



FOX CAPITAL

Invest Your Future

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Hedge Fund Overview

Strategy

- Long/Short Strategy
- Focus on Reits stock

Value

- Started with \$100M from investors
- Total exposure\$200M

Partners

- Prime Brokers: Barclays
- Audit & Tax: PricewaterhouseCoopers
- Administrator: M.S. Howells & Co.
- Legal: Riveles Law Group

Fox Capital Investment Team

A Team of
Professionals



Fox Capital Service Fee Structure

- Fox Capital will charge a 2% annual fee & 20% performance fee
- Each month, a 2% annualized management fee is charged based on the total value of holdings
- After deducting the management fee, the remaining balance is compared to a high water mark, and if the value exceeds the high water mark, 20% of the excess is charged and the balance is reduced
- The new high water mark is pegged to the pre-performance fee allocation balance

Fox Capital Investment Strategy

- Investment for Long-term Alpha Assets
- Quantitate Way of Risk Control use PCA model and Absorption Ratio
- Relative Stable Returns from REITs stocks
- Active Management of Short Term Risk

Fox Capital Investment Process

Select Long-Term Alpha Assets: 30 REITs stocks
The fund holdings are 30 REITs stocks and cash



Stock weights are based on expected return via PCA model:
(1) If stock expected return is positive, long position
(2) If stock expected return is negative, short position
(3) Weekly rebalance



Cash weight is based on absorption ratio (AR):
(1) If AR is higher, risk off, invest more on cash
(2) If AR is lower, risk on, invest more on stocks
(3) Weekly rebalance

Fox Capital Investment Process: REITs

	S&P500	US REITs	Performace
2016	4.72%	5.33%	0.61%
2015	-0.73%	2.83%	3.55%
2014	11.39%	28.03%	16.64%
2013	29.60%	2.86%	-26.75%
2012	13.41%	19.70%	6.30%
2011	0.00%	8.28%	8.29%
2010	12.78%	27.95%	15.16%
2009	23.45%	27.99%	4.54%
2008	-38.49%	-37.73%	0.76%
2007	3.53%	-15.69%	-19.22%
2006	13.62%	35.06%	21.44%
2005	3.00%	12.16%	9.16%
2004	8.99%	31.58%	22.58%
2003	26.38%	37.13%	10.75%
2002	-23.37%	3.82%	27.19%
Annualized Long-Term Alpha			6.73%
Data as of Nov 18, 2016			

Fox Capital Investment Process: PCA Model

- Extracting risk factor using PCA model
- Consider the eigenvalues of the empirical covariance matrix and rank the eigenvalues in decreasing order

$$\lambda_1 > \lambda_2 \geq \lambda_3 \geq \dots \geq \lambda_N$$

- Small eigenvalues of the covariance matrix correspond to extremely low or vanishing risk of stocks
- Expected return is determined by \mathbf{e}_i (n eigenvector with non-zero eigenvalues) and g_{ji} (scalars are the coordinates of \mathbf{x}_j in the dimensional space)

$$\mathbf{x}_j \approx \bar{\mathbf{x}} + \sum_{i=1}^{i=k} g_{ji} \mathbf{e}_i$$

Fox Capital Investment Process: PCA Model

Principal Component	Eigenvalue	Proportion of Variance	Cumulative Variance
1	75	26.95%	26.95%
2	43	15.45%	42.40%
3	30	10.78%	53.18%
4	21	7.55%	60.73%
5	19	6.83%	67.55%
6	18	6.47%	74.02%
7	17	6.11%	80.13%
8	11	3.95%	84.08%
9	10	3.59%	87.67%
10	10	3.41%	91.09%
11	9	3.16%	94.25%
12	5	1.80%	96.05%
13	4	1.58%	97.63%

Fox Capital Investment Process: Absorption Ratio

$$AR = \frac{\sum_{i=1}^n \sigma_{E_i}^2}{\sum_{j=1}^N \sigma_{A_j}^2}$$

AR: Absorption ratio

N: number of assets

n: number of eigenvectors used to calculate AR

$\sigma_{E_i}^2$: variance of the i-th eigenvector, sometimes called eigenportfolio

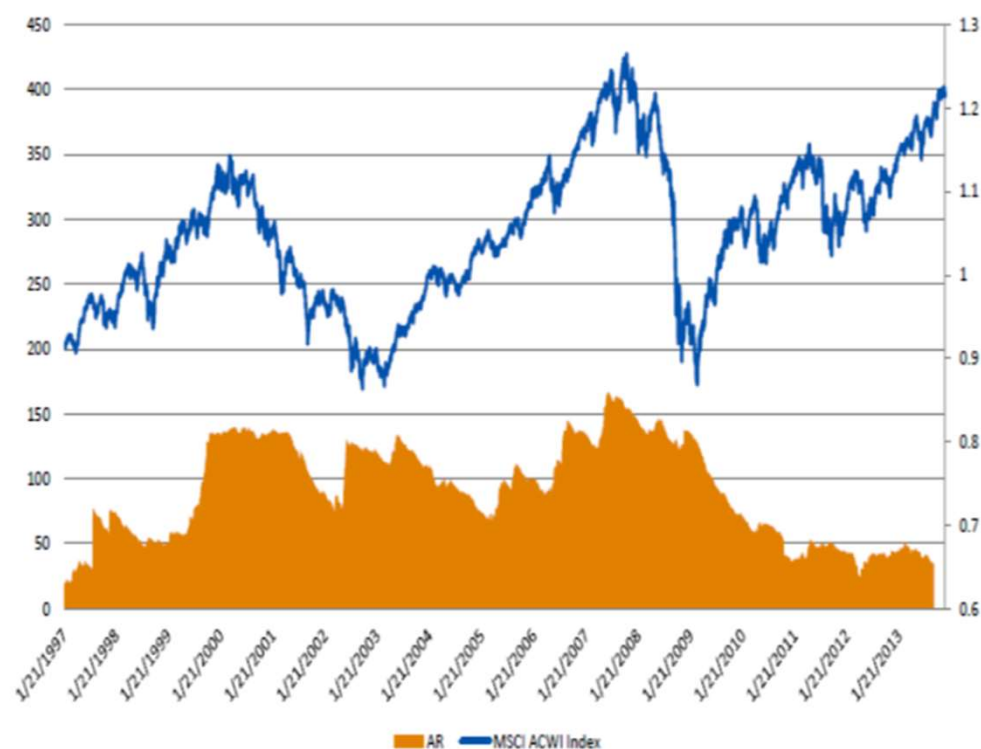
$\sigma_{A_j}^2$: variance of the j-th asset

Source: State Street, Jessica T. Donohue

Fox Capital Investment Process: Absorption Ratio

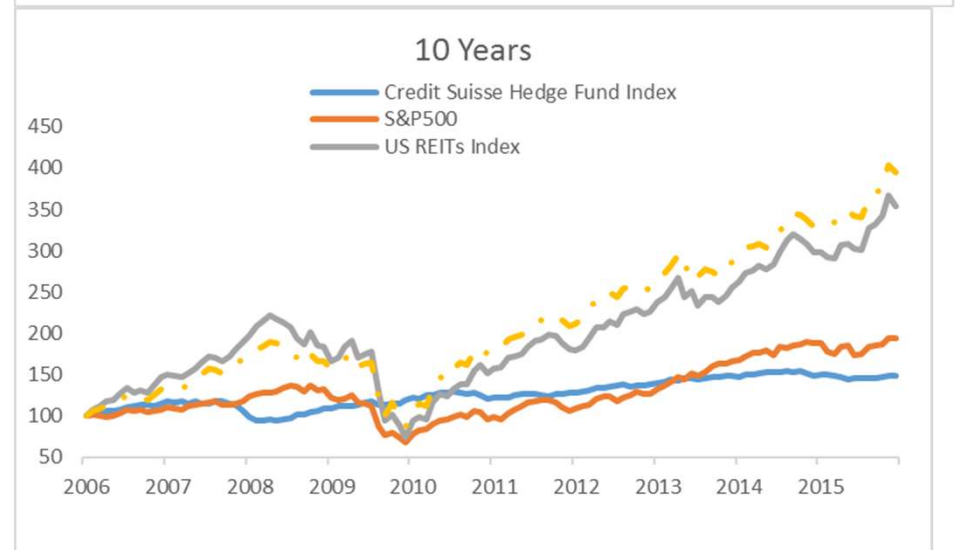
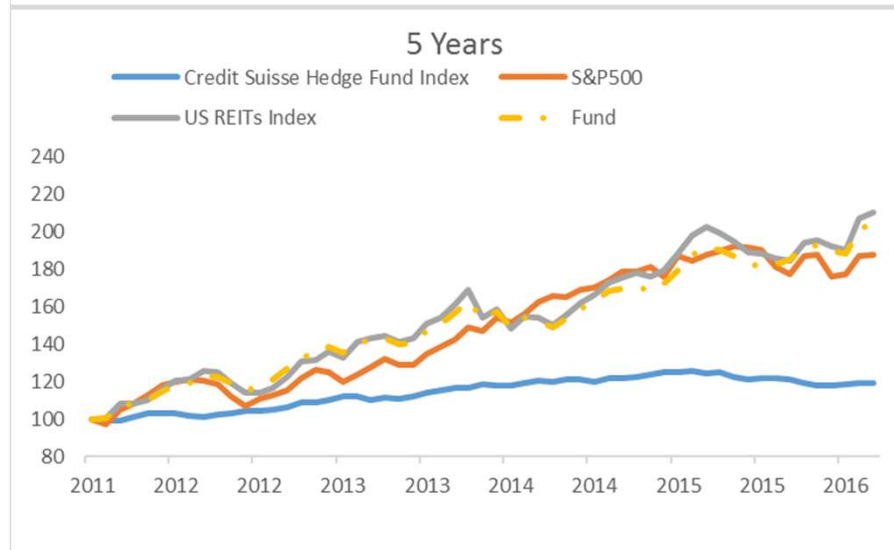
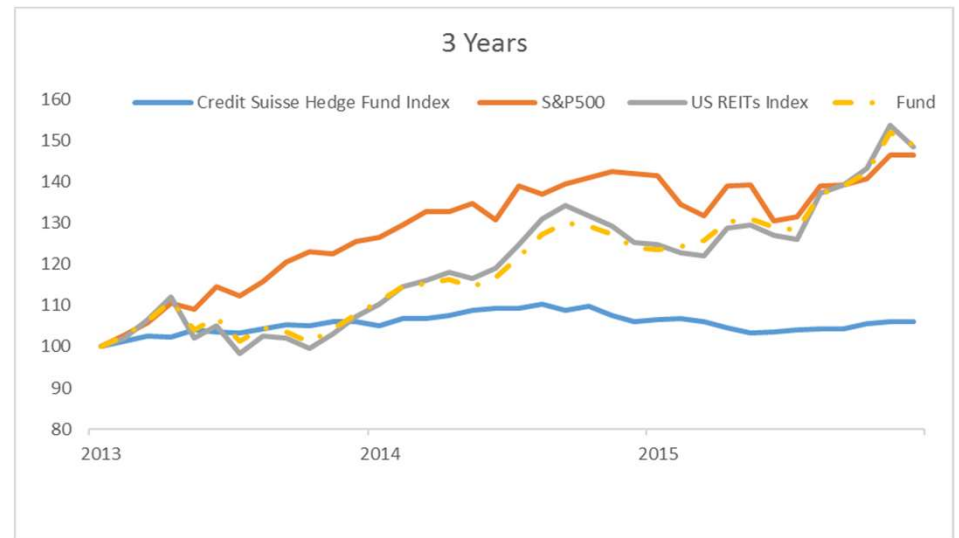
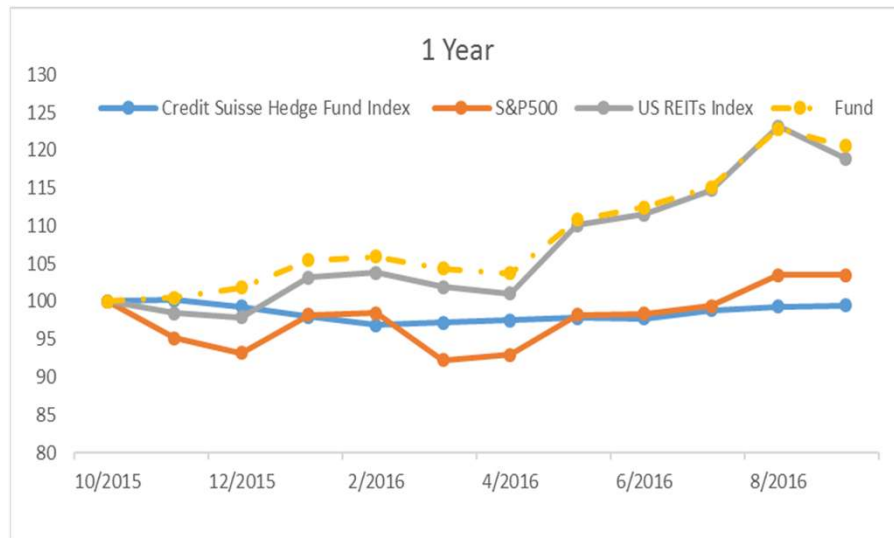
- A high absorption ratio implies that assets are tightly coupled, so the portfolio is fragile because negative returns are more likely to come. (Quantitative Risk Off Time)
- A low absorption ratio implies that risk is distributed well, so the portfolio is more robust and less likely to be fragile (Quantitative Risk On Time)
- Find the threshold absorption ratio for risk on/off time
- (Right Figure Example) net flows as the difference in the dollar value of buys minus sells normalized by market capitalization for each country

Global Country Flow Absorption Ratio and MSCI ACWI



Sources: State Street Associates, MSCI

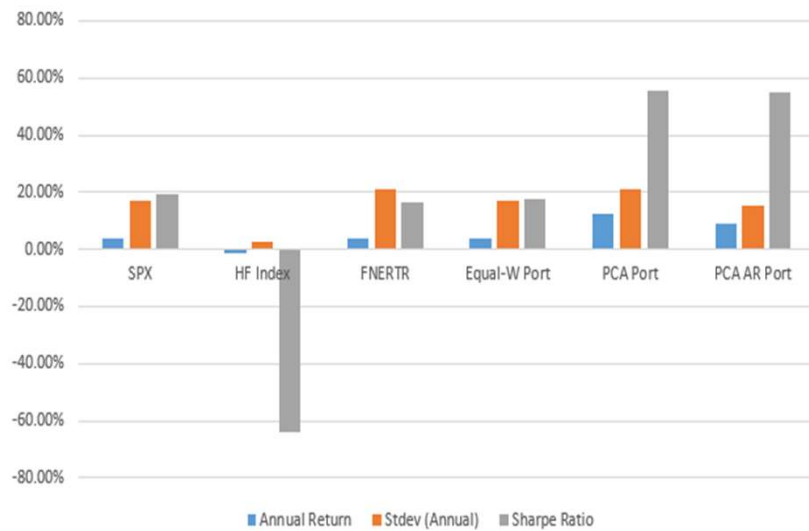
Fund Back Test



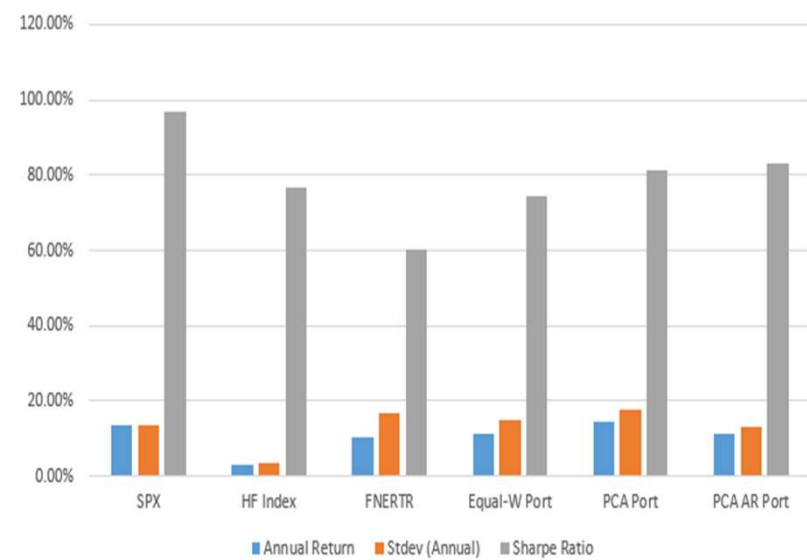
Fund Back Test

	US REITs Index	EqualW_Portfolio	PCA_Portfolio	PCA_AR_Portfolio (Fund)
2016	12.03%	0.96%	19.60%	12.28%
2015	5.26%	5.71%	7.05%	9.16%
2014	8.82%	34.29%	9.28%	8.38%
2013	31.22%	3.51%	26.90%	23.23%
2012	13.36%	16.82%	13.25%	18.68%
2011	78.61%	14.04%	99.56%	71.98%
2010	-47.73%	31.37%	-36.87%	-33.72%
2009	-14.52%	34.56%	-16.04%	-7.92%
2008	45.94%	-41.12%	40.94%	37.50%
2007	31.65%	-15.09%	31.15%	22.64%
2006	38.75%	40.27%	60.02%	38.55%
2005	9.70%	19.82%	1.12%	8.05%
2004	22.88%	33.93%	48.97%	30.25%
Annualized Alpha		-4.38%	5.30%	0.24%

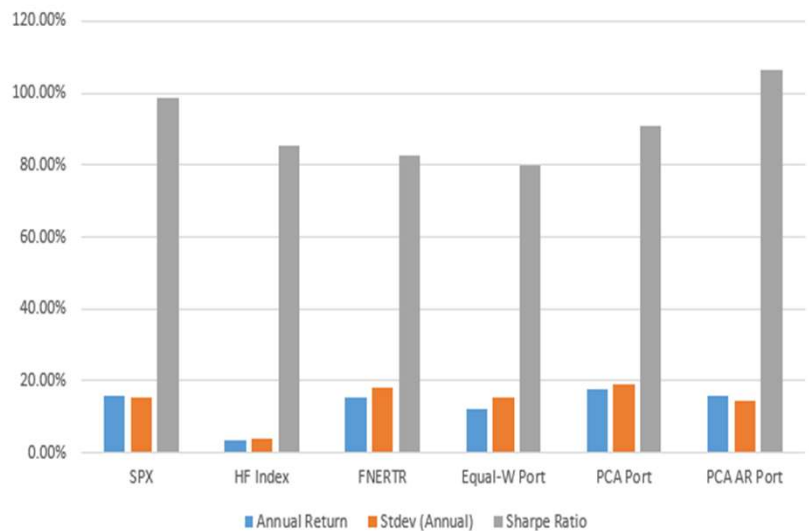
Holding Period: 1 Yrs



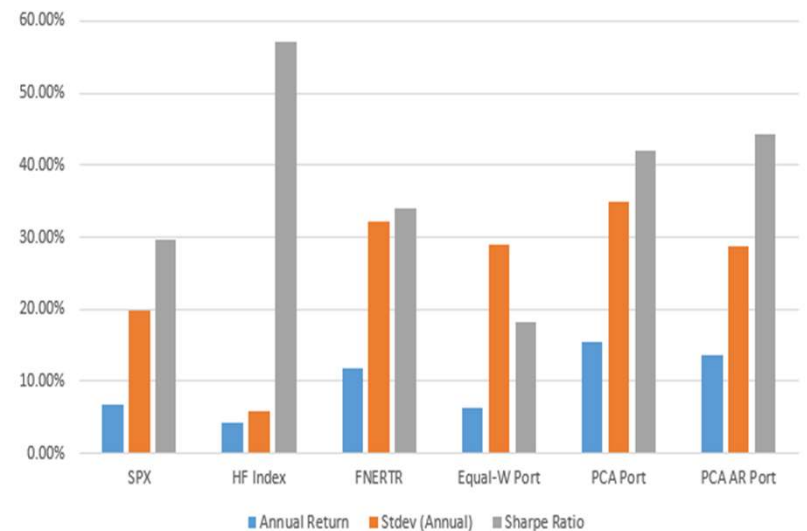
Holding Period: 3 Yrs



Holding Period: 5 Yrs



Holding Period: 10 Yrs



Some key statistics

Key Parameter	Our Fund	S&P 500
Jensen's Alpha	5.97%	0
Beta	1.14	1
Annualized ROR	13.62%	6.83%
Annualized STDEV	28.69%	19.9%
Sharpe Ratio	44.29%	29.72%
Treynor Measure	11.15%	5.91%
Sortino Ratio	56.5%	33.77%
Batting Average	60.15%	59.97%



Summary

- Outperform S&P 500 in up and down market
- Quantitative risk management
- Low volatility



THANK YOU