Overview

1. What is Momentum?

2. Do transaction costs destroy profits?

3. Is momentum too crowded?

4. Can an open secret work in the future?
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Stock Picking Momentum 101: Buy Past Winners

Compare A and B
⇒ A > B
⇒ Buy Stock A

Charts presented are for illustrative purposes only.
Few Deny the Empirical Facts

“The premier anomaly is momentum...”

Overview

1. What is Momentum?

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3. Is momentum too crowded?

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Do Transaction Costs Destroy Momentum?

Illusion?

Exploitable?
Papers Highlighting Momentum Has Capacity Constraints


Estimated Momentum Capacity ($B)

$5B or $50B+ Capacity?

Performance figures contained herein are hypothetical, unaudited and prepared by Alpha Architect, LLC; hypothetical results are intended for illustrative purposes only. Past performance is not indicative of future results, which may vary.
Who’s Right?

Conflicted Pros?

Ivory Tower?

Source: https://www.askideas.com/27-most-funny-fights-pictures/
Reality Check: What Would It Cost to Trade the Market?

S&P 500 Trading Costs

Source: “Trading Costs of Asset Pricing Anomalies” by Frazzini, Israel, and Moskowitz (2015) Performance figures contained herein are hypothetical, unaudited and prepared by Alpha Architect, LLC; hypothetical results are intended for illustrative purposes only. Past performance is not indicative of future results, which may vary.

Practitioner Data is More Credible
Momentum has capacity, but **it is not unlimited!**

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<th>Holding Period for each Stock</th>
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Long-only generic **momentum** portfolios: CAGR

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Overview

1. What is Momentum?

2. Do transaction costs destroy profits?

3. Is momentum too crowded?

4. Can an open secret work in the future?
Is Momentum Overcrowded?
The data suggest that ETFs are not “crowding” factors

“…aggregate factor exposures turn out to be close to zero…

…the evidence] argues against the concern that factor premiums are being arbitrage away…
Is Everyone a Momentum Factor Investor? **Nope.**

Source: Are Exchange-Traded Funds Harvesting Factor Premiums? by David Blitz. The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Additional information regarding the construction of these results is available upon request. Sample is from 2011 to 2015. Indexes are unmanaged, do not reflect management or trading fees, and one cannot invest directly in an index. All returns are total returns and include the reinvestment of distributions (e.g., dividends).
Who Are the Momentum Factor Investors? **Not the PhDs.**

### (A) Ten Largest Positive Exposures

<table>
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<tr>
<th>Fund</th>
<th>Exposure</th>
<th>12M Return</th>
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<td>ITB US</td>
<td>iShares US Home Construction</td>
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<td>ICF US</td>
<td>iShares Cohen &amp; Steers REIT</td>
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<td>Vanguard REIT</td>
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<td>SPDR Dow Jones REIT</td>
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<td>SPDR S&amp;P Homebuilders</td>
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<td>Schwab US REIT</td>
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<td>iShares US Real Estate</td>
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<td>SPDR S&amp;P Biotech</td>
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<td>XLU US</td>
<td>SPDR Utilities Select</td>
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<td>VPU US</td>
<td>Vanguard Utilities</td>
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### (B) Ten Largest Negative Exposures

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<th>Exposure</th>
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<td>VGT US</td>
<td>Vanguard Information Technology</td>
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<tr>
<td>XLK US</td>
<td>SPDR Technology Select</td>
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<td>SPDR Energy Select</td>
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<td>Vanguard Energy</td>
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<td>XOP US</td>
<td>SPDR S&amp;P Oil &amp; Gas Exploration and Production</td>
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**Momentum Factor Funds Aren’t Driving Market**

Source: *Are Exchange-Traded Funds Harvesting Factor Premiums?* by David Blitz. The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Additional information regarding the construction of these results is available upon request. Sample is from 2011 to 2015. Indexes are unmanaged, do not reflect management or trading fees, and one cannot invest directly in an index. All returns are total returns and include the reinvestment of distributions (e.g., dividends).
Are Momentum ETFs Even Trading Momentum? **Not Really.**

Practitioner Momentum Portfolios

Academic Momentum Portfolio

Mega-Cap Factor or Momentum Factor?
Overview

1. What is Momentum?

2. Do transaction costs destroy profits?

3. Is momentum too crowded?

4. Can an open secret work in the future?
Too Many CFAs…
Too Many Computers…
Too Many Quant PhDs…

“Momentum Investing is Dead.”

Or is it?
Let’s step back…

Why Do Strategies “Work” In the first place?
Markets are efficient.

No they aren’t! People are insane.

Yes they are! Why can nobody beat the market?

Because people are insane!

Nobody Seems to Know the Answer
Why “Open Secrets” May Continue to Work…

Higher Risk + Mispricing = Expected Excess Return

Secret Formula: No Pain, No Gain
Risk is risk and "Mispricing" is not easy to exploit

Risk is risk and "Mispricing" is not easy to exploit

Relative Performance Destroys Careers

God can identify mispricing better than anyone...

CAGR by Ranking Decile (1927 to 2016)

Source: The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. In fact, these results are **IMPOSSIBLE to attain** because they have explicit look ahead bias. The deciles are based on 5-year look-ahead of total returns. All returns are total returns and include the reinvestment of distributions (e.g., dividends).
But Even God can’t destroy risk…

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Looking for **Excess Returns**?

**Questions to Consider:**
- Higher fundamental risk?
- Tough to exploit mispricing?
- Is my capital sustainable?

**Higher Risk** + **Mispricing** = **Expected Excess Return**
Overview

1. What is Momentum?
   • Buying winners.

2. Do transaction costs destroy profits?
   • No, but capacity is limited.

3. Is momentum too crowded?
   • No, at least measured via ETF market.

4. Can an open secret work in the future?
   • Yes, via risk and costly arbitrage.
Knowledge is power, right?
A FEW FACTS RELATED TO MOMENTUM
Momentum has worked, but requires **Focus/Frequency**

Long-only generic **momentum** portfolios: CAGR

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+ **Focused Factors** **Increase** Expected Performance
- **Focused Factors** **Increase** Tracking Error & Volatility

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Risky: Long-only momentum portfolios can lose big!

- **FF_MOM** = Top Decile Momentum
  - Ranked on cumulative 12 months, skip last month
  - Monthly rebalanced
- **SP500** = SP500 Total Return Index

**Simulated Performance:** 1/1/1927 to 12/31/2016, Gross of fees, total returns, including dividends and distributions

High Absolute Risk

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Risky: Long-only momentum portfolios can underperform!

5-Year Rolling CAGR Relative to S&P 500

• FF_MOM = Top Decile Momentum
  ▪ Ranked on cumulative 12 months, skip last month
  ▪ Monthly rebalanced
• SP500 = SP500 Total Return Index
• Simulated Performance: 1/1/1927 to 12/31/2016, Gross of fees, total returns, including dividends and distributions

High Relative Risk

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Our Best Effort: **Quantitative Momentum**

1. **Identify Universe**
2. **Core Momentum** Screen
3. **Momentum Quality** Screen
4. **Seasonality** Screen
5. **Invest with Conviction** (~50 stocks)

- **Focused**
- **High turnover**
- "Frog in the pan" momentum
- Momentum seasonality
- Massive tracking error

**Bottom line? High Expected Returns Have High Risk**
Our Firm Mission and *Passion*:

**We Empower Investors Through Education**

*In order to*

**Develop *Sustainable* Investors**
IMPORTANT INFORMATION - DISCLOSURES

There are risks involved with investing, including loss of principal. There is no assurance that the objectives of any strategy or fund will be achieved or will be successful. No investment strategy, including diversification, can protect against market risk or loss. Current and future portfolio holdings are subject to risk. Past performance does not guarantee future results.

There is a risk of substantial loss associated with trading commodities, futures, options and other financial instruments. Before trading, investors should carefully consider their financial position and risk tolerance to determine if the proposed trading style is appropriate. Investors should realize that when trading futures, commodities and/or granting/writing options one could lose the full balance of their account. It is also possible to lose more than the initial deposit when trading futures and/or granting/writing options. All funds committed to such a trading strategy should be purely risk capital.

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Index returns are for illustrative purposes only and do not represent actual fund performance. References to an index do not imply that the portfolio will achieve returns, volatility or other results similar to that index. The composition of the index may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility or tracking error targets, all of which are subject to change. Index performance returns do not reflect any management fees, transaction costs, or expenses, which would reduce returns.

Indexes are unmanaged and one cannot invest directly in an index. There are no active components of indexes; therefore, using them as a proxy can be of limited value because there is no guarantee that the portfolio would have been managed to match the index. Realized returns and/or volatility may come in higher or lower than expected.

Annual performance is calculated based on monthly return streams, geometrically linked as of the end of the specified month end.

Results, unless cited otherwise, are shown gross of fees and do not reflect the effect of investment fees which would lower performance. Performance reflects the reinvestment of dividends and other earnings. The following hypothetical illustrates the compound effect fees have on investment return: For an account charged 1% with a stated annual return of 10%, the net total return before taxes would be reduced from 10% to 9%. A ten year investment of $100,000 at 10% would grow to $259,374, and at 9%, to $236,736 before taxes. For a complete description of all fees and expenses, please refer to Alpha Architect’s Form ADV Part 2A.
IMPORTANT INFORMATION - DISCLOSURES

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**Past performance is not indicative of future results, which may vary.**

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