

Protecting Your Tail from Correlation Risk

Nov. 21, 2019

Talking Hedge - Austin, TX



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- Past performance is not necessarily indicative of future results.
- There is risk of loss when investing in futures and options. Always review a complete CTA disclosure document before investing in any Managed Futures program.
- Managed futures can be a volatile and risky investment; only use appropriate risk capital; this investment is not for everyone.
- The opinions expressed are solely those of the author and are only for educational purposes. Please talk to your financial advisor before making any investment decisions.

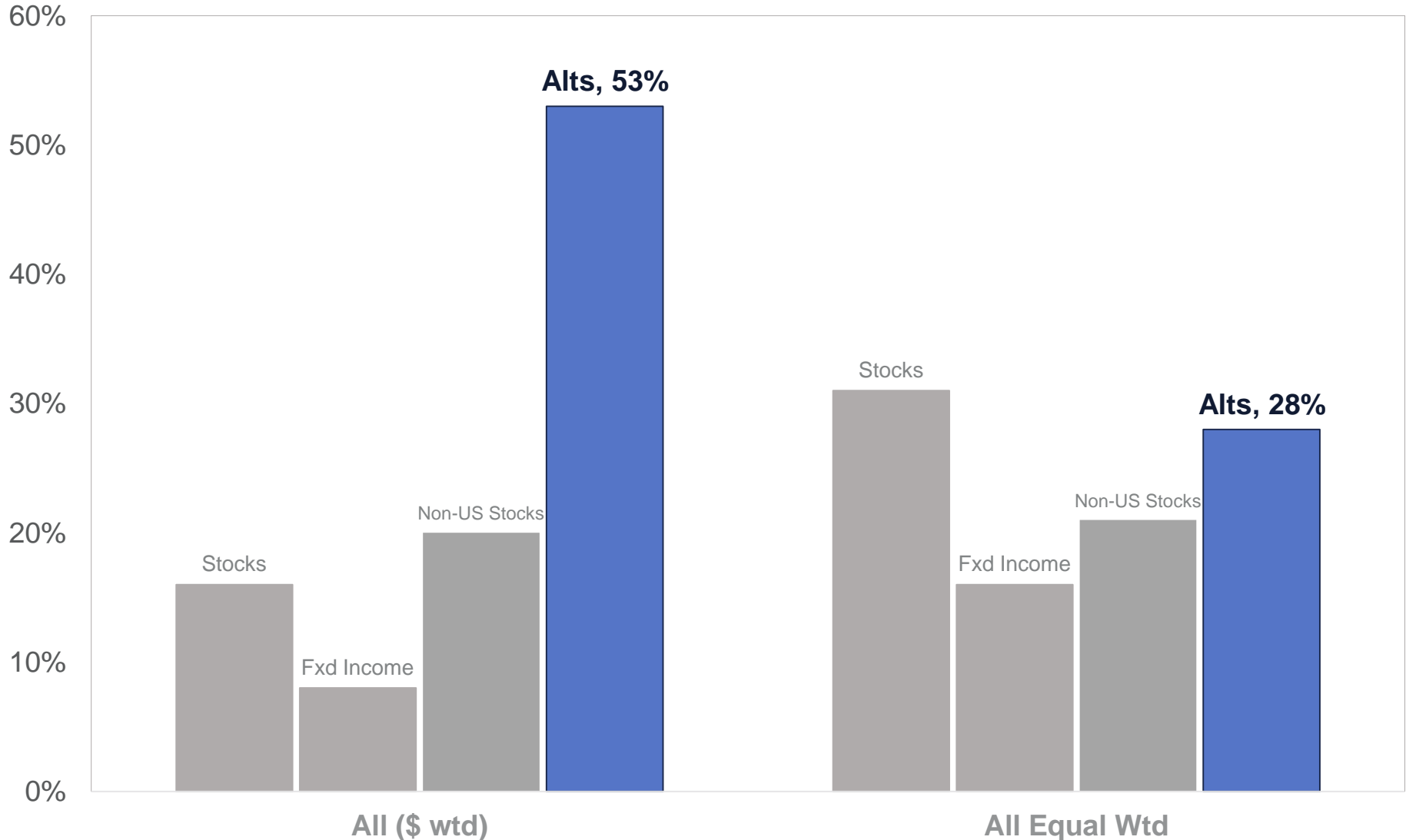
Research Question

- 1) In the aggregate are hedge funds a diversifier for a traditional portfolio?
- 2) When parsed by strategy, do hedge funds offer varying benefits?

- Investors tend to aggregate hedge fund strategies into one bucket:
 - “I’m diversified! ”
 - But are they?
- Now investors may parse strategies and ask:
 - Do benefits vary among the strategies?
- Growth of allocation to alternative investments
- Continuation of my previous research going back to the early 2000’s regarding diversification & the utility of alternative investments

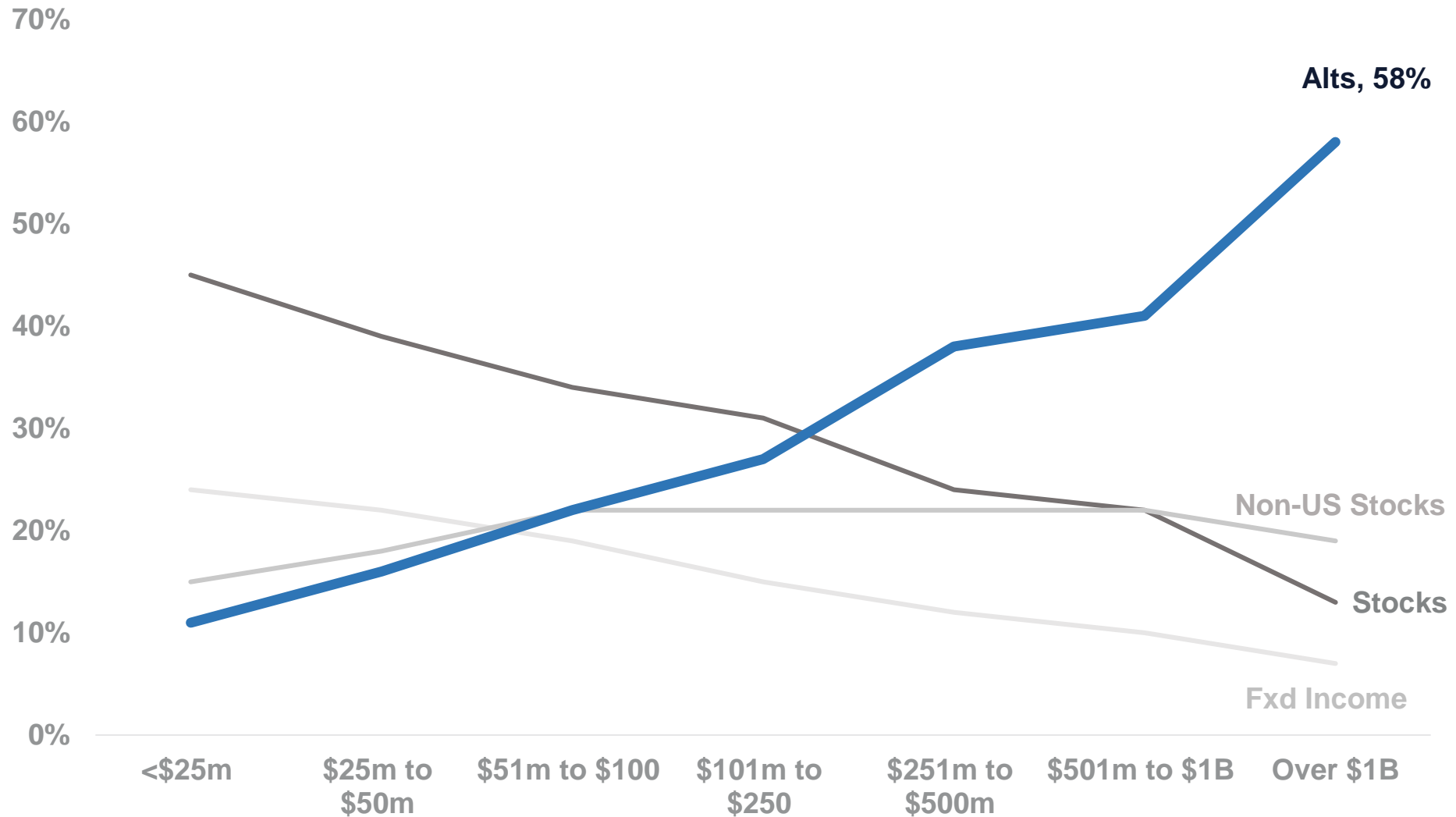
- Examined static and dynamic correlations
 - Includes strong & weak environments
- Examined Negative equity quarters –
 - reduces noise
- Regressed equity indices against hedge fund strategies
- Some research examines the behavior during specific events such as:
 - Financial crisis, Internet bubble, 9/11 attack
- This is a temporal, empirical study: Event agnostic

Alternative Allocations from Endowment & Affiliated Foundations (N=802, \$616 Billion Aum)



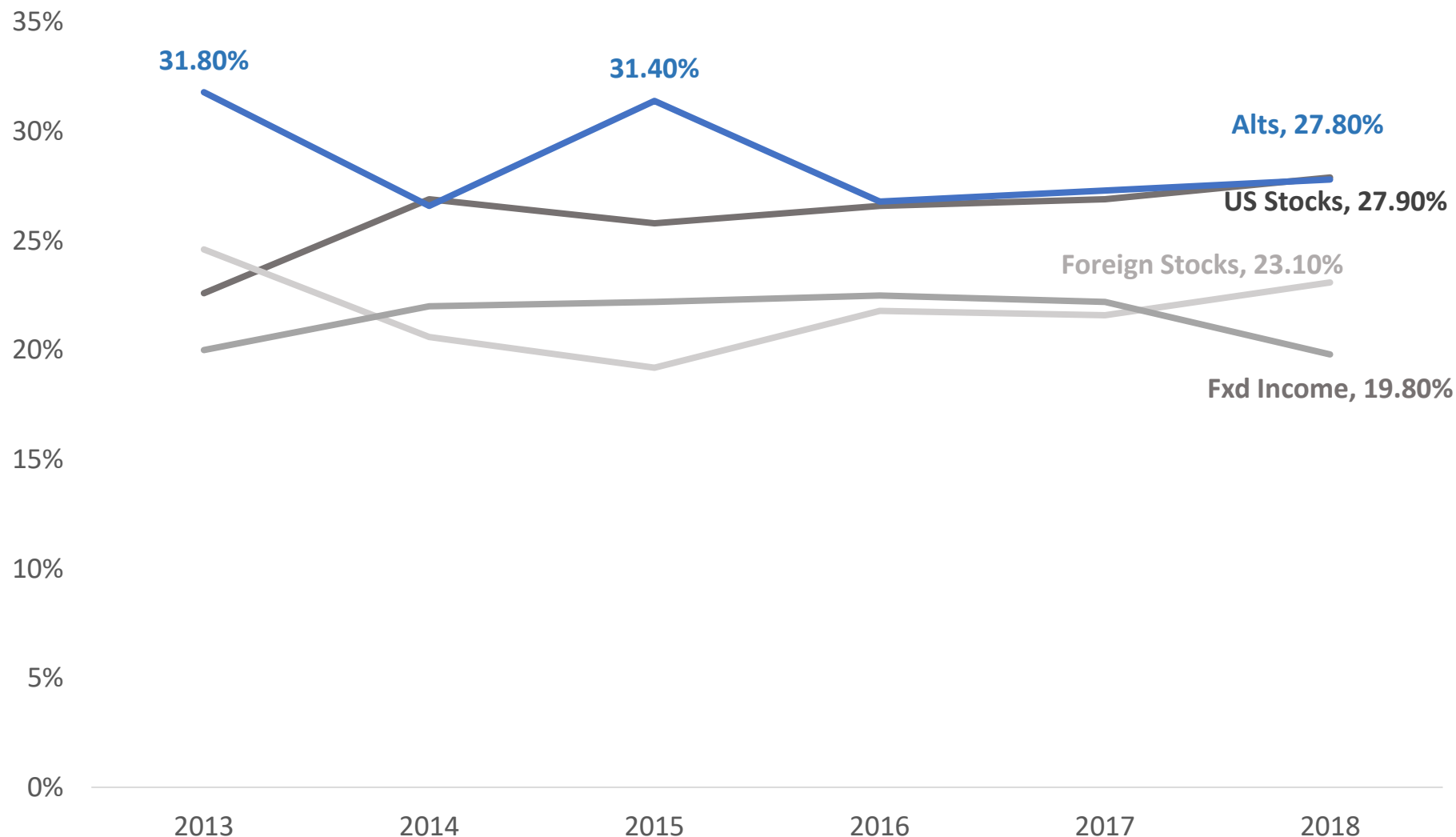
Source: Mark Shore, Coquest Advisors; NACUBO 2019

Alternative Allocations: Endowments & Affiliated Foundations (N= 802, \$616 Billion, \$ Wtd)



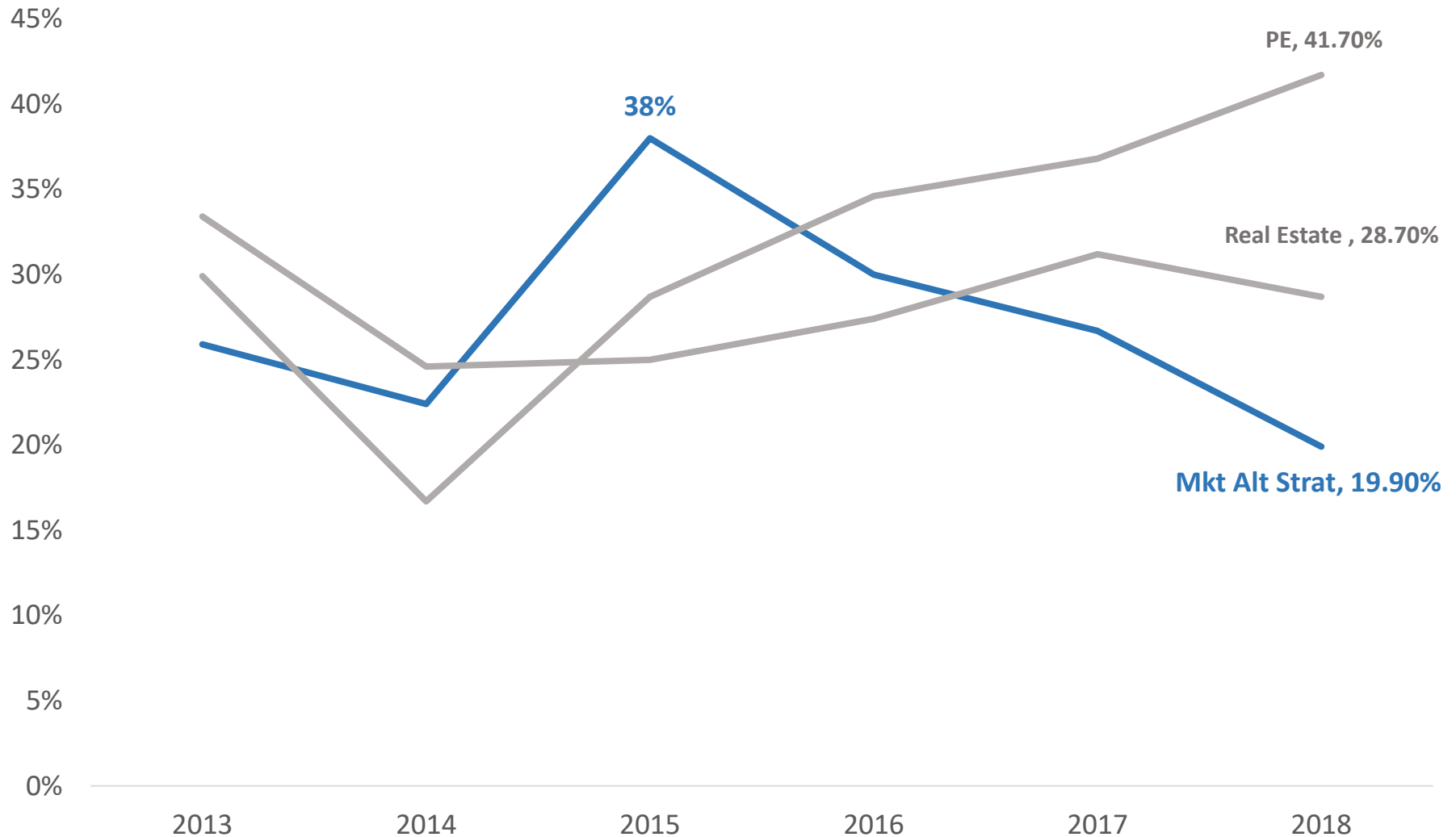
Source: Mark Shore, Coquest Advisors; NACUBO 2019

Average \$ WTD of TEXPERS Portfolios (N= 85)



Source: Mark Shore, Coquest Advisors; TEXPERS 2019

TEXPERS Average \$ Wtd Alt Allocations within Alt Portfolio (91% of Alt Allocations, N=85)



Source: Mark Shore, Coquest Advisors; TEXPERS 2019

➤ Correlation Risk:

“Is dispersion in economic outcomes attributable to changes in realized or anticipated levels of correlation between market prices or rates”

(Anson, Chambers, Black, & Kazemi, 2012 p. 437)

➤ Financial Correlations:

- 1) **Static:** The relationship of assets for a specific time
- 2) **Dynamic:** The relationship of assets move over time

(Meissner, 2014, p.34)

- Discuss dynamic correlations:
 - Roll (1988) – relation to 1987 crash
 - Ball & Torus (2000) – relation to international stock markets

- Asymmetric correlations
 - Ang & Chen (2002): “if all stocks tend to fall together as the market falls, the value of diversification may be overstated by those not taking the increase in downside correlations into account.”

 - Buraschi, Porchia & Trojani (2010): “**Correlations of stock returns tend to be in higher phases of market downturns**”

- Spillover / Contagion: equities to hedge funds
 - Bekaert, Harvey & Ng (2005) Define contagion:
“correlation over and above what one would expect from economic fundamentals”
 - Boyson, Stahel & Stulz (2010); Brunnermeier & Pederson (2008)
Contagion to hedge funds derived from shock to funding liquidity = reduced leverage = reduction in asset liquidity
 - Relative to financial stress, similar to KC Fin Stress Index
 - Viebig & Podding (2010): **if contagion occurs from equities to hedge funds, the diversification effect should not hold**
 - They find evidence of contagion with some strategies but not all: equity market neutral, macro & short bias

Jan 1997 to March 2018

	<i>SPX</i>	<i>MSCI EAFE MKTS</i>	<i>MSCI EMG MKTS</i>	<i>MSCI WORLD</i>	<i>FTSE 100</i>	<i>NIKKEI 225</i>	<i>EURO STOXX 50</i>	<i>CTA</i>	<i>HEDGE FUNDS</i>
<i>SPX</i>	1.00								
<i>MSCI EAFE</i>	0.84	1.00							
<i>MSCI EMG MKTS</i>	0.75	0.82	1.00						
<i>MSCI WORLD</i>	0.96	0.96	0.83	1.00					
<i>FTSE 100</i>	0.81	0.82	0.69	0.85	1.00				
<i>NIKKEI 225</i>	0.59	0.68	0.58	0.66	0.52	1.00			
<i>EURO STOXX 50</i>	0.80	0.81	0.66	0.84	0.83	0.57	1.00		
<i>CTA</i>	-0.09	-0.01	0.01	-0.05	-0.03	-0.07	-0.07	1.00	
<i>HEDGE FUNDS</i>	0.77	0.81	0.83	0.83	0.70	0.60	0.72	0.05	1.00

Source: Mark Shore, Coquest Advisors; Bloomberg data

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<i>NIKKEI 225</i>	0.59	0.68	0.58	0.66	0.52	1.00			
<i>EURO STOXX 50</i>	0.80	0.81	0.66	0.84	0.83	0.57	1.00		
<i>CTA</i>	-0.09	-0.01	0.01	-0.05	-0.03	-0.07	-0.07	1.00	
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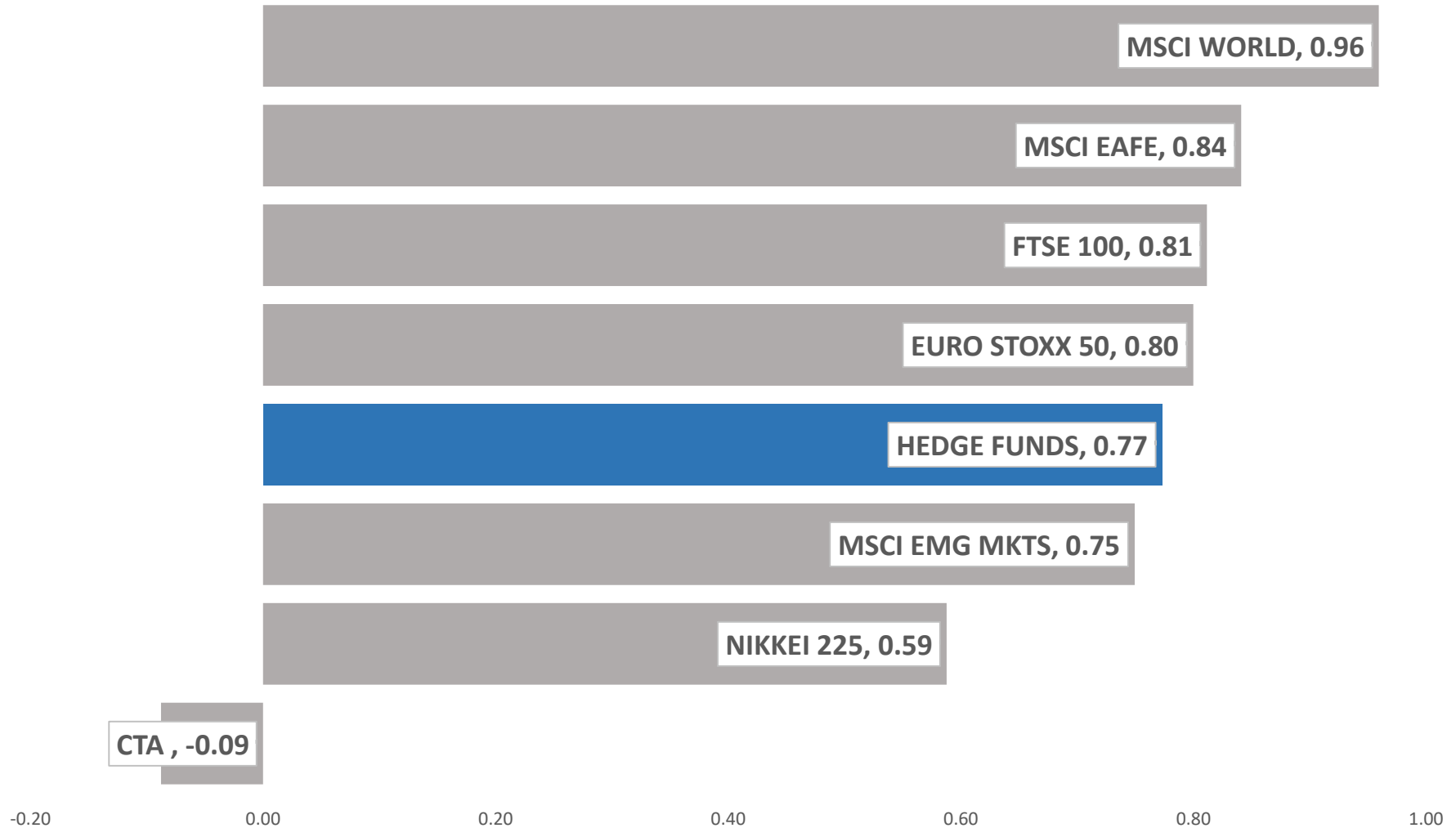
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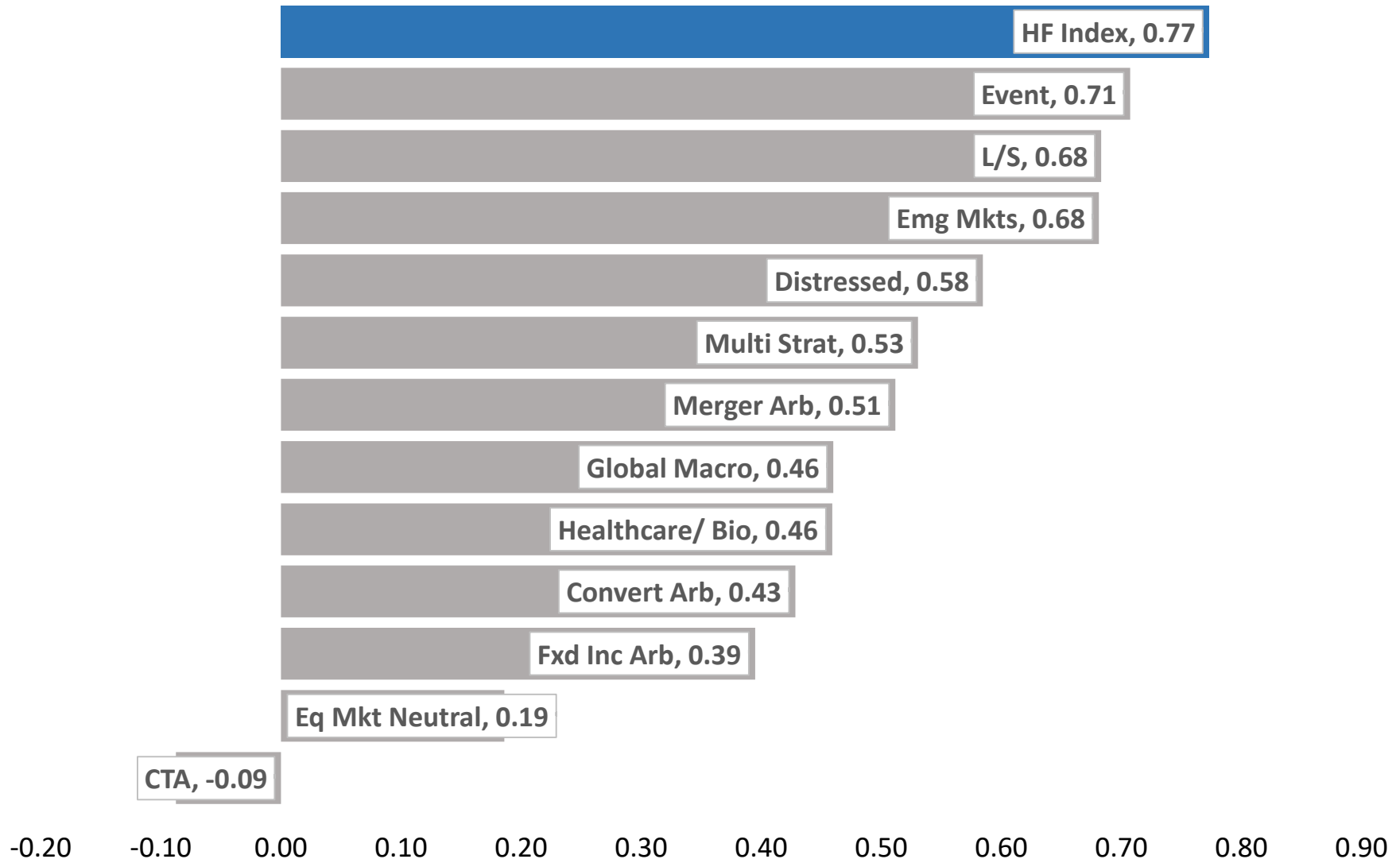
Correlations to the S&P 500 Index 1997 to March 2018



Source: Mark Shore, Coquest Advisors; Bloomberg data

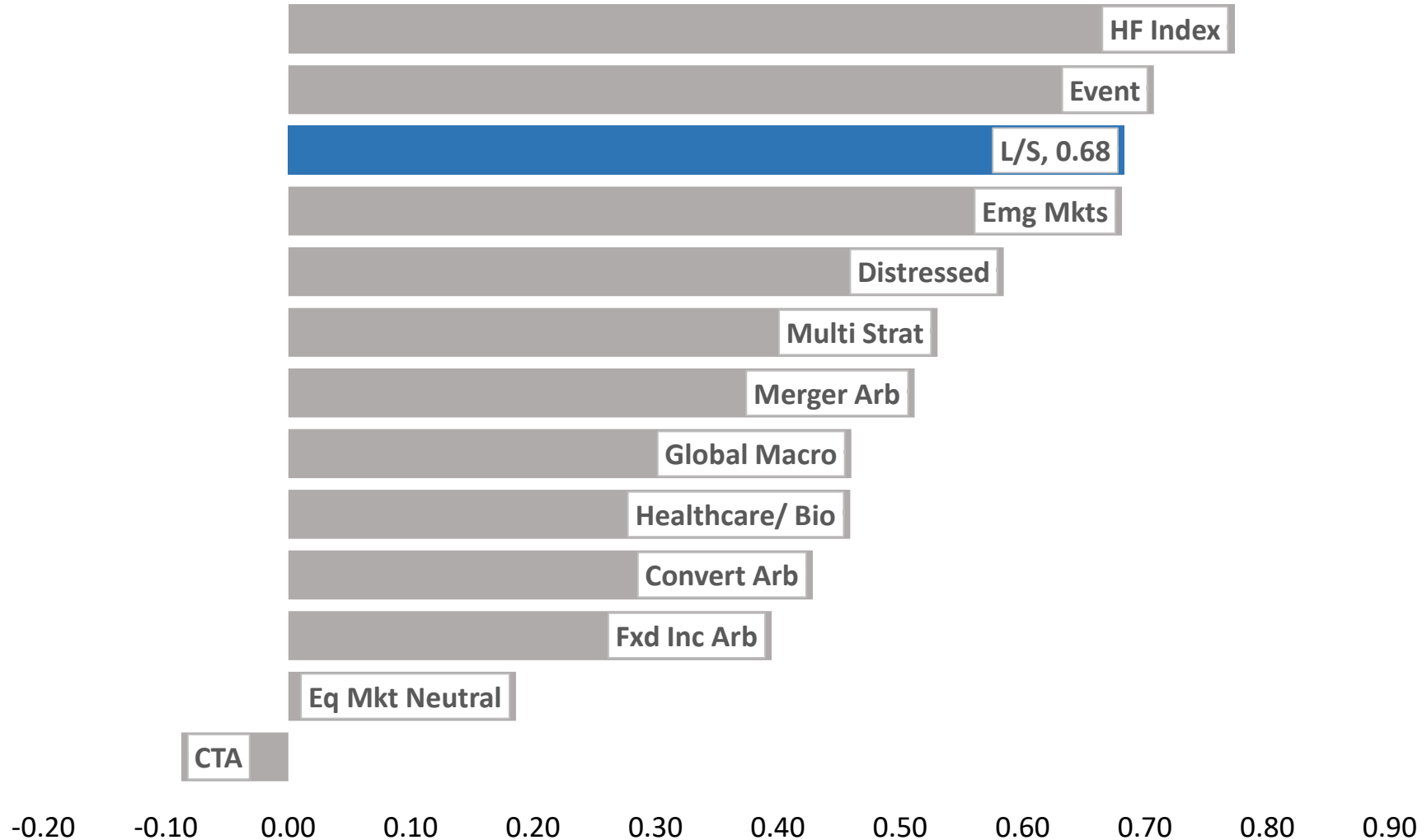
Correlations of HF Strategies to SPX

Jan 1997 to March 2018



Source: Mark Shore, Coquest Advisors; Bloomberg data

Correlations of HF Strategies to SPX Jan 1997 to March 2018

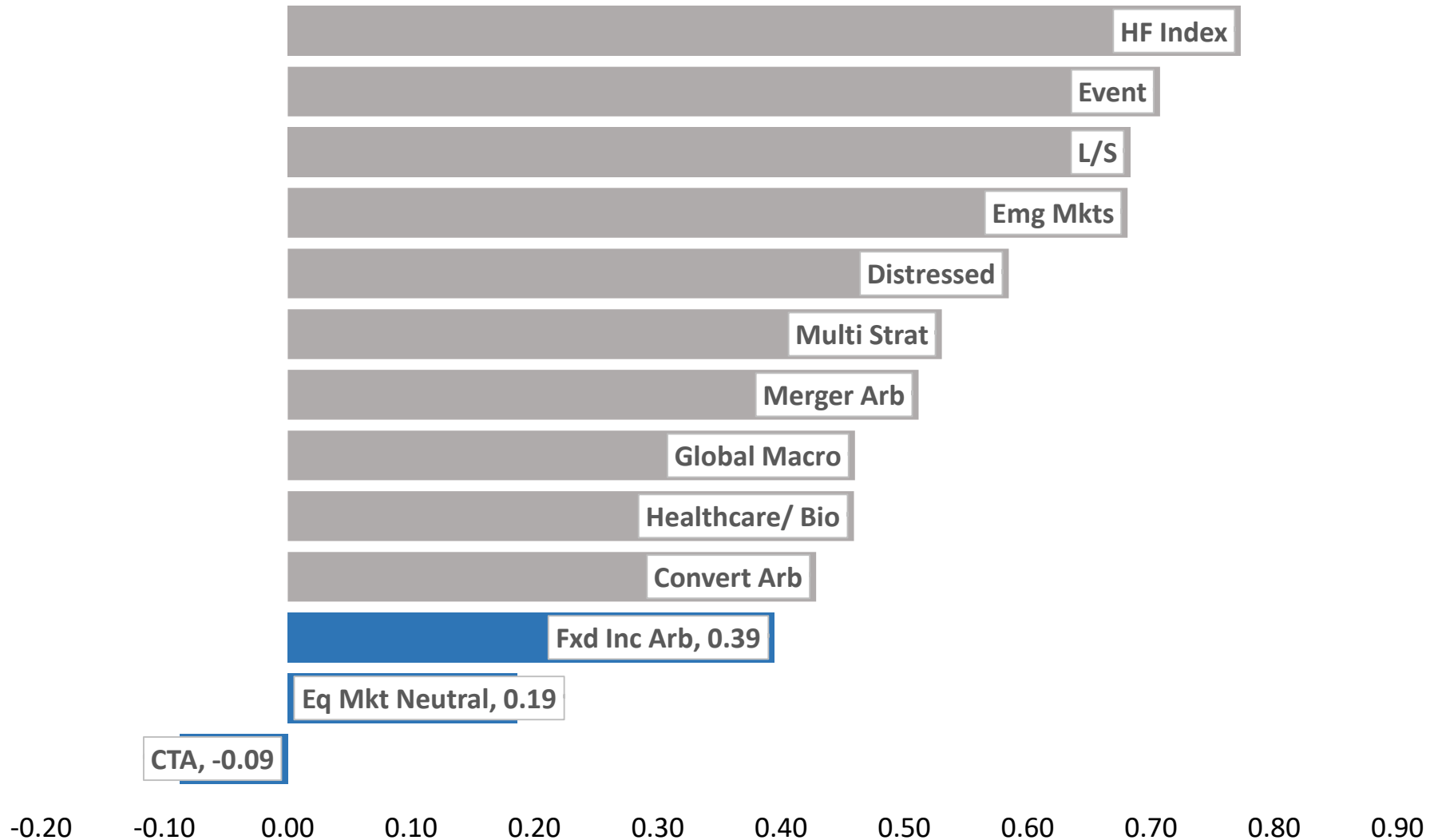


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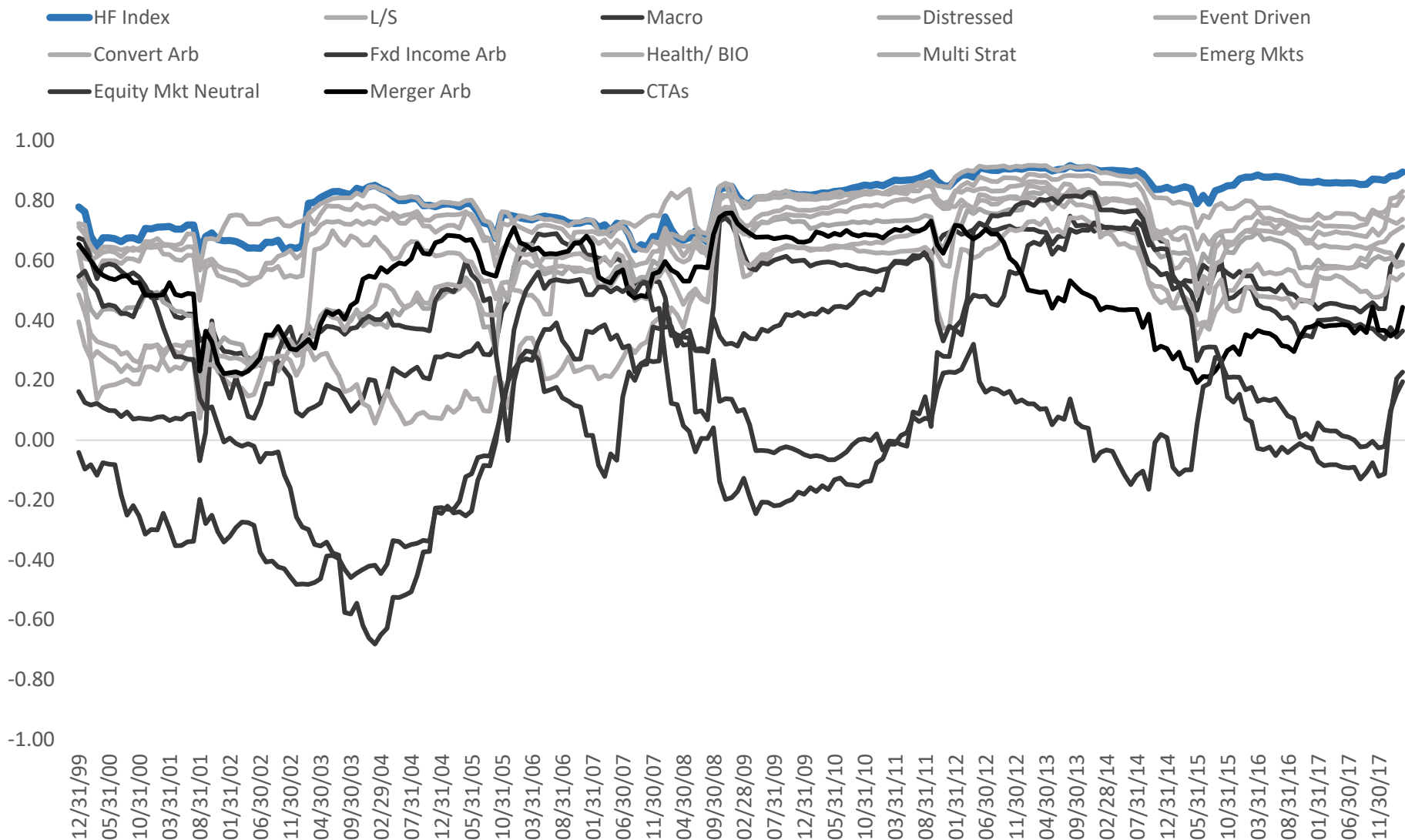
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3-Yr Rolling Correlation of Hedge Fund Strategies to S&P 500



Source: Mark Shore, Coquest Advisors; Bloomberg data

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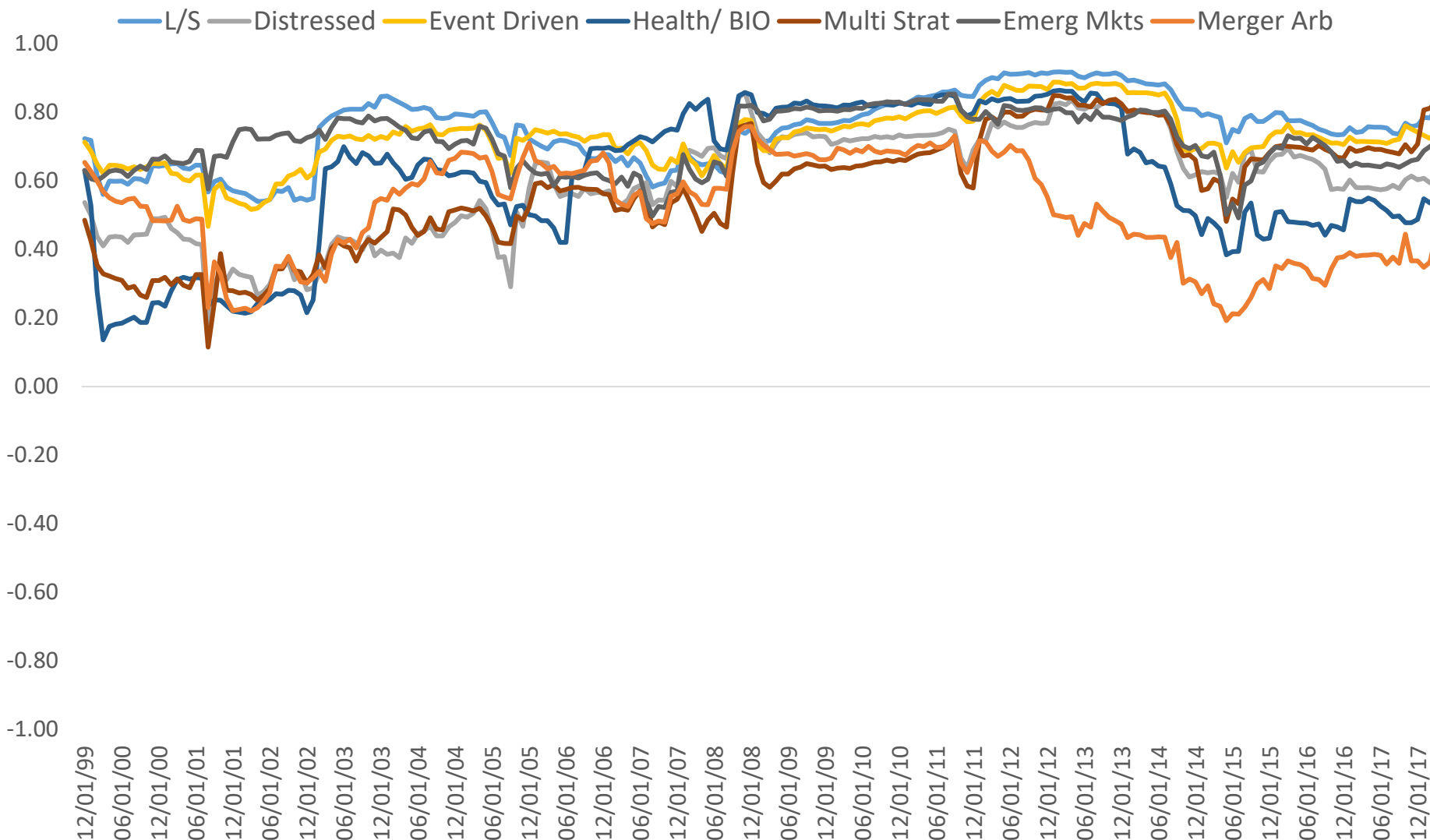
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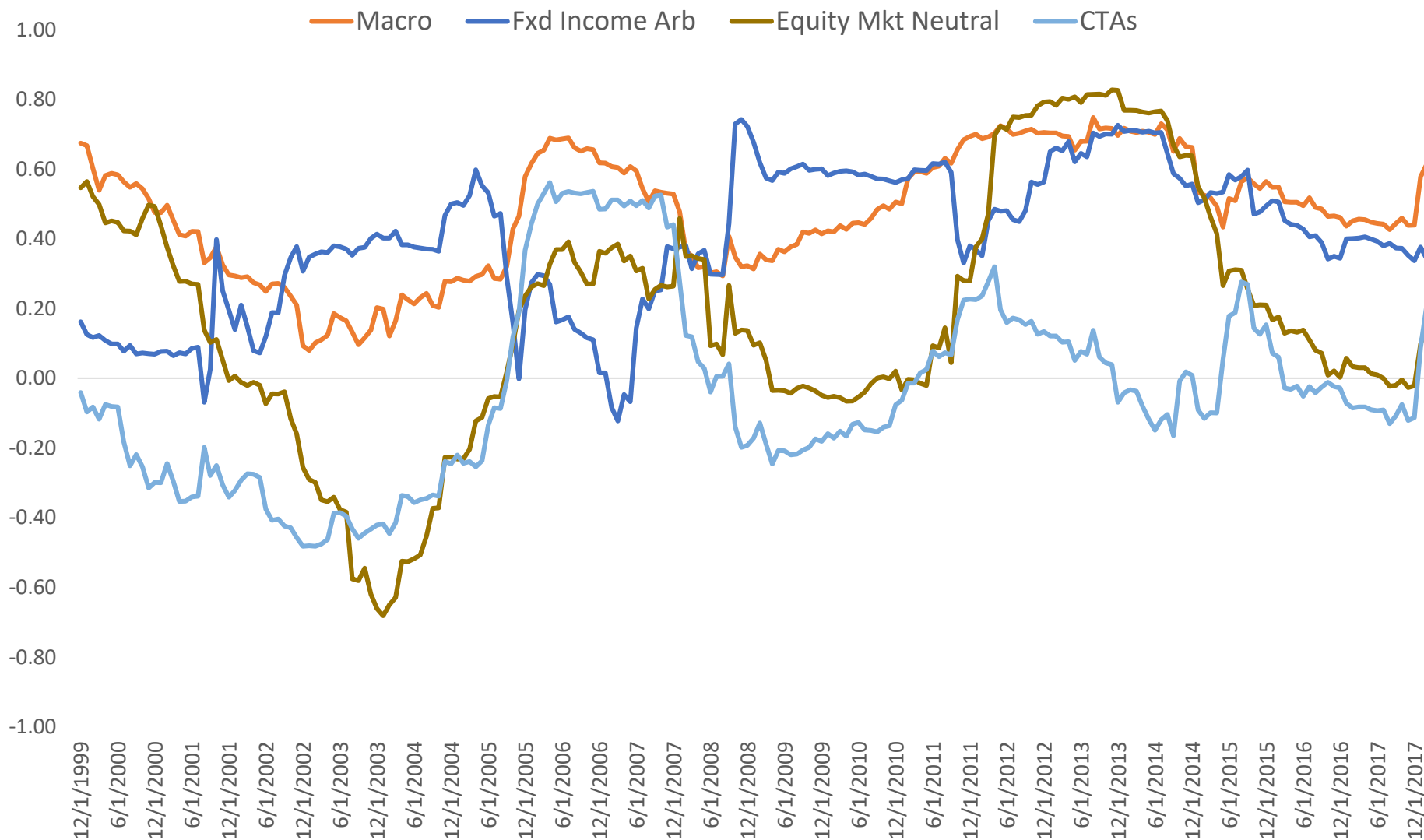
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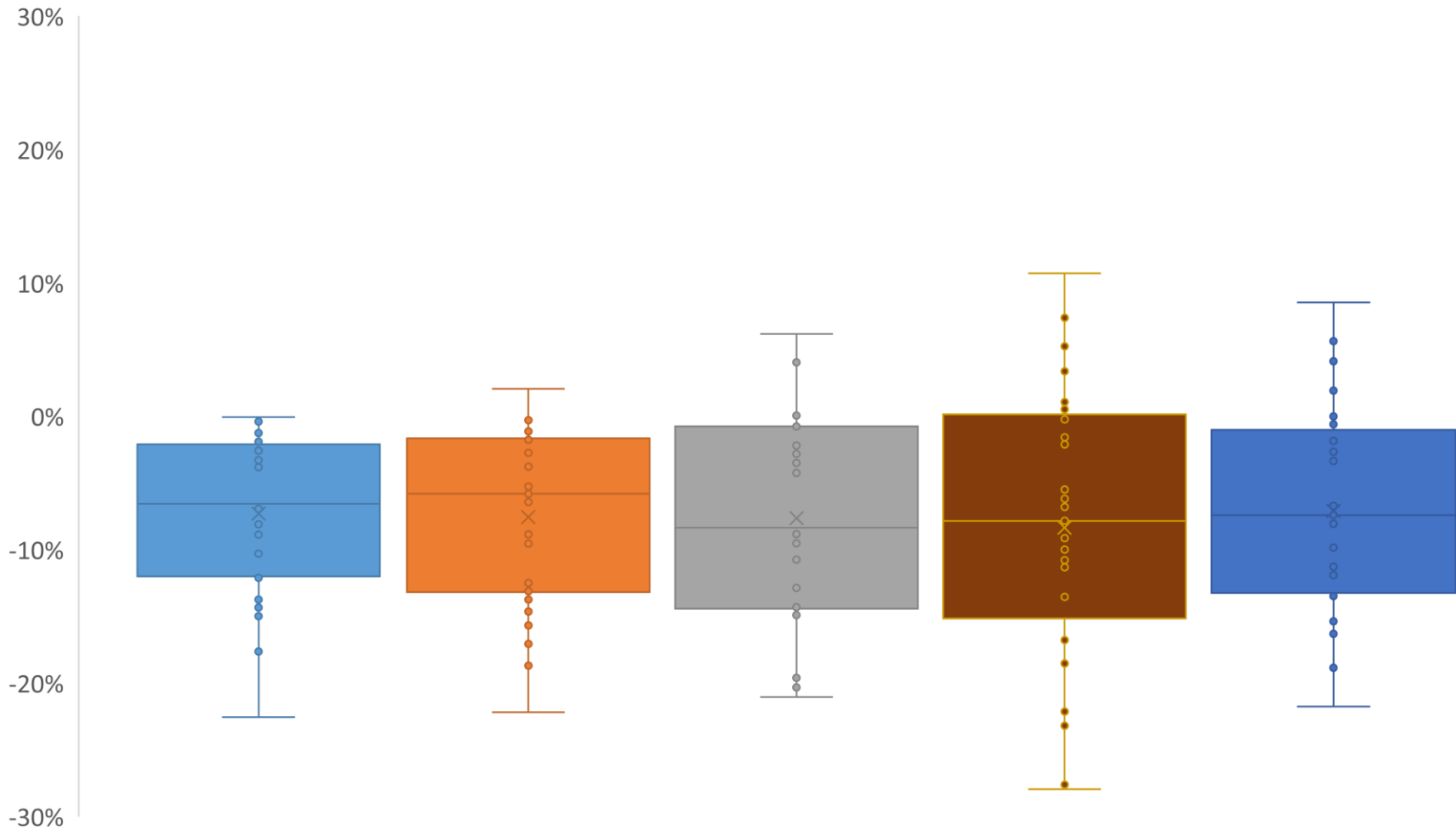


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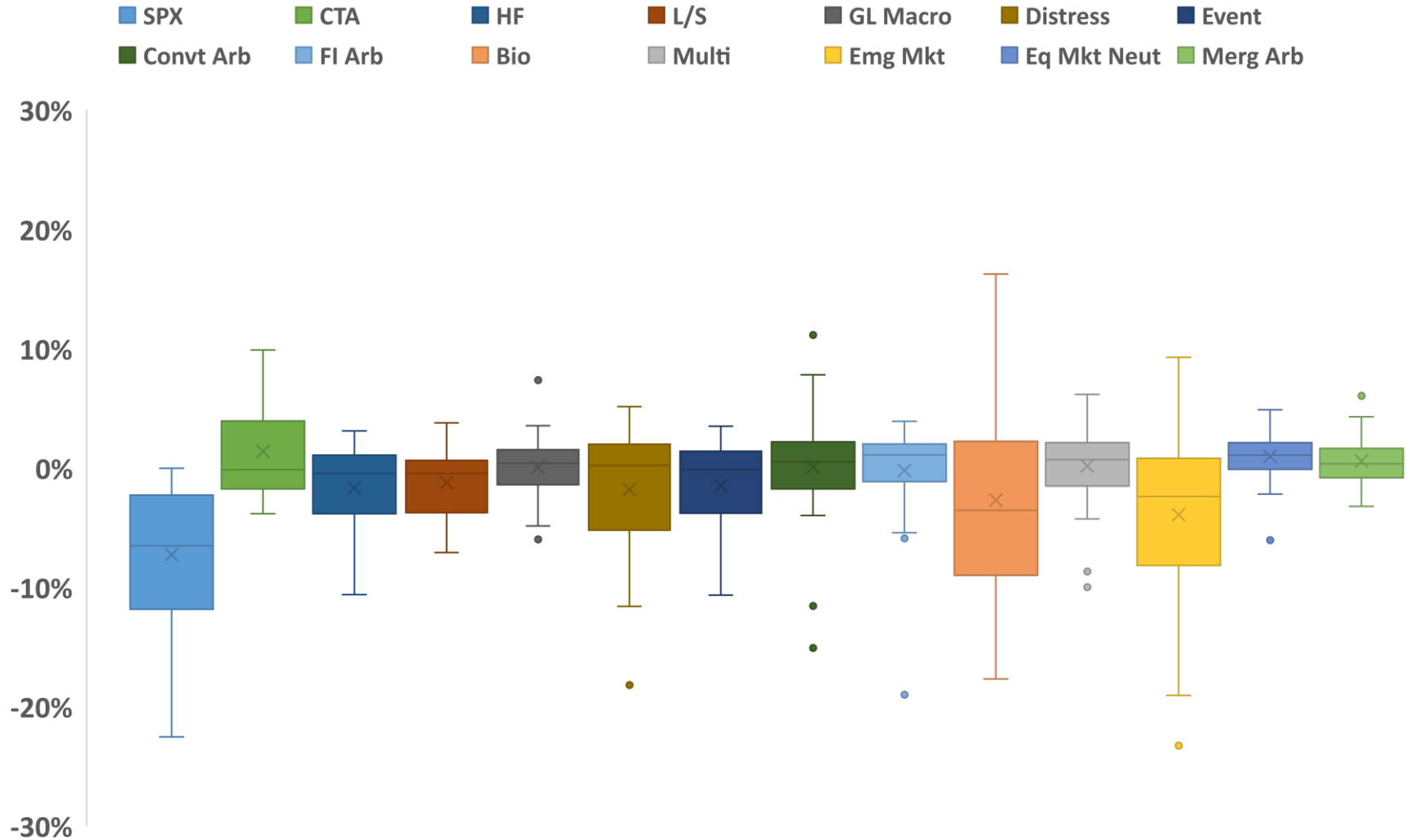
MSCI Equity Indices are Similar During Negative S&P 500 Quarters 1997 to March 2018 (N=29)

■ SPX ■ MSCI World ■ EAFE ■ Emg Mkts ■ Asia Pacific



Source: Mark Shore, Coquest Advisors; Bloomberg data

Hedge Funds During Negative S&P 500 Quarters 1997 to March 2018 (N = 29)



Source: Mark Shore, Coquest Advisors; Bloomberg data

SPX Negative Quarters (N=29,1997 to March 2018)

	SPX	HF index	L/S	Global Macro	Distress	Event Driven	Convert Arb	Fxd Income Arb	Hthcar & Bio	Multi Strat	Emg Mkts	Eq Mkt Neutral	Merger Arb	CTA
%Pos	0%	45%	38%	59%	52%	48%	62%	66%	41%	59%	34%	76%	55%	48%
%Neg	100%	55%	62%	41%	48%	52%	38%	34%	59%	41%	66%	24%	45%	52%
Avg Pos Qtr		1.4%	1.5%	1.6%	2.3%	1.6%	2.7%	1.7%	4.5%	2.4%	3.2%	1.8%	2.0%	4.59%
Avg Neg Qtr	-7.3%	-4.2%	-2.9%	-2.2%	-6.3%	-4.4%	-4.3%	-4.0%	-7.8%	-3.1%	-7.7%	-1.9%	-1.2%	-1.65%
Max Return	-0.1%	3.1%	3.8%	7.3%	5.1%	3.5%	11.1%	3.9%	16.2%	6.1%	9.2%	4.8%	6.0%	9.86%
Min Return	-22.6%	-10.6%	-7.1%	-6.0%	-18.2%	-10.7%	-15.1%	-19.0%	-17.7%	-10.0%	-23.3%	-6.1%	-3.2%	-3.86%

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Avg Neg Qtr	-7.3%	-4.2%	-2.9%	-2.2%	-6.3%	-4.4%	-4.3%	-4.0%	-7.8%	-3.1%	-7.7%	-1.9%	-1.2%	-1.65%
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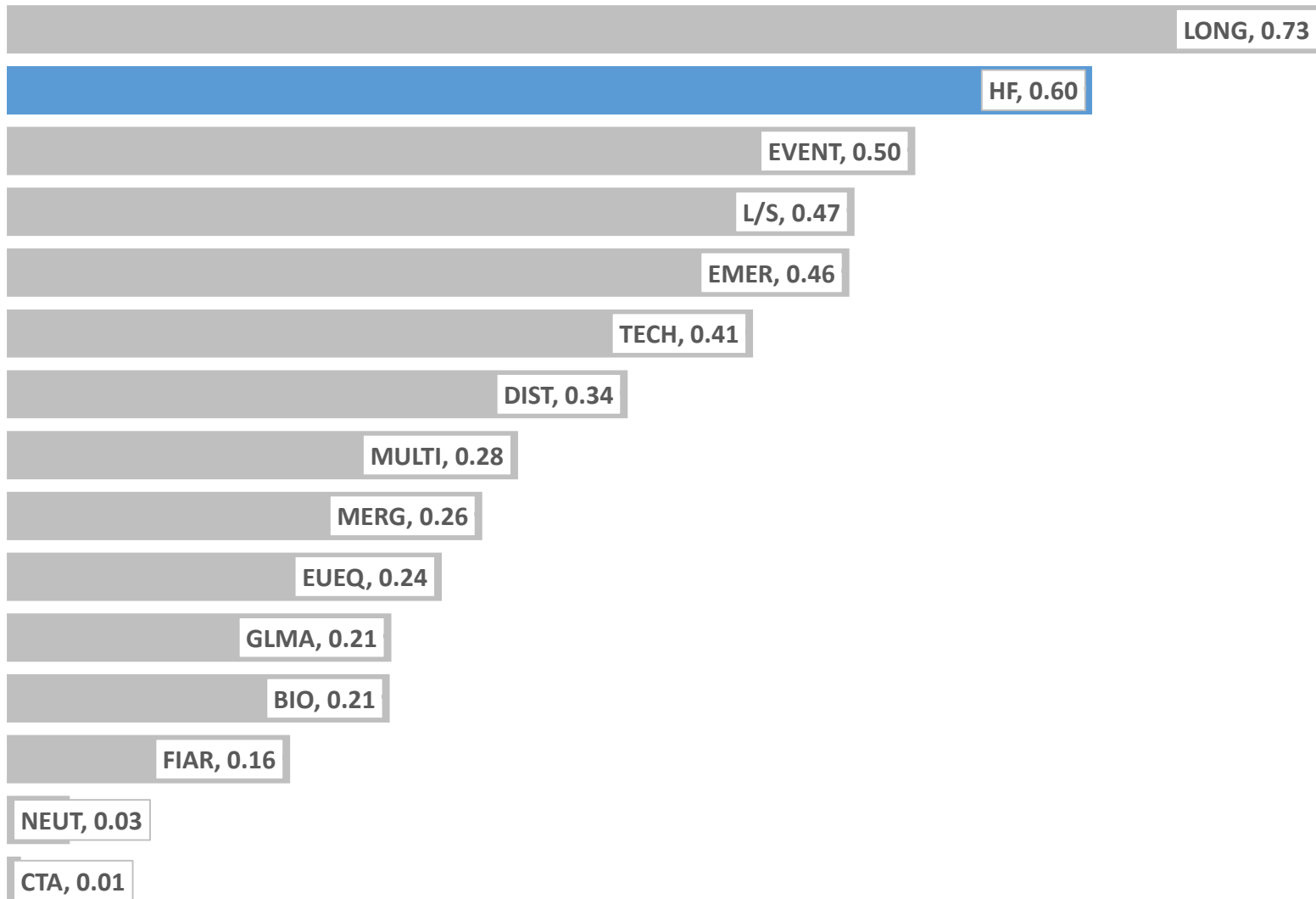
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Avg Neg Qtr	-7.3%	-4.2%	-2.9%	-2.2%	-6.3%	-4.4%	-4.3%	-4.0%	-7.8%	-3.1%	-7.7%	-1.9%	-1.2%	-1.65%
Max Return	-0.1%	3.1%	3.8%	7.3%	5.1%	3.5%	11.1%	3.9%	16.2%	6.1%	9.2%	4.8%	6.0%	9.86%
Min Return	-22.6%	-10.6%	-7.1%	-6.0%	-18.2%	-10.7%	-15.1%	-19.0%	-17.7%	-10.0%	-23.3%	-6.1%	-3.2%	-3.86%

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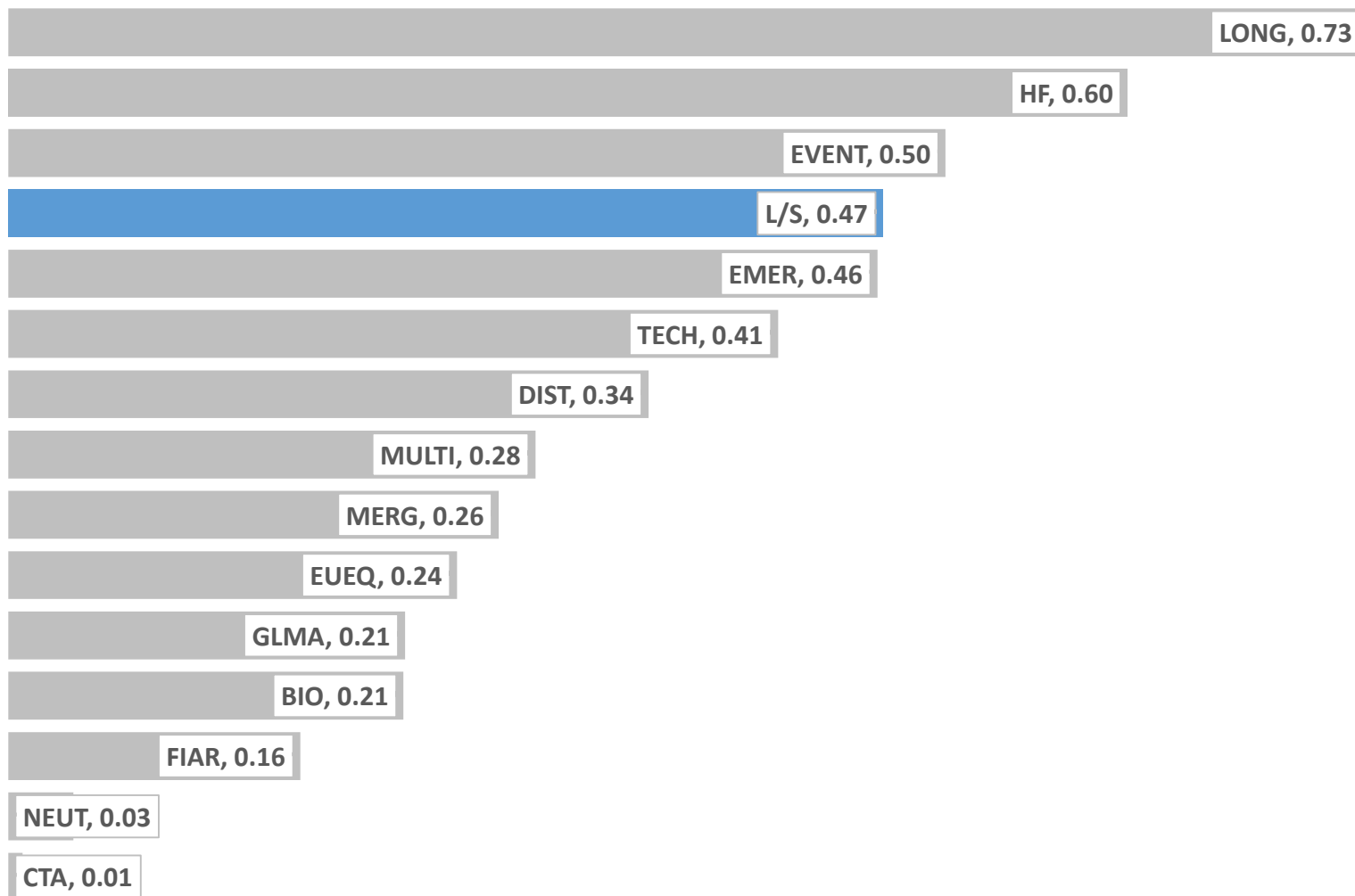
R-squared of SPX to Hedge Funds



Source: Mark Shore, Coquest Advisors; Bloomberg data

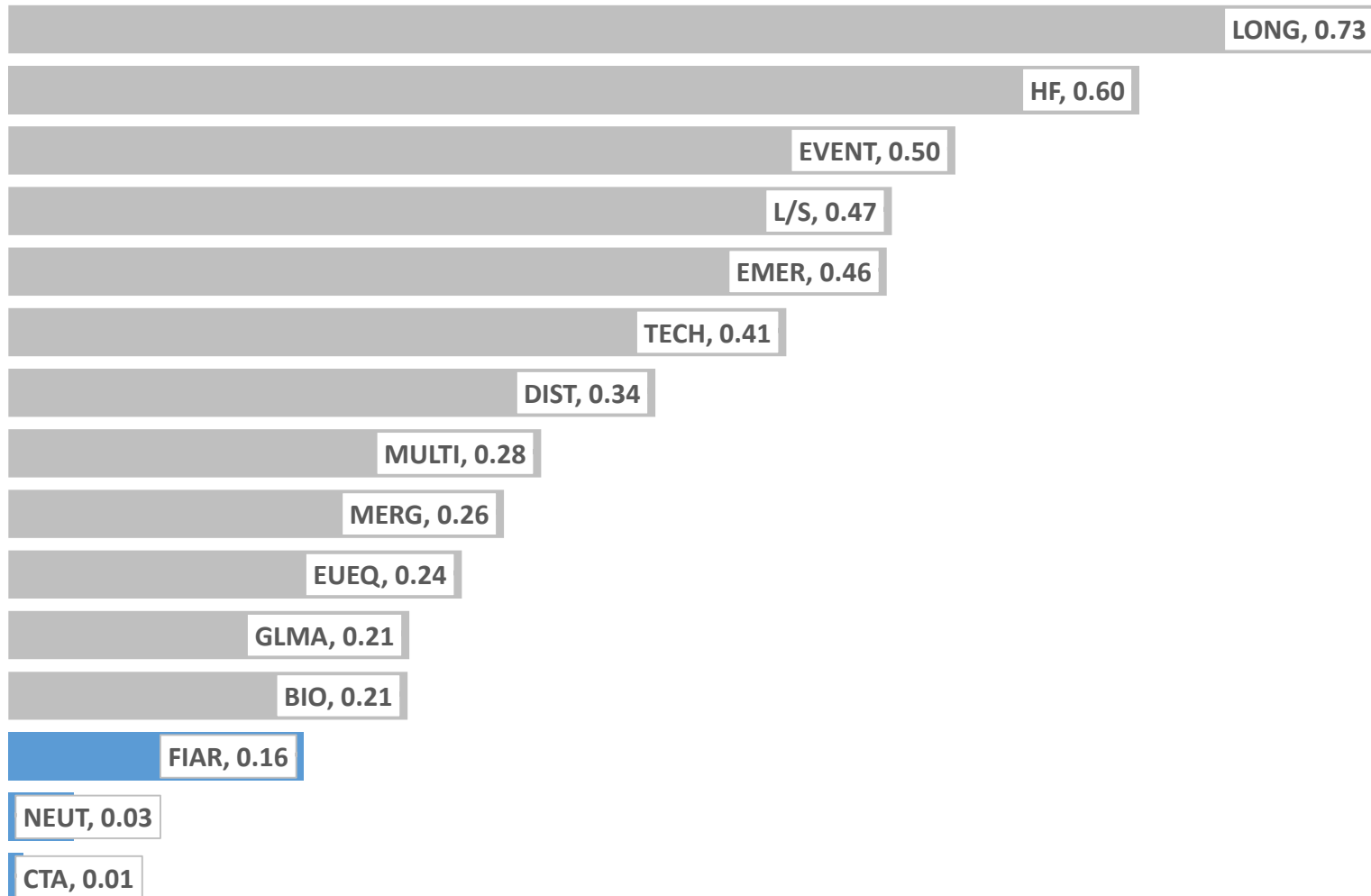
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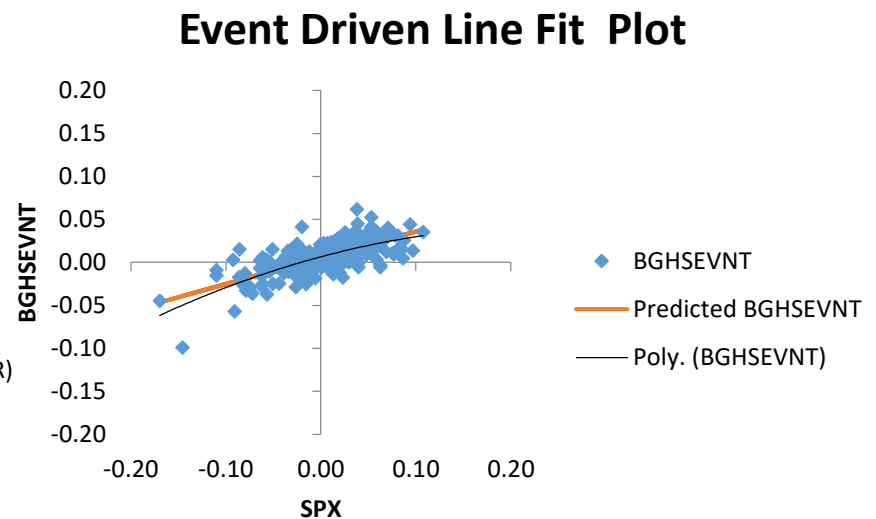
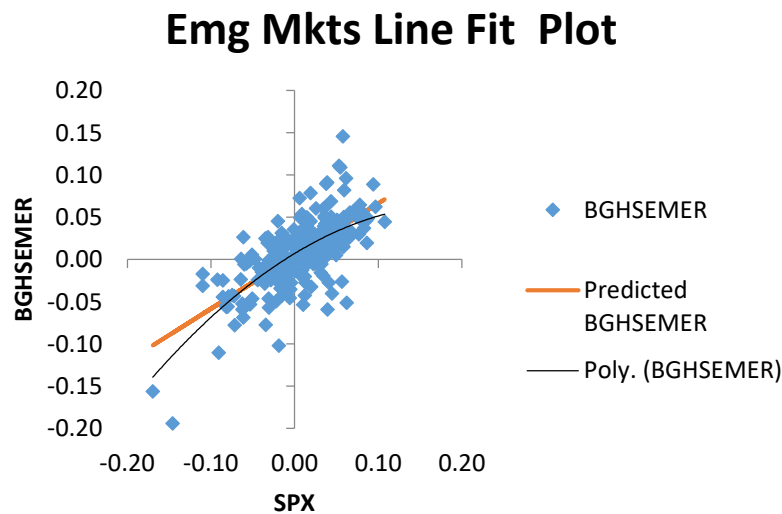
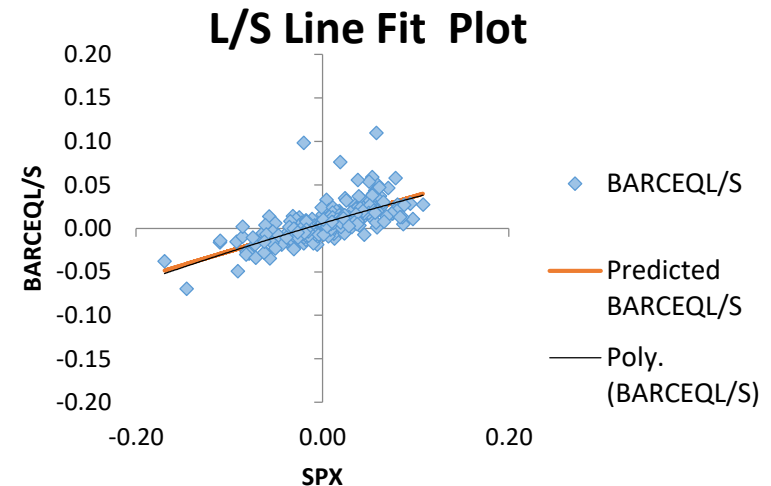
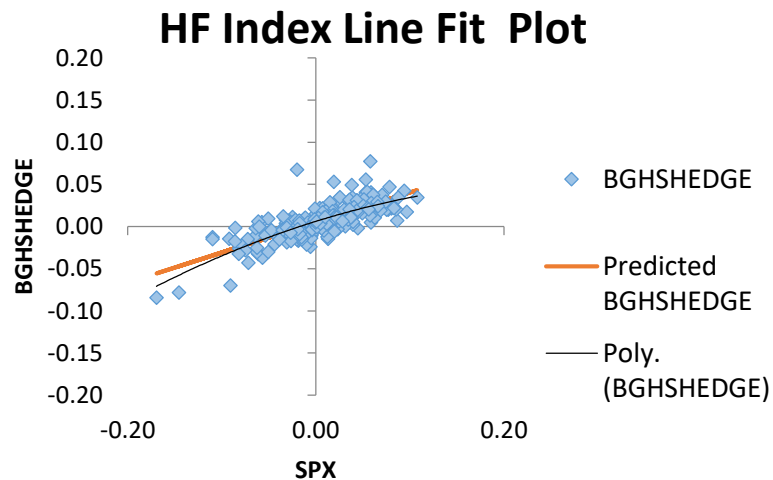
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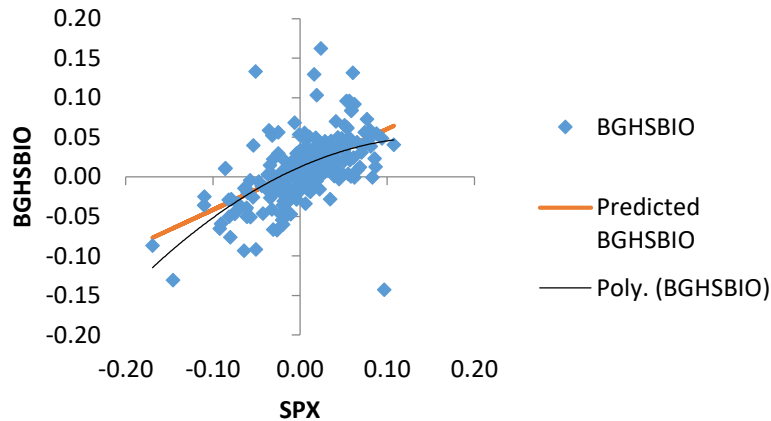
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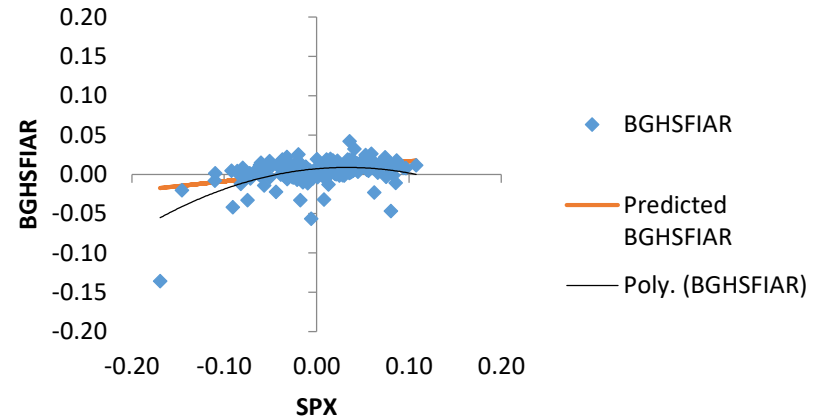
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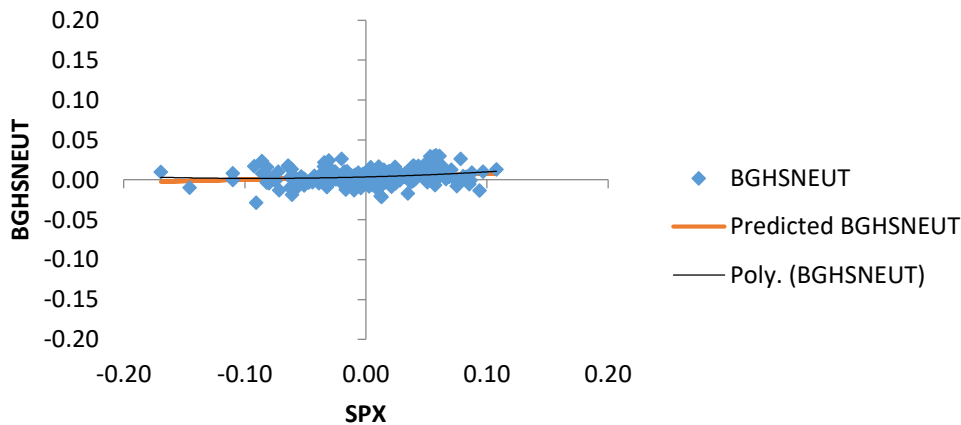
BIO Line Fit Plot



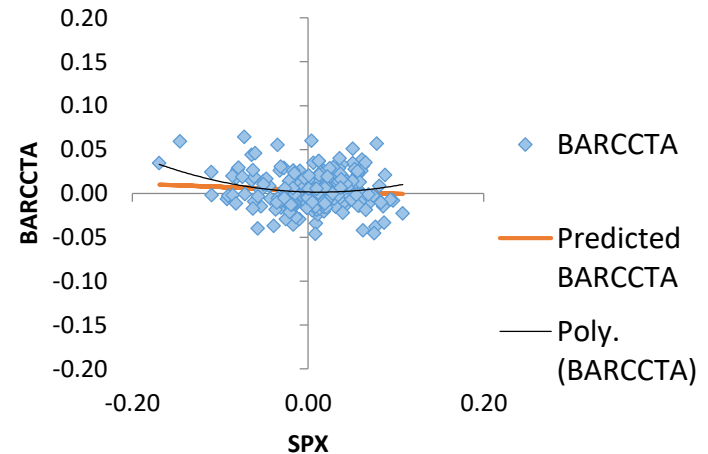
Fxd Inc Arb Line Fit Plot



Eq Mkt Neutral Line Fit Plot

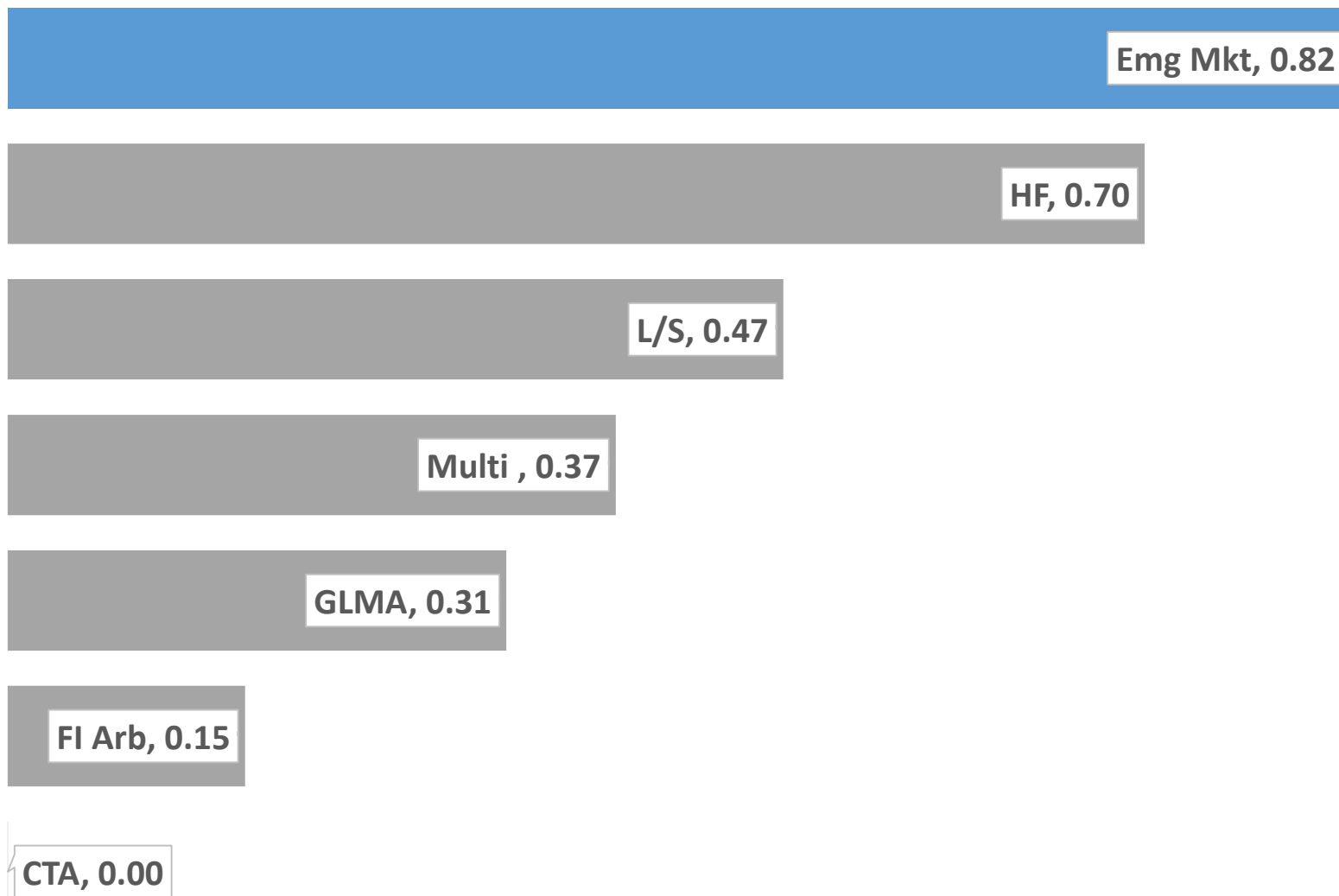


CTA Fit Plot



Source: Mark Shore, Coquest Advisors; Bloomberg data

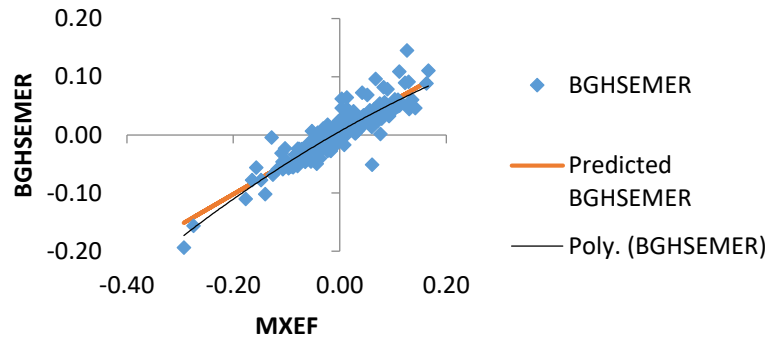
Emg Mkts HFs to MSCI Emg Mkts R-squared



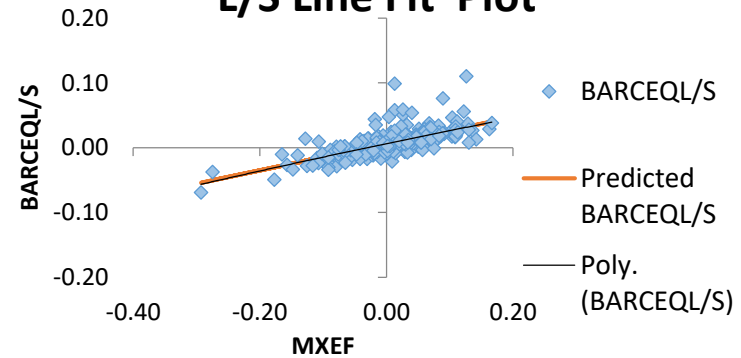
Source: Mark Shore, Coquest Advisors; Bloomberg data

Trading futures and options includes substantial risks of loss and is not suitable for all investors. Carefully consider the suitability based on your experience, objectives, financial resources and other relevant circumstances. Past performance is not indicative of future results. Please refer to additional important disclosure at the end of this document.

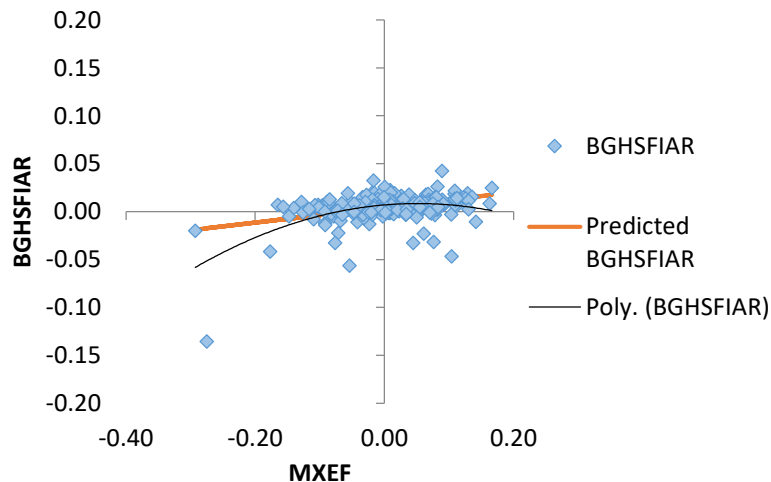
Emg Mkts Line Fit Plot



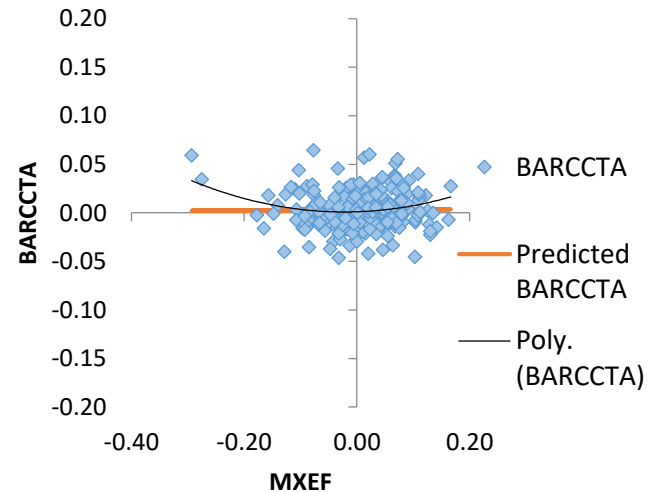
L/S Line Fit Plot



Fxd Inc Arb Line Fit Plot



CTA Line Fit Plot



Source: Mark Shore; Coquest Advisors; Bloomberg data

- 1) Hedge Funds are not all the same
- 2) Their utility is goal dependent:
 - a. Extension of the portfolio's equity exposure?
 - b. Diversification?
- 3) Evidence suggests strategies offer varying benefits
- 4) More research to come: Stay Tuned!!

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THANK YOU!

- Past performance is not necessarily indicative of future results.
- There is risk of loss when investing in futures and options. Always review a complete CTA disclosure document before investing in any Managed Futures program.
- Managed futures can be a volatile and risky investment; only use appropriate risk capital; this investment is not for everyone.
- The opinions expressed are solely those of the author and are only for educational purposes. Please talk to your financial advisor before making any investment decisions.

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