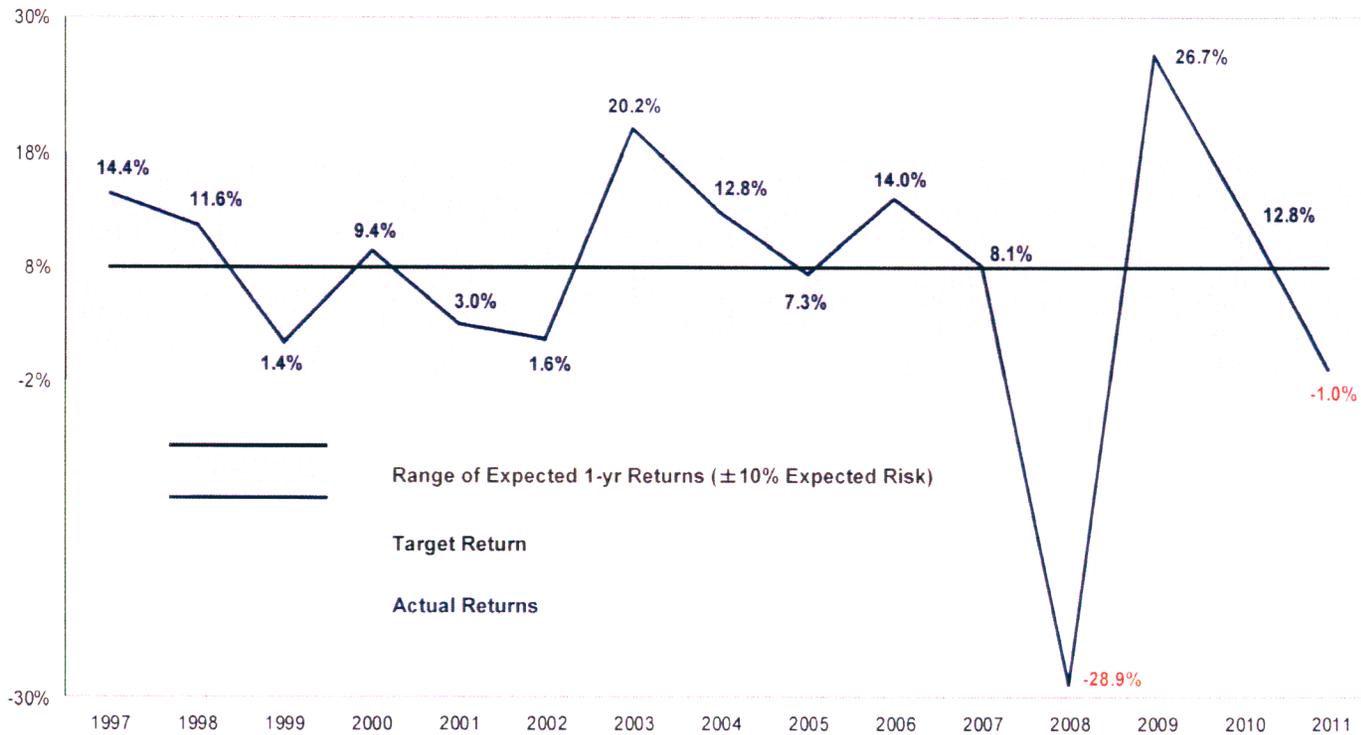
- ★ Two risks
 - Achieving long-term return (will we have enough assets?)
 - Yearly volatility (how much can we lose in any year?)

Risk Management



- ★ TCDRS is different – we pay for investment risk every year
- ★ Focus on managing risk – employer rate stability
 - Reserve returns above 8%
 - Smoothed returns
- ★ Asset allocation looking more like endowment

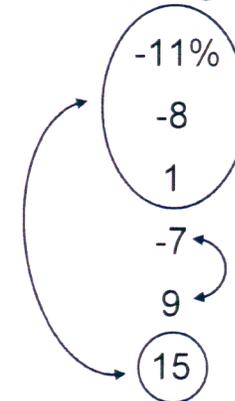
TCDRS Performance 1997 - 2011



Asset Allocation Changes



| | <u>Beg 2007</u> | <u>Beg 2012</u> | <u>Change</u> |
|------------------------|-----------------|-----------------|---------------|
| U.S. Equity | 25% | 14% | -11% |
| Int'l Equity | 20 | 12 | -8 |
| Emerging Mkt Equity | 5 | 6 | 1 |
| Core Fixed Income | 17 | 10 | -7 |
| High Yield & Dist Debt | 7 | 16 | 9 |
| Hedge Funds | 10 | 25 | 15 |
| TIPS | 5 | 0 | -5 |
| REITs | 3 | 3 | 0 |
| Commodities | 0 | 2 | 2 |
| Private Real Estate | 0 | 2 | 2 |
| Private Equity | 8 | 10 | 2 |

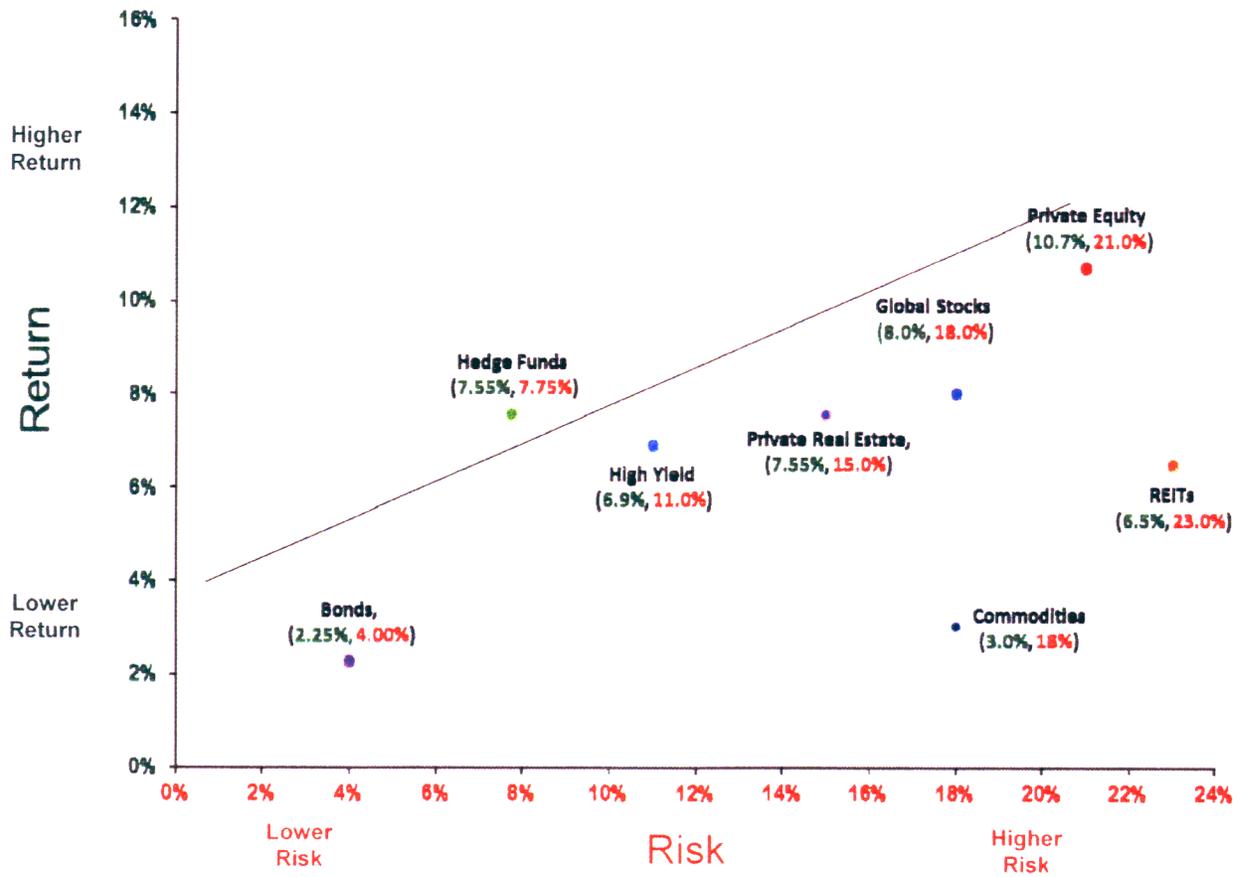


Peer Asset Allocation

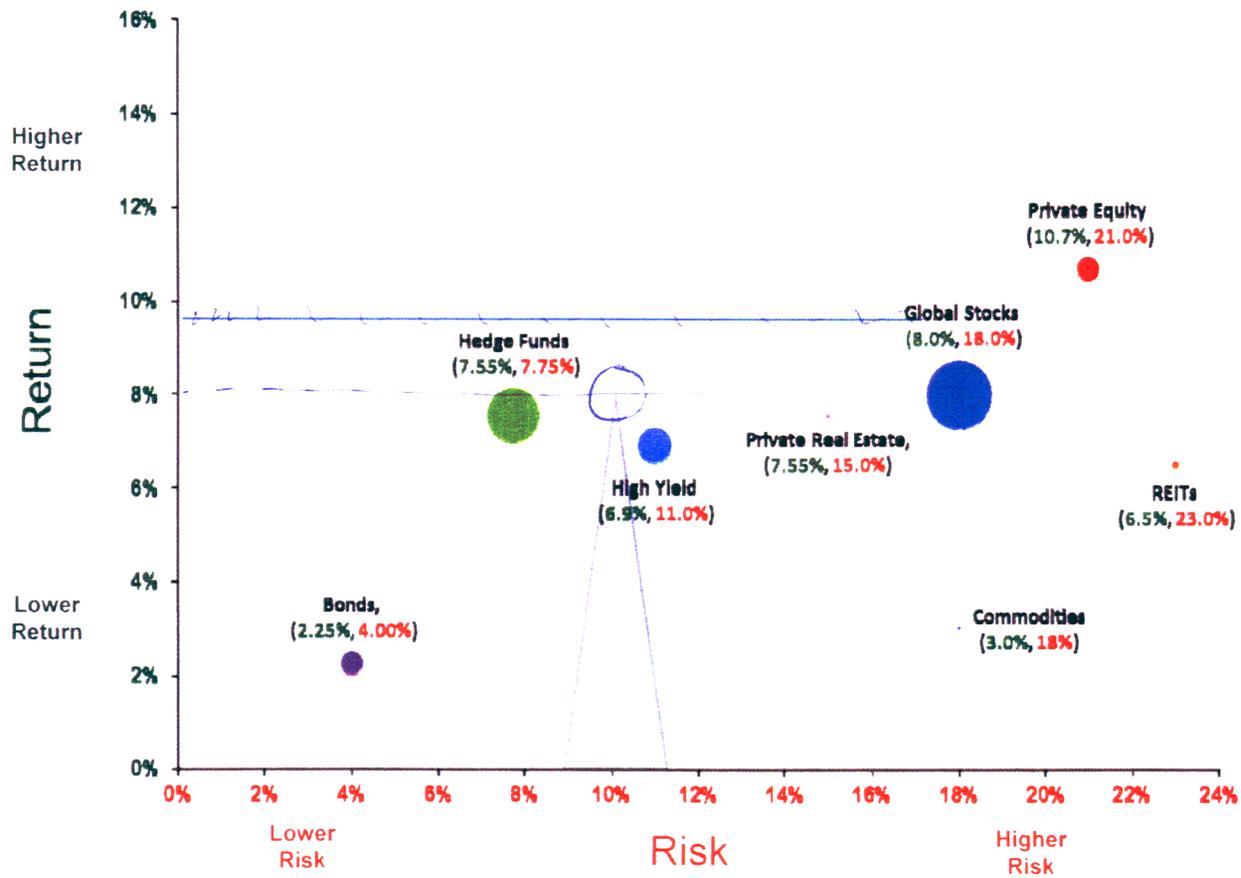


| | Public DB Plans <u>> \$5 Bn</u> | <u>TCDRS</u> | Endowments <u>> \$1 Bn</u> |
|----------------------|--|--------------|----------------------------------|
| U.S. Equity | 33% | 14% | 12% |
| International Equity | 18% | 18% | 16% |
| Core Fixed Income | 28% | 10% | 12% |
| High Yield | - | 16% | 3% |
| Real Estate | 7% | 5% | 8% |
| Private Equity | 7% | 10% | 21% |
| Hedge Funds | 4% | 25% | 20% |
| Other | 3% | 2% | 8% |
| Total | 100% | 100% | 100% |

Balancing Return and Risk



Balancing Return and Risk



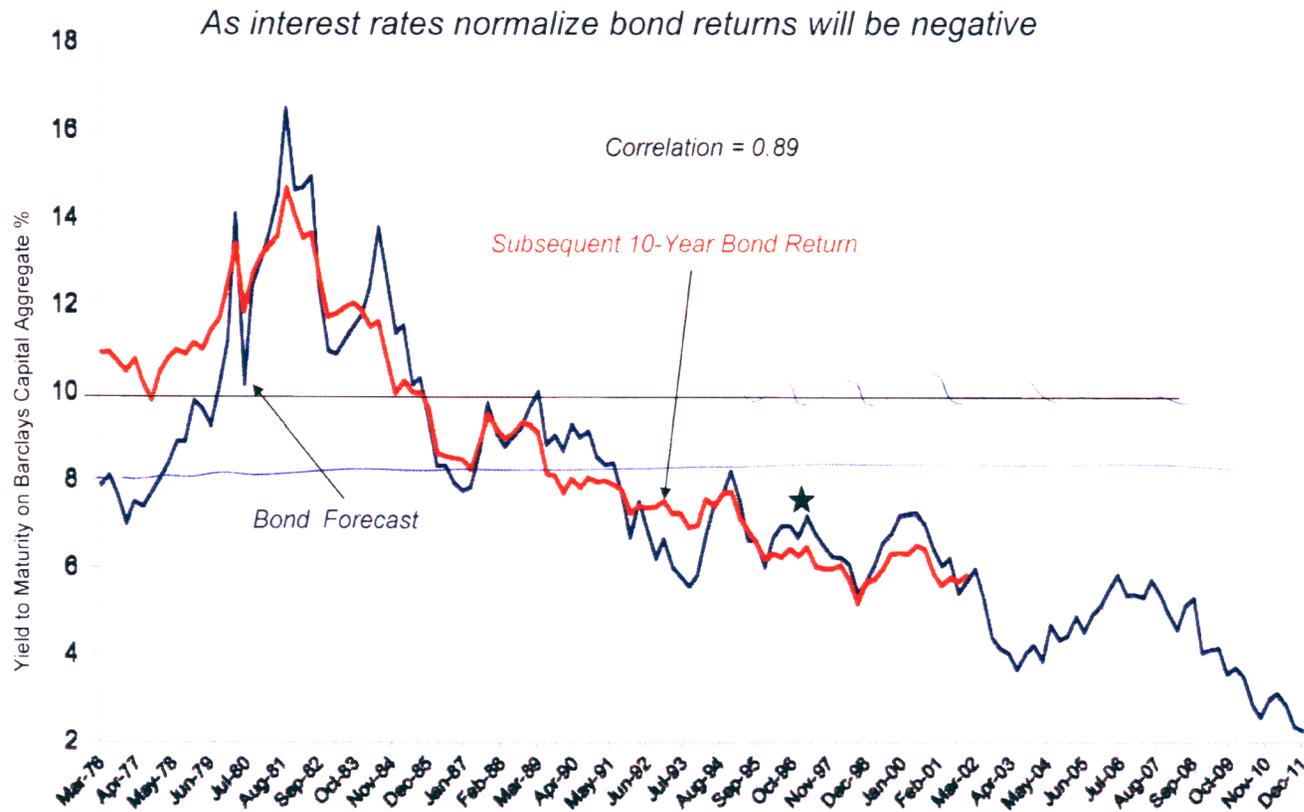
Asset Allocation Changes



Key Asset Classes

| | <u>Bonds</u> | <u>HY Bonds Opp. Credit Distressed Debt</u> | <u>Global Equity</u> | <u>Hedge Funds</u> |
|-----------------|--------------|---|--------------------------|------------------------|
| Expected Return | 2.25% | 6.90% | 8.00% | 7.55% |
| Expected Risk | 4.00% | 11.00% | 18.00% | 7.75% |

Expected Bond Returns at Historic Low



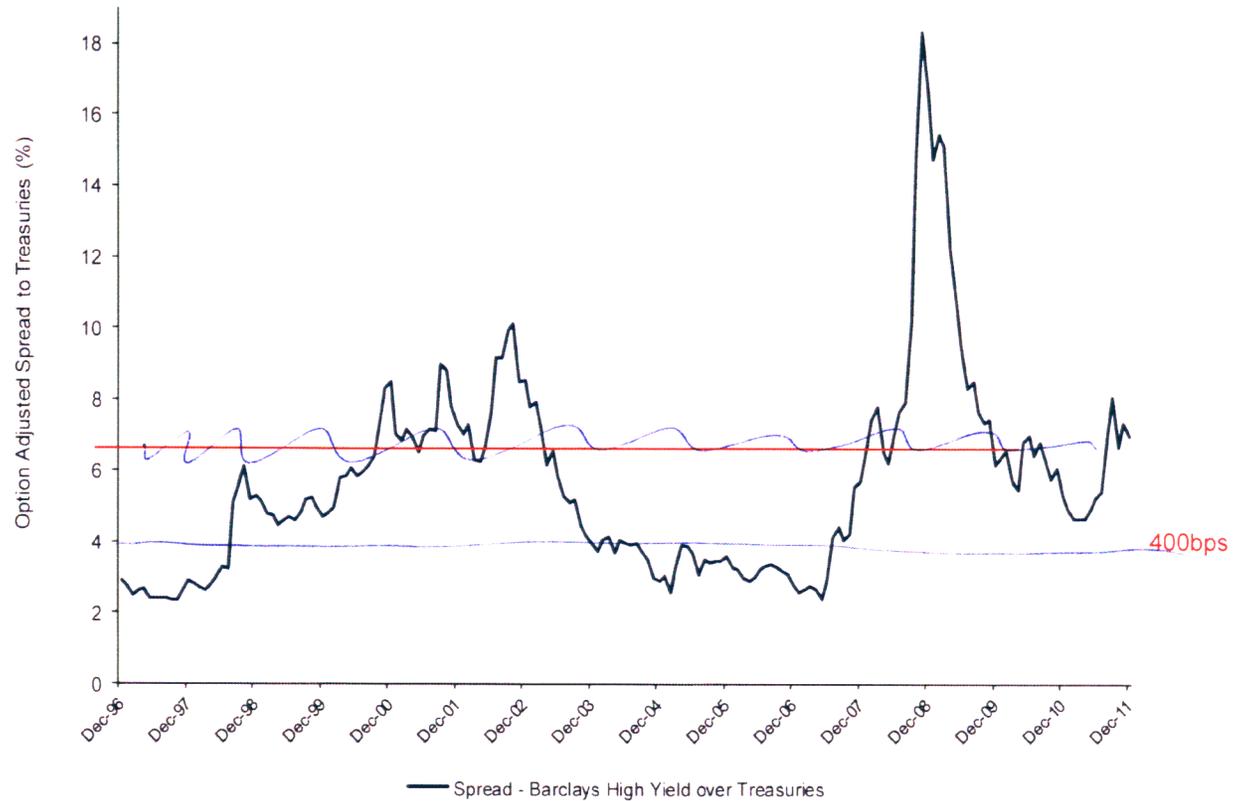
Bond vs. High Yield Performance



| | <u>1 Yr</u> | <u>3 Yrs</u> | <u>5Yrs</u> | <u>10 Yrs</u> |
|-------------------|-------------|--------------|-------------|---------------|
| Core Fixed Income | 7.4% | 8.9% | 6.1% | 6.2% |
| High Yield Bonds | 5.7% | 20.4% | 7.4% | 8.2% |

Higher yields have covered higher risk

High-Yield Spreads Are Attractive



TCDRS High-Yield Bond Investments

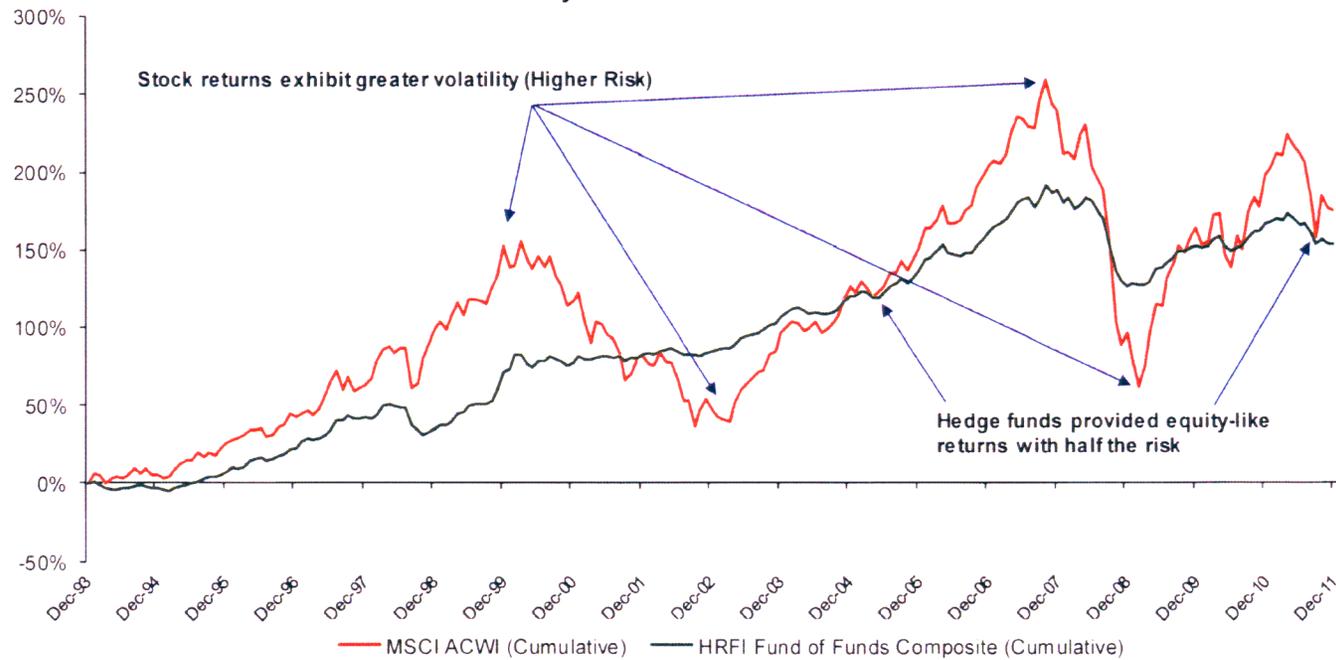


- ★ Began 1999
- ★ Annualized return of 8% over the last 10 years
- ★ Less than 1% default rate
- ★ 70% recovery rate on defaults
- ★ Expect large supply of distressed debt
 - European Banks
 - U.S. Banks
 - Institutional Investors

Hedge Funds Reduce Portfolio Risk



Hedge Fund and Global Equity Performance
(cumulative monthly returns)
January 1994- December 2011



Jan 2012 TCDRS Portfolio - Expected Risk & Return



| | <u>Current Allocation</u> | <u>Replace Hedge Funds with Stocks</u> |
|-----------------|---------------------------|--|
| Expected Return | 7.82% | 7.91% |
| Expected Risk | 11.19% | 14.10% |

2012 Capital Market Assumptions



| | U.S. Stock | Global Stock | Int'l Stock | Emerg Mkts | Priv Equity | Abs Return | Barc Agg | High Yield | REITs | Com-modities | Priv Real Estate |
|----------------------|------------|--------------|-------------|------------|-------------|------------|----------|------------|-------|--------------|------------------|
| Return (%) | 7.70 | 8.00 | 7.70 | 8.70 | 10.70 | 7.55 | 2.25 | 6.90 | 6.50 | 3.00 | 7.55 |
| Risk (%) | 17.0 | 18.0 | 18.0 | 26.0 | 21.0 | 7.75 | 4.0 | 11.0 | 23.0 | 18.0 | 15.0 |
| Correlations: | | | | | | | | | | | |
| U.S. Stock | 1.00 | | | | | | | | | | |
| Global Stock | 0.90 | 1.00 | | | | | | | | | |
| Int'l Stock | 0.85 | 0.90 | 1.00 | | | | | | | | |
| Emerging Mkts | 0.85 | 0.85 | 0.80 | 1.00 | | | | | | | |
| Private Equity | 0.80 | 0.70 | 0.70 | 0.60 | 1.00 | | | | | | |
| Absolute Return | 0.70 | 0.70 | 0.70 | 0.65 | 0.30 | 1.00 | | | | | |
| Barc Agg | -0.05 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 1.00 | | | | |
| High Yield | 0.65 | 0.60 | 0.60 | 0.60 | 0.65 | 0.70 | 0.19 | 1.00 | | | |
| REITs | 0.70 | 0.65 | 0.65 | 0.65 | 0.60 | 0.55 | 0.15 | 0.65 | 1.00 | | |
| Commodities | 0.35 | 0.45 | 0.50 | 0.55 | 0.20 | 0.60 | 0.05 | 0.35 | 0.25 | 1.00 | |
| Private Real Estate | 0.60 | 0.50 | 0.55 | 0.60 | 0.70 | 0.20 | 0.00 | 0.65 | 0.75 | 0.10 | 1.00 |

Source: 2012 Asset Allocation Report, Cliffwater, LC