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Hedge Fund Management

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27 November 2023

PEAK Fund

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ABOUT E&F Capital Group

E&F Capital

Expedition & Frontier

E&F Capital Group aims to compensate investors risk exposure by unlocking opportunities

- Founded in 2023, E&F Capital Group is a hedge fund based in Hong Kong that helps investor navigate changing market environment.
- E&F Capital Group has a strong simulation track record of investing in public equities. We combine robust capital market research, constant review in strategies, and expert portfolio management to generate alpha.
- We help to identify optimal path with precision and foresight. Through commitment to integrity, innovation, and expertise, we guide and position our investors towards lasting success.

OBJECTIVES

Customer-Driven Approach to Investment Success

Research and Analysis

- Constant examination of historical data, understanding the underlying factors of our investment strategy, and identify possible risk exposure sources. Employing robust quantitative models that leverage advanced data analytic techniques to strive and generate alpha.

Market Expertise

- Managed by experienced team with great track record in trading strategies related to earning announcements. The trading team has deep understanding of market dynamics, access to proprietary research, and ability to leverage advanced trading techniques to navigate market complexities and capitalize on market inefficiencies.

Adaptive Approach

- Continuous monitor and evaluate the effectiveness of the trading strategy by incorporating new information and updates. Back-testing are designed to mitigate test error to provide us subjective analysis. Trading approach is flexible to changing market conditions to optimize performance.

Transparency and Communication

- Open and transparent communication with investors. Regular updates on the performance and progress of the trading strategies will be provided in a weekly based, and in-depth report in a monthly based. We believe strong communication can address investor's concerns and willing to provide any necessary information to make informed decisions.

Risk Management

- A team of expert in risk management will actively monitor and identify potential risks and respond immediate to address concerns. Risk management practices include portfolio diversification, stop-loss orders, and constant evaluation will be conducted with strict guidance.

EXECUTIVE SUMMARY

Capitalize opportunities of market reactions to earning releases

13.56%

Annual Return

5.5%

Annual Alpha

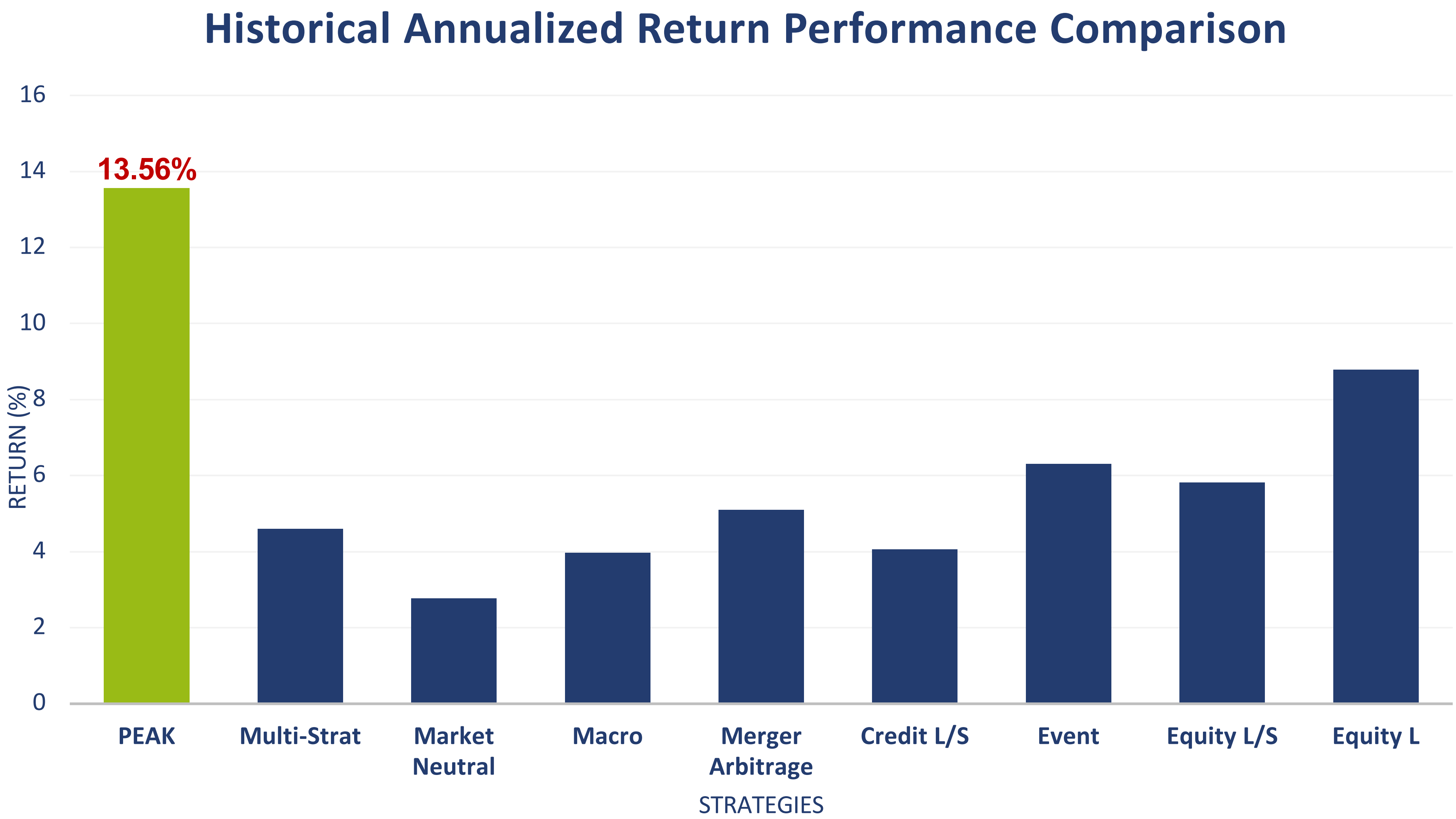
0.75

Sharpe Ratio

Abstract

- Demonstrate using Long-Only systematic trading based on Post-Earning Announcement Drift (PEAD) able to generate **5.5%** abnormal return annually.
- Strong emphasis on risk-adjusted returns with near average **0.75** Sharpe ratio throughout past 20 years (period 2002-2022).
- Our team commits to rigorous research in ensuring the investment decisions are coped with latest market insights and trends.

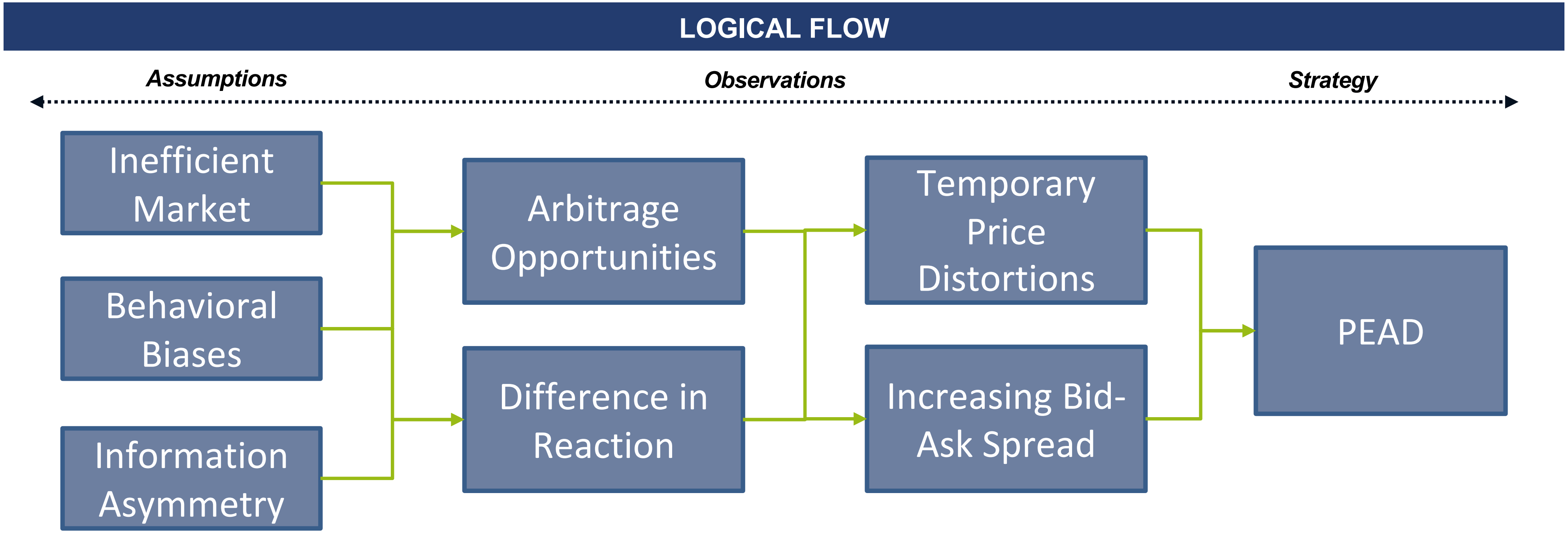
INVESTMENT PHILOSOPHY



Source: RIAIntel- The most consistently profitable hedge funds continue to prove their edge

INVESTMENT PHILOSOPHY

Strategy selection rationale: navigating success



Hypothesis

- Behavioral Biases: Investment decision is driven by psychological impact such as optimistic, fear, and panic which drives to market overreaction/ underreaction and create mispricing.
- Information Asymmetry: Intuitional investors tends to have access and analyze the information before retail investors which can take advantage of short-term price movements occurred immediately after the announcement.
- Market Inefficiencies: Investor's heterogeneity in terms of rationality, psychology, information delays, economic events and many factors result in difference between market price and fundamental expectation which gives us arbitrage opportunities.

INVESTMENT PHILOSOPHY

Strategy selection rationale: navigating success

Cumulative Abnormal Returns in Response to Earnings Announcements

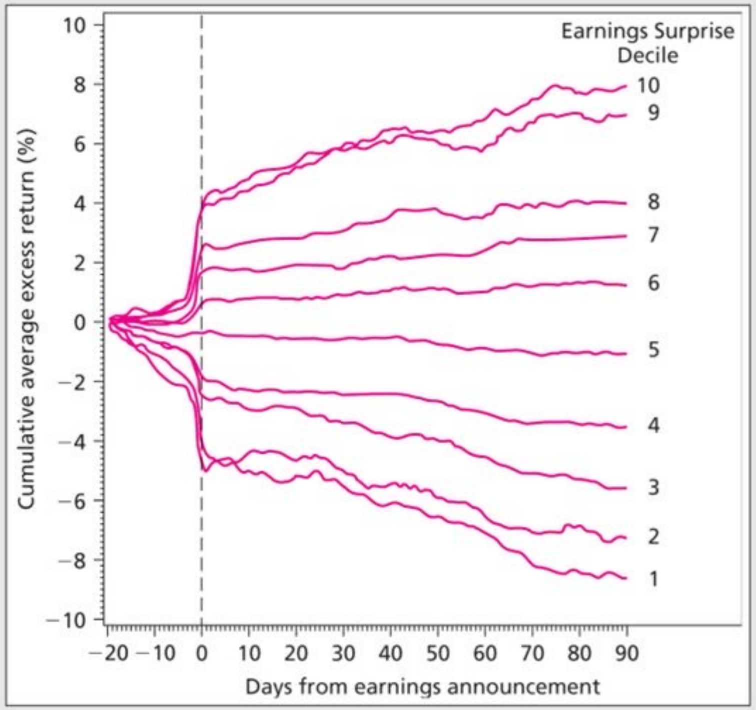


FIGURE 8.5

Cumulative abnormal returns in response to earnings announcements

Source: Reprinted from R.J. Rendleman Jr., C. P. Jones, and H. A. Latané, "Empirical Anomalies Based on Unexpected Earnings and the Importance of Risk Adjustments," *Journal of Financial Economics* 10 (1982), pp. 269–287. Copyright 1982 with permission from Elsevier Science.

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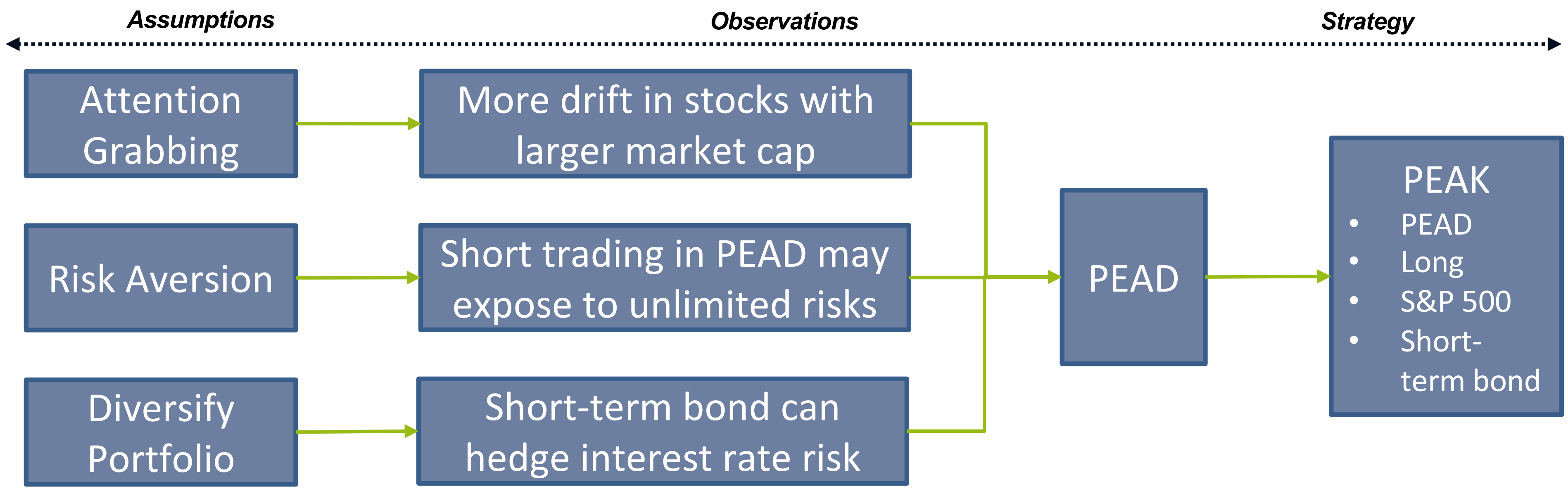
Strategy selection rationale: navigating success

LOGICAL FLOW



Hypothesis

- Attention-Grabbing Hypothesis: Majority of market drift are equities with high trading volume and high net buying by investors. Investors are naturally attracted to equities with larger market cap.
- Risk-Aversion Hypothesis: Long-only strategies are more preferred due to considerations such as transaction cost, risk management, execution complexity, and alignment with long term market trends.
- Portfolio Diversification: PEAD only involve in higher volatility and risk exposure during market downturns and interest rate risks. A need of asset class that can preserve the fund's capital during volatile environment.

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Strategy Testing and Key Insights

Data Sources

(1) E&F Capital's Calculations

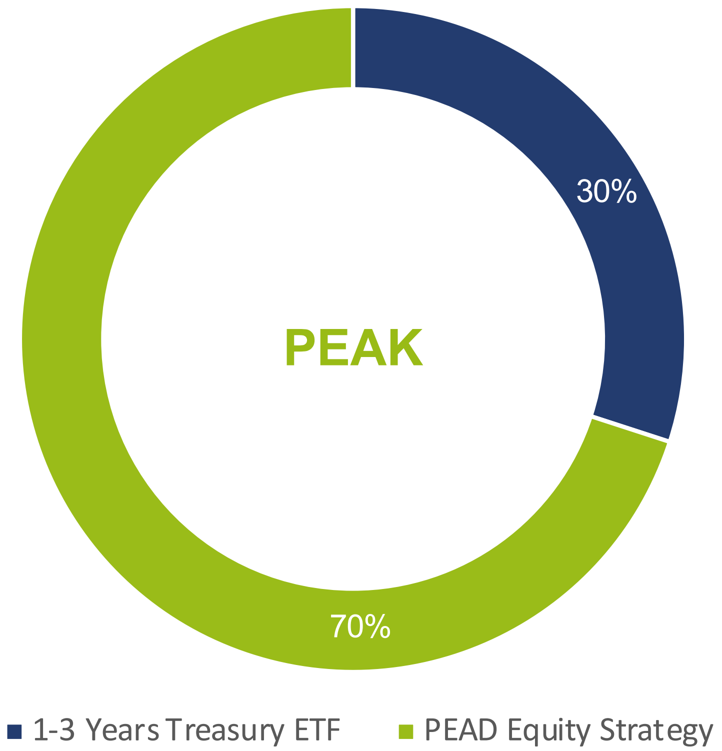
(2) CRSP Database (WRDS) & Yahoo Finance: Security Prices

(3) I/B/E/S Database (WRDS): Earnings Estimates

(4) Ken French's Data Library: Factor Returns

Strategy Trading Rule

PEAK monetizes the PEAD effect and hedge interest rate risk with short-term treasuries



1

Base on average (median) analysts' earnings forecast and actual earnings

2

Calculate the Unexpected Earnings (UE) signal:

$$UE = \frac{Actual \ - Forecast}{Forecast}$$

3

Allocate 70% capital to long stocks with positive signals

4

Allocate 30% capital to long 1-3 Year Treasury ETF

Higher and Stabler

PEAK delivers higher return with lower risk

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	S&P 500	PEAK	
Exp. Return	11.23%	**13.56%**	+ 2.33%
Exp. Volatility	19.68%	**16.51%**	(- 3.17%)
Sharpe Ratio	0.51	**0.75**	+ 0.26

Extra 26bps return

Per unit of risk

Industrial-leading Alpha

PEAK generates 5.5% alpha per annum, outperforms most of the competitors

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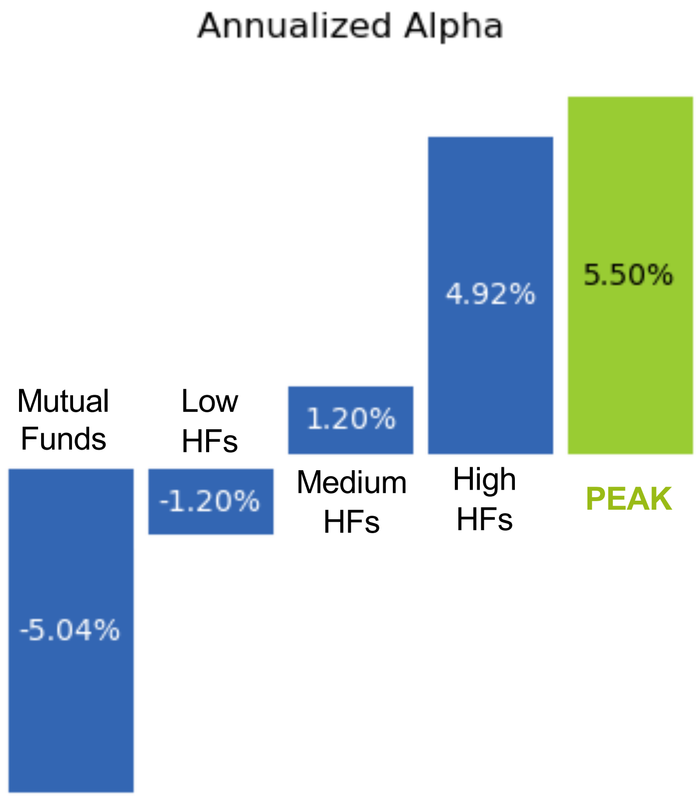

	Annualized Alpha (Daily)	P-value
CAPM (one-factor)	5.51% (22 bps)	0.009 < 0.01
Carhart (four-factor)	5.63% (22 bps)	0.006 < 0.01

Passed the two-tailed test

With 99% confidence

Factor Exposure

PEAK mainly exposes to the market and lowly correlated with Size, Value, negatively correlated with Momentum

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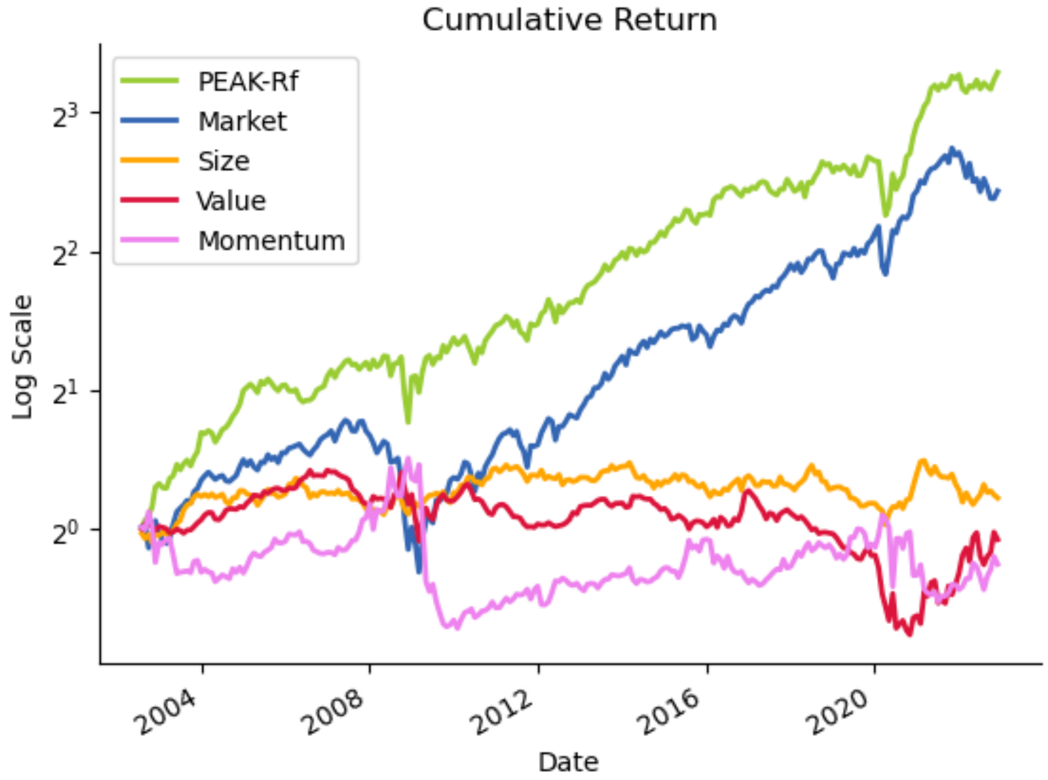
	Beta	Corr
Market (S&P 500 - Rf)	**0.645**	**0.817**
Size (SMB)	0.192	0.229
Value (HML)	0.139	0.242
Momentum (MOM)	-0.045	-0.308



Long S&P 500 stocks is the cause of high Market correlation

But a good fit for factor portfolios, especially for high Momentum portfolios

Risk Characteristics

PEAK successfully maintain lower risk level and reduce the expected losses

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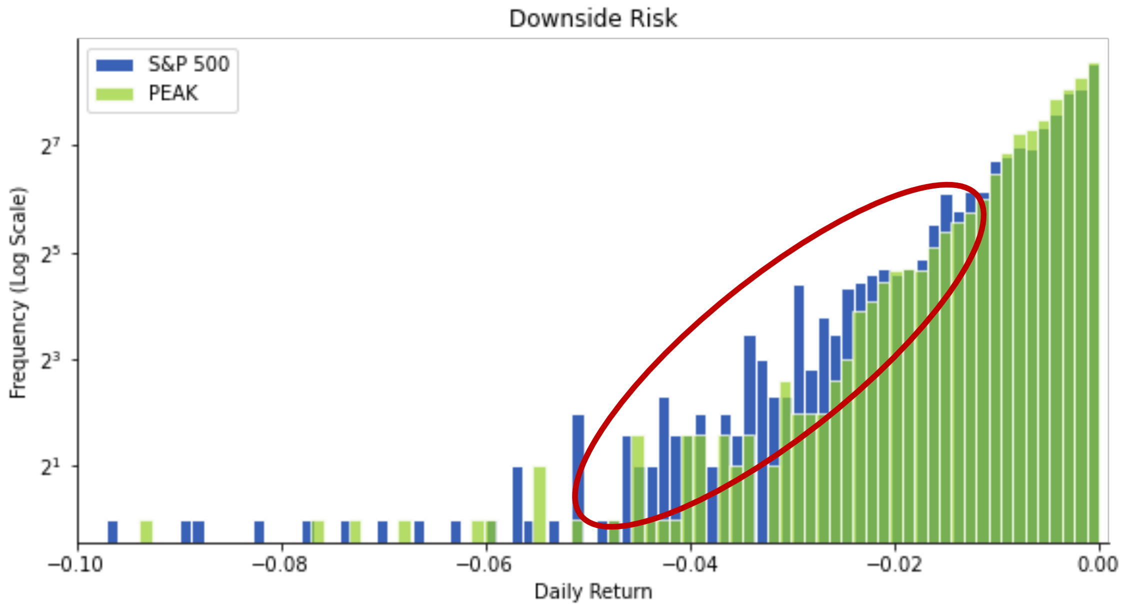

	S&P 500	PEAK		
Volatility (annualized)	19.68%	**16.51%**	(- 3.17%)	stabler return
Downside Risk (annualized)	13.81%	**12.11%**	(- 1.70%)	lower exp. losses
Skewness	-0.283	**0.090**	+ 0.373	fatter tail with less extreme losses
Excess Kurtosis	7.469	**10.009**	+ 2.540	

Risk Characteristics

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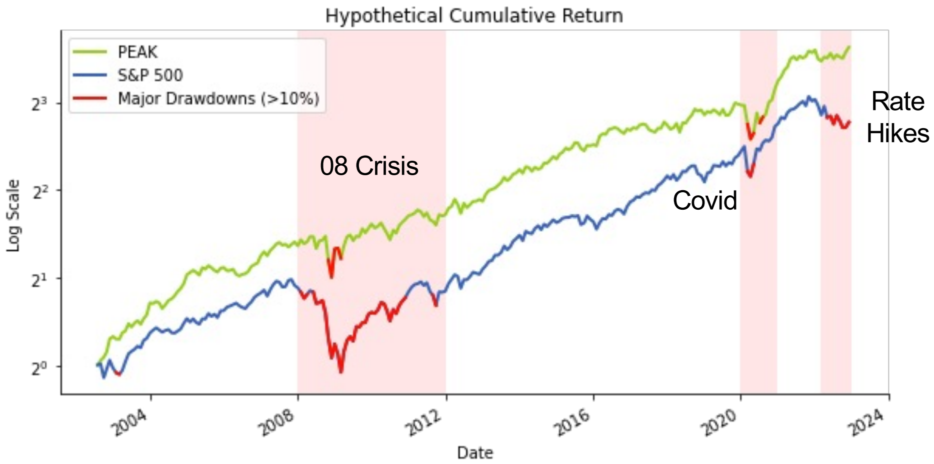

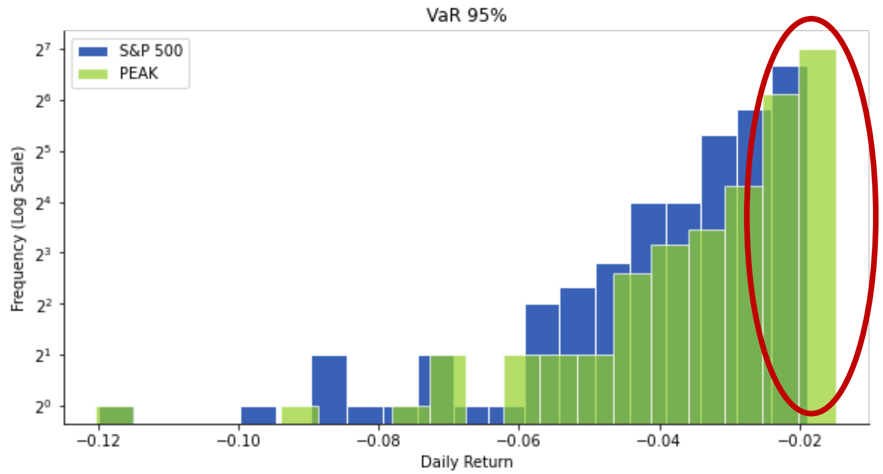

	S&P 500	PEAK		
Avg. Drawdown	8.00%	**4.11%**	(- 3.89%)	lower drawdown by one-third
Max. Drawdown	54.68%	**33.77%**	(- 20.91%)	
VaR 95% (daily)	-1.88%	**-1.48%**	+ 0.40%	lower exp. maximum loss
Exp. Shortfall 95% (daily)	-3.02%	**-2.36%**	+ 0.66%	
VaR 99% (daily)	-3.50%	**-2.63%**	+ 0.87%	
Exp. Shortfall 99% (daily)	-5.13%	**-4.15%**	+ 0.98%	

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Major Downside Risks and Associated Hedging Solutions

DOWNSIDE RISKS: TRANSACTION COST

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1. Undermine effect : Transaction cost adjusted accordingly when stock price increases

2. High alpha pair up with high transaction cost (possibly caused by high portfolio turnover)

Risk Mitigation: Long-only strategy

Since Long-only alpha ≥ Long-short alpha....

Borrow Fees ↓ **Margin Interests** ↓ **Trade Frequency** ↓ **Margin Call Risk** ↓

(Jeffrey et al., 2008)

DOWNSIDE RISKS: INFORMATION UNCERTAINTY

Source of Uncertainties

Forecasting Conditions	Accounting Quality	Difference in Earning Interpretation
(Expected EPS might not truly reflect investors' view)	(Earnings figures could be manipulated)	(Earning surprise by reduce cost might be a sign of worsen off)

Strong reaction due to increase in certainties after news / non-earning information (e.g. Company Future Direction) is announced

Risk Mitigation: Information tracking

1. Regular catchup on company's information apart from earning surprise

2. Invest in firms that have good accounting quality

(Fink, 2021)

DOWNSIDE RISKS: LIQUIDITY RISK

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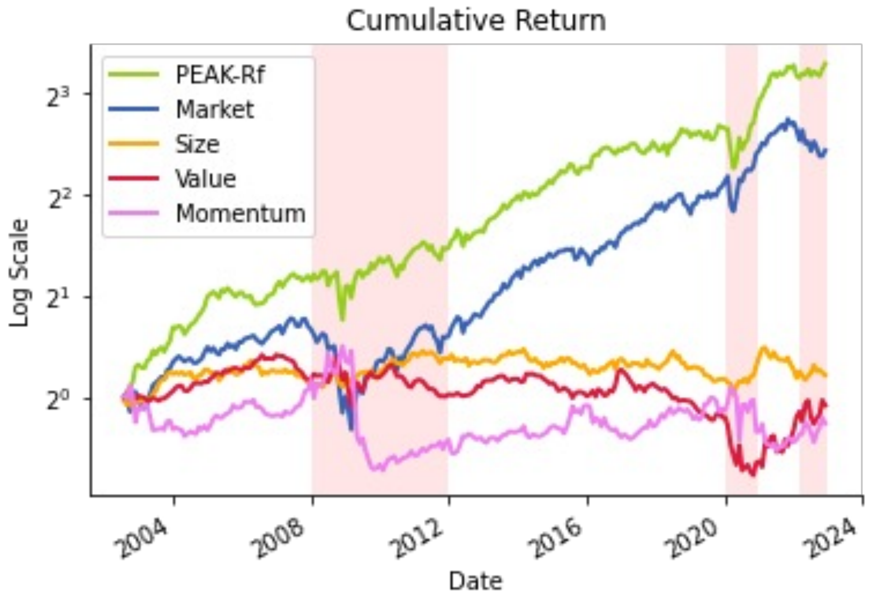
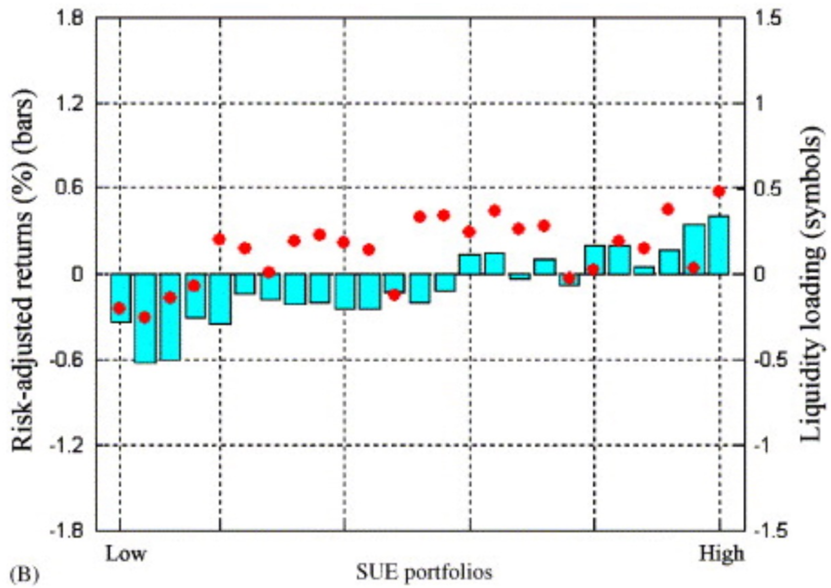
It was argued that **large portion of gain** from PEAD is contributed to bearing of liquidity risk



PEAD return as risk premium ?



Risk Mitigation:

1. Adopt separate managed account (SMAs) for allowing higher flexibility and transparency to our investors (e.g. shorter investment horizon)

2. PEAK successfully hedged against market collapse (2008-2012) => implies that systemic liquidity risk is not high

(Chen et al., 2017)

DOWNSIDE RISKS: INSIDER TRADING

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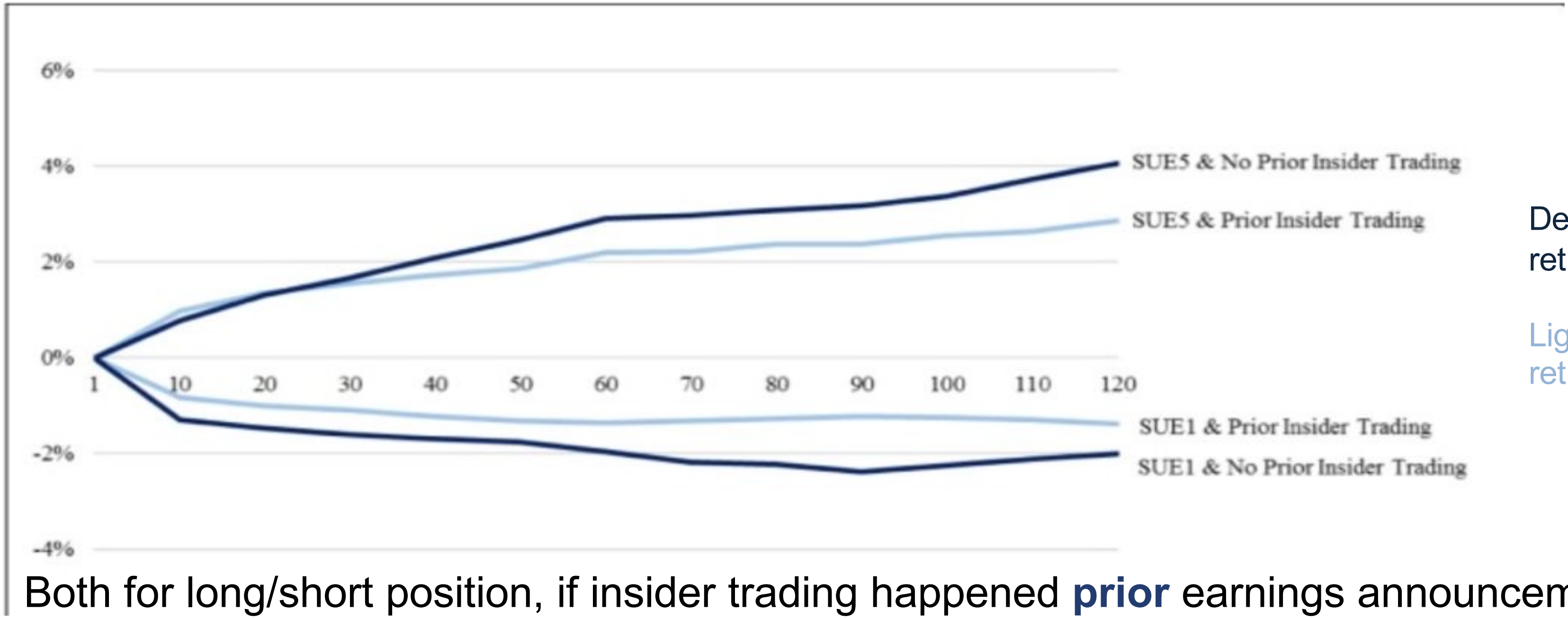

Deep Blue = PEAD abnormal return without insider trading

Light Blue =PEAD abnormal return with prior insider trading

Both for long/short position, if insider trading happened **prior** earnings announcement date will lead to **smaller Alpha**

Risk Mitigation:

Given there are financial regulations to prevent insider trading, it is difficult to detect it. Yet, we propose a potential solution :

-> If suspected insider trading signals during **pre-announcement periods** turns out to be **contradict** with earnings surprise, it may imply PEAD would be much **smaller**.

(Tonks et al., 2017; Choi et al., 2023)

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Fund Terms and Structure

PRELIMINARY SUMMARY OF FUND TERMS

Minimum Account Size	• USD $2,000,000
Management Fee	• 1% Annual Fee
Incentive Fee	• 20% HWM paid Quarterly
Structure	• Separately Managed Accounts (SMAs)
Investment Strategy	• PEAK (PEAD & Portfolio Diversification)
Liquidity	• Daily
Target Market	• S&P500 Equity Market Only
Period of Rebalancing	• Quarterly
Benchmark	• S&P 500
Reporting	• Daily Internal Reporting, Weekly Investor Updates, Monthly Strategy Review

ORGANIZATION CHART

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INVESTMENT PROFESSIONALS

BUSINESS OPERATIONS

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APPENDIX

Formula:

- Earning surprise = Actual EPS - Expected EPS
- Unexpected Earning = Earnings surprise / Expected earnings
- Sharpe ratio = (return of portfolio – risk-free rate) / Standard deviation of portfolio
- Return = (stock price at t+1 / stock price at t) - 1
- Annualized Volatility = sqrt. (252) x standard deviation

Statistical and Financial Model used:

- Regression
- F-test
- CAPM Model
- Carhart (4-factor) Model
- Value-at-Risk Model

Data Collection:

- Data base: Yahoo finance, WRDS (S&P 500), Ken French’s Data Library
- Analysis tools used: Excel, Python