Momentum Investing

Myth vs Reality

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Introduction

Momentum has proven to be one of the strongest and most robust sources of returns since modern markets were established, having been empirically verified for over 200 years across all major asset classes (Geczy & Samonov, 2015) . But as investors have ramped up their focus on systematically capturing a variety of alternative return sources (e.g. quality, low volatility, etc.), myths about momentum have proliferated. In this article we will tackle the three most egregious misperceptions about momentum:

1. Momentum is tax-inefficient due to its high turnover
2. Momentum is the same thing as growth since both focus on securities that have "done well"
3. Momentum is an overtly risky trading strategy since it invests in the highest flying names

The goal of this paper is to provide a rigorous review of where these myths come from and why they are inaccurate. By the end of this paper you will hopefully have a refined understanding of the realities of momentum investing:

1. Momentum is actually rather tax-efficient given its propensity to rotate holdings at short-term losses and long-term gains
2. Momentum and growth portfolios actually have little overlap in holdings due to their dramatically different screening criteria
3. Momentum is actually one of the best risk mitigation tools available to long-term investors when utilized to avoid downturns

Myth 1: Tax Inefficiency

Momentum can be defined in a myriad of ways, but regardless of the precise definition used, at its core a momentum strategy tilts a portfolio towards the best recent performers and away from the worst recent performers. There is no denying that momentum strategies increase turnover compared to buy-and-hold strategies, given the simple fact that you are constantly rotating out of recent losers and into recent winners. A taxable investor might assume that this turnover would make this strategy generally uninteresting on an after-tax basis. Not so fast! It turns out that turnover isn't always a good proxy for effective tax rate. Effective tax rates are dependent on both turnover as well as how gains are realized. To minimize tax burdens, taxable investors always want to realize short-term losses before long-term losses (to offset gains at the higher tax rate) and long-term gains before short-term gains (to avoid the higher tax rate). Hence high turnover is much less problematic in a strategy that realizes taxes in the above order as opposed to one of the three other possible ordering combinations.

To put some numbers behind this, let's consider a diversified global portfolio of equities, real assets, bonds, and cash[1]. Applying a standard Dorsey Wright momentum strategy to this portfolio[2], and making some simple tax assumptions[3], we have the following tactical asset allocation portfolio performance results[4]:

Figure 1. Performance of Tactical Asset Allocation Strategy

	Tactical Portfolio	Strategic Portfolio	Tactical - Strategic	Tactical Portfolio (Post Tax)	Strategic Portfolio (Post Tax)	Tactical - Strategic (Post Tax)
Cumulative Return	2112%	1009%	1103%	1061%	664%	397%
CAGR	11.50%	8.83%	2.67%	9.00%	7.41%	1.59%
Max Drawdown	-27.89%	-38.82%	10.93%	-31.78%	-38.82%	7.05%
Standard Deviation	9.48%	9.98%	-0.50%	9.91%	10.00%	-0.09%
Skew	-0.78	-1.11	0.33	-0.76	-1.08	0.32
Kurtosis	2.00	5.12	-3.12	1.65	4.93	-3.28
Turnover Ratio	68%	14%	54%	68%	14%	54%
Sharpe	1.12	0.80	0.32	0.82	0.66	0.17
Sortino	2.82	1.98	0.84	2.12	1.70	0.43

The first thing one notices is that the cumulative average growth rate (CAGR) holds up very well on an after-tax basis! The tactical portfolio produced an annual return of 11.5% before taxes, and a 9.0% annual return after taxes. This amounts to an effective tax rate of 22%, far below the assumed short term tax rate of 40%, which I think a lot of readers would probably assume our effective tax rate would be closer to. For those not convinced, let's put this number in context. Looking at the strategic portfolio's returns before and after taxes (8.83% and 7.41%), we see that the portfolio with simple monthly rebalancing has an effective tax rate of 16%. So we see that an increase in turnover from 14% to 68% only raised the effective tax rate by 6%! This is a glaring indictment on the idea that the higher turnover that generally accompanies momentum strategies inevitably hamstrings these strategies on an after-tax basis[5].

What about our assertion that the reason momentum strategies are deceptively tax efficient is because of their propensity to realize long-term gains disproportionately more than short-term gains, while also realizing short-term losses before long-term losses? For the example given here it turns out that 82% of the net realized gains are long-term, while only 18% of the net realizations are short-term! Hence the ideal ordering of gain realization is clearly realized.

1 The strategic asset allocation (SAA) portfolio is: 35% US Equities, 15% Foreign Equities, 10% Real Assets, 35% Fixed Income, and 5% Cash. Each asset class (besides cash) invests in a diversified portfolio of ETF's.

2 This tactical asset allocation (TAA) strategy utilizes Nasdaq Dorsey Wright's standard RS matrix methodology, and can tactically underweight/overweight each asset class +-20% and each underlying ETF +-10%.

3 Tax Assumptions: 1. Paid annually in March, 2. 40% short-term rate/20% long-term rate/5% state rate, 3. FIFO lot treatment, and 4. No netting outside of this portfolio (losses carried over only).

4 Backtesting was performed from 1/1990-5/2018. TAA portfolio was traded on each month end. SAA portfolio was rebalanced at each month end.

5 There is a great paper we recommend for further reading, which compares the tax efficiency of momentum to value: "How Tax Efficient Are Equity Styles?" by Israel & Moskowitz, Initiative on Global Markets, Chicago Booth Paper 12-20. This article is a nice complement to the current paper because it focuses on market neutral equity momentum harvesting, as opposed to the cross-asset, directional access to momentum discussed here. It also reviews the surprising tax inefficiency of value investing given the strategy's propensity to invest in higher dividend paying stocks that are taxed at short-term rates.

Myth 2: Momentum = Growth

The myth that growth and momentum are similar stems from the intuitive sense that both strategies seek to profit by aligning with the market consensus (as opposed to being a contrarian strategy like value). But if we dig into the definition of growth and momentum, we will quickly find that this intuition is misleading due to the very different methods used to create each strategy. And if we dig even further into each strategy's investment characteristics, we will see that the holdings and sector exposures of the strategies are typically very misaligned.

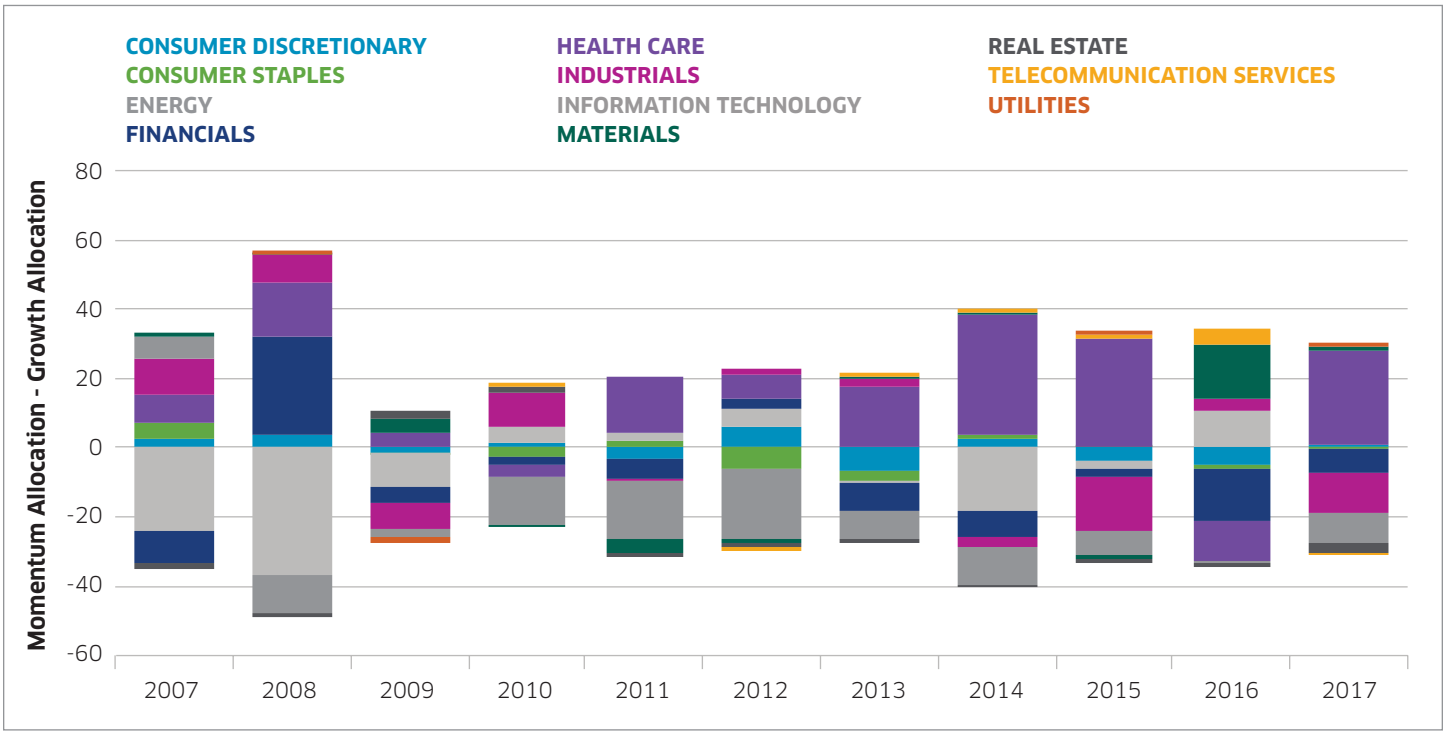
Let's begin by defining textbook long-only strategies for both growth and momentum. Growth is typically defined by averaging a handful of metrics that measure balance sheet growth over the past 5 years. For this paper we create a growth strategy by starting with the Russell 3000 universe and then investing equally in all stocks that are in the top half of the universe for four metrics: 5-year earnings growth, 5-year sales growth, 5-year cash flow growth, and 5-year book value growth[6]. Our momentum strategy begins with the Russell 3000 universe and equally owns the 100 stocks with the highest trailing 12-month price momentum.

From these standard industry definitions of growth and momentum we immediately notice that growth has a 5-year lookback window, substantially different from momentum's 12-month lookback. It is well known that different lookback windows for consensus trades provide very different forward looking results, hence we would expect strong differences between the two strategies purely based on the lookback window. In addition, growth uses a set of fundamental measures as opposed to purely price-based measures.

But who's to say that the resulting portfolios don't look and behave similarly? If we look at the year-end holdings for each portfolio over the past ten years, on average the portfolios only have a 3% overlap by name. In other words, of the 100 names in the momentum portfolio, on average only about 3 of those 100 names were in the growth portfolio. Ok, but what about portfolio-level characteristics? Though the names don't overlap, the portfolios could still behave similarly! Figure 2 shows the relative sector exposures for the two strategies over the last 10 years. We clearly see large enough discrepancies in sector allocations between the two strategies to conclude the strategies are only marginally similar at the portfolio level.

The way growth is defined, along with its specific holdings and sector exposures, will hopefully make you think twice before grouping this class of strategies with momentum.

Figure 2. Relative Sector Allocations: Growth vs Momentum Strategies



6 Some of you may astutely recognize this list as the 4 historical measures that Morningstar uses to define growth: https://corporate.morningstar.com/US/documents/MethodologyDocuments/FactSheets/MorningstarStyleBox_FactSheet_.pdf.

Myth 3: Momentum is Very Risky

The notion that momentum strategies carry outsized risk comes from the reasonable assumption that you are predominantly investing in high flying names with steep gains that come at the risk of large declines. And this is generally true for portfolios like the one we just considered in our discussion comparing momentum vs growth. But what about the first strategy we considered in our tax discussion? Looking at Figure 1 we see that the tactical portfolio lowered the max drawdown from 39% to 28%! So what's the deal?

It turns out that momentum can be broken up into two types: relative momentum and absolute momentum. Relative momentum goes long the strongest performers regardless of their absolute momentum level. For example, if a universe of stocks is all down, a relative momentum strategy would be long the best performing stocks of the group, even if their trailing 12 month momentum was negative. Absolute momentum on the other hand would shift out of those top names in favor of cash or some other asset class, in an attempt to avoid negative returns[7].

Let's now return to our tactical asset allocation strategy from Figure 1. This model tactically shifts between asset classes, capped at shifts of 20% (i.e. a 45% equity allocation can shift between 25% and 65%). Hence our tactical asset allocation model is an example of an absolute momentum strategy, as large exposures to riskier asset classes can be shifted to less risky asset classes like cash and fixed income if absolute performance isn't strong for the "risk-on" asset classes. This is why the momentum implemented in our tactical portfolio of Figure 1 improves risk: it is utilizing absolute momentum![8]

Conclusion

Hopefully we have helped quell some of the key misunderstandings about momentum investing and have encouraged you to consider momentum from a broader portfolio perspective. Momentum is a timeless source of alpha that can be captured in a tax-efficient way, a distinct return source from growth, and can be a valuable source of risk mitigation.

REFERENCES

Geczy, C., & Samonov, M. (2015, May). Two Centuries of Multi-Asset Momentum (Equities, Bonds, Currencies, Commodities, Sectors and Stocks). Retrieved from SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2607730

7 Absolute momentum strategies are also known as trend-following strategies.

8 This model in fact has both relative and absolute momentum components, in an effort to harvest both types of momentum. If we removed the absolute momentum components we would in fact see the risk mitigation component of the strategy disappear.

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