

POWER MOMENTUM STRATEGIES

Focused, stock-based, investment models utilizing quantitative market indicators to enhance performance

*Power Momentum-Blue Chip
Power Momentum-NDX 100
Power Momentum-Rising Dividend*

Bruce C. Greig, CFA, CAIA, CMT

Director of Research

Adam Quiring

Principal Partner

Bradford Giaimo

Principal Partner

This research paper is only to be used in one-on-one presentations where a financial professional is able to explain the limitations associated with hypothetical data. The Disclosure page is an integral part of this presentation

Power Momentum Strategies

Focused, stock-based, investment models utilizing quantitative market indicators to enhance performance

Power Momentum-Blue Chip
Power Momentum-NDX 100
Power Momentum-Rising Dividend

Bruce C. Greig, CFA, CAIA, CMT

Director of Research

Adam Quiring

Principal Partner

Bradford Giaimo

Principal Partner

Introduction

Established in 2006, Q3 Asset Management (Q3) is an independent Registered Investment Advisory firm offering a diverse blend of quantitative investment strategies. Our mission is to provide financial advisors and their clientele with an investment approach that maintains the ability to adapt to changing market conditions. We are firm believers that true diversification lies in combining a strategic blend of non-correlated investment programs.

Studies show that investment performance is negatively affected by human emotion. As such, the use of mechanized trading systems may help protect a portfolio from poor decision making. Q3 developed The Power Momentum Strategies with this mind – to offer investors a 100% rules-driven approach that maintains the ability to react to changing markets, in turn providing investors with an increased chance of investment success.

Our approach to managing client portfolios is always hands on. This “active” style differs from that of typical investors who rely on a “buy and hold” strategy or as we call it “buy and hope.”

The Power Momentum Strategies are a unique solution in the investment landscape as they layer several trading techniques on top of each other. This multi-pronged approach results in models which do not have a single point of failure, but rather several levels of risk management and return enhancement.

The strategies were designed to appeal to investors looking for equity-based exposure. Because these strategies may exhibit higher levels of volatility at times, they may be best utilized as a component within a diversified portfolio. While each investment universe varies, the underlying methodology is the same for all strategies. By design, the Power Momentum Strategies will maintain a concentrated portfolio of five equally weighted positions. The three strategies are:

1. **Power Momentum-Blue Chip (PM-Blue Chip)** – Chooses from a universe of over 100 large-cap, household names.
2. **Power Momentum-NDX 100 (PM-NDX 100)** – Chooses from the current NASDAQ 100 index universe, which is updated as the underlying index updates.
3. **Power Momentum-Rising Dividend (PM-Rising Dividend)** – Chooses from 60+ stocks which have increased their dividend payout for at least 25 consecutive years.

Q3 employs a comprehensive research and development process when creating a new strategy. Not only is the concept rigorously tested over a variety of market environments, it must also demonstrate the ability to complement our existing strategies. Each offering within the Power Momentum suite was extensively researched and the results methodically analyzed. By taking a systematic, objective approach, we remove personal bias, opinion, and ego from the investing process and allow our models to seek the strongest opportunities. Continuous, real-time, monitoring is yet another element which is designed to improve the strategies as we move forward.

“Under the tenets of behavioral finance, markets are not always efficient. It is human behavior that moves markets and not the universal information shared by market participants.”

- Gary Antonacci

Individual stock ownership coupled with active management in one investment portfolio.

Power Momentum Strategies

Successful investment strategies often have several things in common: rules-based algorithms, historical backtested results and ongoing analysis, among others. The Power Momentum Strategies encapsulate all these features and more.

The Power Momentum Strategies were extensively researched and developed independently, though they have common threads among them. Each model is a focused, stock-based portfolio holding five issues. A concentrated holding delivers oversized returns, while still maintaining sufficient diversification to buffer downside risks.

Each of the Power Momentum models are reviewed on a weekly basis to determine if trades need to be made. While the strategies are active, individual holdings may be held for extended periods of time. Alternatively, depending on market conditions, the entire portfolio could turnover within the span of a few weeks.

The Power Momentum Strategies were designed to deliver market-beating returns with a comparable level of risk. The strategies could be appropriate for a core holding within a portfolio, or as “satellite” holdings complementing more traditional equity and bond holdings.

Background

The managed model investment landscape has undergone a few transitions over the last several years. As ETFs have become more prevalent due, in part, to fewer trading restrictions, investment managers have begun to construct models focusing on ETFs as opposed to mutual funds. Taking this to the next logical step is the implementation of stock-based strategies.

Trading individual equities presents additional opportunities that neither ETFs nor mutual funds can offer:

- Increased “name” recognition. Apple, Home Depot, Coca-Cola, Microsoft - all household names constantly in the news and top of mind
- No trading restrictions, and less liquidity concerns
- No underlying expenses, zero-commission trading of stocks on nearly every major platform
- Clients may feel more “attached” and “involved” in the ownership of individual stocks, as opposed to a mutual fund

Strategy Universes

Each universe within the Power Momentum series was deliberately chosen based on unique characteristics of the underlying stocks. The following table summarizes the salient attributes of each:

	Blue Chip	NDX 100	Rising Dividend
# of Stocks	100+	100+	60+
Market Cap	Large Cap	Large Cap	Large Cap
Style	Blend	Growth	Value
Relevant Index	S&P 500	NASDAQ 100	S&P 500 Value

The **PM-Blue Chip** strategy was created to deliver investors exposure to over 100 household names – stocks which have stood the test of time and are often part of our everyday life. Each of the major sectors is represented by ten stocks, with the exception of Real Estate with five. Nearly all of the stocks included would be considered large-caps, with a fairly equitable mixture of growth and value stocks – given that all economic sectors are represented.

If a merger, bankruptcy, or other financial reorganization occurs, the universe will be altered to reflect any changes in trading availability. It is not expected that these types of events will occur very frequently given the nature of the stocks included in the universe.

Blue Chip – Strategy Universe

Ticker	Company	Economic Sector	Ticker	Company	Economic Sector
GOLD	Barrick Gold	Basic Materials	BRK-B	Berkshire Hathaway	Financials
DOW	Dow	Basic Materials	SCHW	Charles Schwab	Financials
DD	DuPont	Basic Materials	GS	Goldman Sachs Group	Financials
ECL	Ecolab	Basic Materials	JPM	JPMorgan Chase	Financials
FCX	Freeport-McMoRan	Basic Materials	MCO	Moody's	Financials
LIN	Linde	Basic Materials	PGR	Progressive	Financials
NEM	Newmont	Basic Materials	TRV	Travelers	Financials
RIO	Rio Tinto	Basic Materials	WFC	Wells Fargo	Financials
SHW	Sherwin-Williams	Basic Materials	ABT	Abbott Laboratories	Health Care
X	US Steel	Basic Materials	AMGN	Amgen	Health Care
T	AT&T	Communication Services	BMJ	Bristol-Myers Squibb	Health Care
CHTR	Charter Comm.	Communication Services	CI	Cigna	Health Care
CMCSA	Comcast	Communication Services	LLY	Eli Lilly	Health Care
DISH	DISH Network	Communication Services	GILD	Gilead Sciences	Health Care
FB	Facebook	Communication Services	JNJ	Johnson & Johnson	Health Care
GOOG	Google	Communication Services	MRK	Merck	Health Care
NFLX	Netflix	Communication Services	PFE	Pfizer	Health Care
TMUS	T-Mobile	Communication Services	UNH	UnitedHealth Group	Health Care
VZ	Verizon Comm.	Communication Services	MMM	3M	Industrials
VIAC	ViacomCBS	Communication Services	BA	Boeing	Industrials
AMZN	Amazon	Consumer Discretionary	CAT	Caterpillar	Industrials
DG	Dollar General	Consumer Discretionary	GE	GE	Industrials
HD	Home Depot	Consumer Discretionary	GM	General Motors	Industrials
MCD	McDonalds	Consumer Discretionary	HON	Honeywell	Industrials
NKE	Nike	Consumer Discretionary	LMT	Lockheed Martin	Industrials
SBUX	Starbucks	Consumer Discretionary	RTX	Raytheon	Industrials
TGT	Target	Consumer Discretionary	UNP	Union Pacific	Industrials
TSLA	Tesla	Consumer Discretionary	UPS	United Parcel Service	Industrials
TJX	TJX Companies	Consumer Discretionary	AMT	American Tower	Real Estate
DIS	Walt Disney Company	Consumer Discretionary	CCI	Crown Castle	Real Estate
MO	Altria Group	Consumer Staples	EQIX	Equinix	Real Estate
CLX	Clorox	Consumer Staples	PSA	Public Storage	Real Estate
KO	Coca-Cola	Consumer Staples	SPG	Simon Property Group	Real Estate
CL	Colgate-Palmolive	Consumer Staples	ADBE	Adobe	Technology
COST	Costco Wholesale	Consumer Staples	AAPL	Apple	Technology
KMB	Kimberly-Clark	Consumer Staples	CSCO	Cisco	Technology
PM	Philip Morris	Consumer Staples	EBAY	Ebay	Technology
PG	Procter & Gamble	Consumer Staples	IBM	IBM	Technology
WBA	Walgreens	Consumer Staples	INTC	Intel	Technology
WMT	Walmart	Consumer Staples	MC	Mastercard	Technology
CVX	Chevron	Energy	MSFT	Microsoft	Technology
XOM	Exxon	Energy	ORCL	Oracle	Technology
FSLR	First Solar	Energy	QCOM	Qualcomm	Technology
HAL	Halliburton	Energy	AEP	American Electric Power	Utilities
HES	Hess	Energy	AWK	American Water Works	Utilities
MRO	Marathon Oil	Energy	ED	Consolidated Edison	Utilities
NEP	NextEra Partners	Energy	D	Dominion Energy	Utilities
PSX	Philips 66	Energy	DUK	Duke Energy	Utilities
SLB	Schlumberger	Energy	WTRG	Essential Utilities	Utilities
WMB	Williams Companies	Energy	EXC	Exelon	Utilities
AXP	American Express	Financials	FE	FirstEnergy	Utilities
BAC	Bank of America	Financials	NEE	NextEra Energy	Utilities
			SO	Southern Company	Utilities

The **PM-NDX 100** strategy draws from the NASDAQ-100 Index universe. The index is comprised of the largest non-financial companies listed on the Nasdaq stock exchange. The index is heavily represented by the technology sector, though eight other sectors are included. If a merger, bankruptcy or any change in the underlying index occurs, the universe will change accordingly.

NDX 100 – Strategy Universe

Ticker	Company	Economic Sector	Ticker	Company	Economic Sector
ATVI	Activision Blizzard	Communication Services	FAST	Fastenal Company	Industrials
CHTR	Charter Comm	Communication Services	PCAR	PACCAR	Industrials
CMCSA	Comcast Corporation	Communication Services	PAYX	Paychex	Industrials
FOX	Fox Corporation	Communication Services	VRSK	Verisk Analytics	Industrials
LBTYA	Liberty Global	Communication Services	ADBE	Adobe	Technology
NTES	NetEase	Communication Services	AMD	Advanced Micro Devices	Technology
NFLX	Netflix	Communication Services	ALGN	Align Technology	Technology
SIRI	Sirius XM Radio	Communication Services	GOOG	Alphabet (Google)	Technology
TMUS	T-Mobile	Communication Services	ADI	Analog Devices	Technology
AMZN	Amazon	Consumer Discretionary	ANSS	ANSYS	Technology
BKNG	Booking Holdings	Consumer Discretionary	AAPL	Apple	Technology
EXPE	Expedia Group	Consumer Discretionary	AMAT	Applied Materials	Technology
LULU	Lululemon Athletica	Consumer Discretionary	ASML	ASML Holding	Technology
MAR	Marriott International	Consumer Discretionary	ADSK	Autodesk	Technology
MELI	MercadoLibre	Consumer Discretionary	BIDU	Baidu	Technology
MNST	Monster Beverage	Consumer Discretionary	AVGO	Broadcom	Technology
ORLY	O'Reilly Automotive	Consumer Discretionary	CDNS	Cadence Design Systems	Technology
PDD	Pinduoduo	Consumer Discretionary	CDW	CDW	Technology
ROST	Ross Stores	Consumer Discretionary	CHKP	Check Point Software Tech	Technology
SBUX	Starbucks Corporation	Consumer Discretionary	CSCO	Cisco Systems	Technology
TSLA	Tesla	Consumer Discretionary	CTXS	Citrix Systems	Technology
TCOM	Trip.com Group	Consumer Discretionary	CTSH	Cognizant Tech Solutions	Technology
ULTA	Ulta Beauty	Consumer Discretionary	DOCU	DocuSign	Technology
COST	Costco Wholesale	Consumer Staples	EBAY	eBay	Technology
DLTR	Dollar Tree	Consumer Staples	EA	Electronic Arts	Technology
KHC	Kraft Heinz	Consumer Staples	FB	Facebook	Technology
MDLZ	Mondelēz Intern	Consumer Staples	FISV	Fiserv, Inc.	Technology
PEP	PepsiCo	Consumer Staples	INTC	Intel	Technology
WBA	Walgreens	Consumer Staples	INTU	Intuit	Technology
XEL	Xcel Energy	Energy	JD	JD.com	Technology
PYPL	PayPal	Financials	KLAC	KLA Corporation	Technology
ALXN	Alexion Pharma	Health Care	LRCX	Lam Research	Technology
AMGN	Amgen	Health Care	MXIM	Maxim Integrated Products	Technology
BIIB	Biogen	Health Care	MCHP	Microchip Technology	Technology
BMRN	BioMarin Pharma	Health Care	MU	Micron Technology	Technology
CERN	Cerner	Health Care	MSFT	Microsoft	Technology
DXCM	DexCom	Health Care	NVDA	Nvidia	Technology
GILD	Gilead Sciences	Health Care	NXPI	NXP Semiconductors	Technology
IDXX	IDEXX Laboratories	Health Care	QCOM	Qualcomm	Technology
ILMN	Illumina	Health Care	SWKS	Skyworks Solutions	Technology
INCY	Incyte	Health Care	SPLK	Splunk	Technology
ISRG	Intuitive Surgical	Health Care	SNPS	Synopsys	Technology
MRNA	Moderna	Health Care	TTWO	Take-Two Interactive	Technology
REGN	Regeneron Pharma	Health Care	TXN	Texas Instruments	Technology
SGEN	Seattle Genetics	Health Care	VRSN	Verisign	Technology
VRTX	Vertex Pharma	Health Care	WDC	Western Digital	Technology
ADP	Automatic Data Proc	Industrials	WDAY	Workday	Technology
CTAS	Cintas Corporation	Industrials	XLNX	Xilinx	Technology
CPRT	Copart	Industrials	ZM	Zoom Video Comm	Technology
CSX	CSX Corporation	Industrials	EXC	Exelon Corporation	Utilities

The **PM-Rising Dividend** universe consists of those large-cap stocks which have increased their dividend payouts for at least the last 25 years. The strategy uses the S&P 500 Dividend Aristocrats Index to determine the stocks considered for investment.

Given the nature of the strategy, it should come as no surprise that the majority of the stocks would be considered “value” based. Consumer Staples and Industrials are the most represented sectors. Technology is the least represented, with just one stock.

As the underlying S&P Index changes, the PM-Rising Dividend will as well. Only a handful of stocks have fallen out of the index over the last ten years, with 1-2 added each year. If a merger, bankruptcy, or other financial reorganization occurs the universe will be altered to reflect any changes.

Rising Dividend – Strategy Universe

Ticker	Company	Economic Sector	Ticker	Company	Economic Sector
T	AT&T	Communication Services	CAH	Cardinal Health Inc.	Health Care
GPC	Genuine Parts Company	Consumer Discretionary	JNJ	Johnson & Johnson	Health Care
LEG	Leggett & Platt	Consumer Discretionary	MDT	Medtronic	Health Care
LOW	Lowe's Companies, Inc.	Consumer Discretionary	MMM	3M Company	Industrials
MCD	McDonald's	Consumer Discretionary	AOS	A.O. Smith	Industrials
TGT	Target Corporation	Consumer Discretionary	CARR	Carrier Global	Industrials
VFC	VF Corporation	Consumer Discretionary	CAT	Caterpillar Inc.	Industrials
ADM	Archer Daniels Midland	Consumer Staples	CTAS	Cintas Corp	Industrials
BF-B	Brown-Forman (Class B)	Consumer Staples	DOV	Dover Corp	Industrials
KO	Coca-Cola Co	Consumer Staples	EMR	Emerson Electric	Industrials
CL	Colgate-Palmolive	Consumer Staples	EXPD	Expeditors Intl. of Washington	Industrials
HRL	Hormel Foods Corp	Consumer Staples	GD	General Dynamics	Industrials
KMB	Kimberly-Clark	Consumer Staples	ITW	Illinois Tool Works	Industrials
MKC	McCormick & Company	Consumer Staples	OTIS	Otis Worldwide	Industrials
PEP	PepsiCo	Consumer Staples	PNR	Pentair	Industrials
PG	Procter & Gamble	Consumer Staples	RTX	Raytheon Technologies	Industrials
SY	Sysco	Consumer Staples	ROP	Roper Technologies	Industrials
CLX	The Clorox Company	Consumer Staples	SWK	Stanley Black & Decker Inc.	Industrials
WBA	Walgreens Boots Alliance	Consumer Staples	GWW	W. W. Grainger	Industrials
WMT	Walmart	Consumer Staples	ADP	Automatic Data Processing	Information Tech
CVX	Chevron Corp.	Energy	APD	Air Products & Chemicals Inc	Materials
XOM	Exxon Mobil Corp	Energy	ALB	Albemarle Corporation	Materials
AFL	Aflac	Financials	AMCR	Amcor plc	Materials
CB	Chubb Limited	Financials	ECL	Ecolab Inc	Materials
CINF	Cincinnati Financial Corp	Financials	LIN	Linde plc	Materials
BEN	Franklin Resources	Financials	NUE	Nucor	Materials
PBCT	People's United Financial	Financials	PPG	PPG Industries	Materials
SPGI	S&P Global	Financials	SHW	Sherwin-Williams	Materials
TROW	T. Rowe Price	Financials	ESS	Essex Property Trust	Real Estate
ABT	Abbott Laboratories	Health Care	FRT	Federal Realty Invest. Trust	Real Estate
ABBV	AbbVie Inc.	Health Care	O	Realty Income	Real Estate
BDX	Becton Dickinson	Health Care	ATO	Atmos Energy	Utilities
			ED	Consolidated Edison Inc	Utilities

"Confine your studies of movements to the prominent stocks of the day. If you cannot make money out of the leading active issues, you are not going to make money..."

- Jesse Livermore

The Nasdaq 100 index has outperformed the S&P 500 11 out of 13 years from 2008 through 2020

Technical Trading Methods

The Power Momentum Strategies each incorporate multiple, rules-based algorithms which generate the trading signals – free from human emotion and second-guessing. Each step of the analytical process has been extensively researched by Q3 over many different market environments, from bull to bear and choppy to trending.

The trading rules in use for the strategies, in some cases, have been utilized for many years in prior models managed by Q3. Since they have demonstrated efficacy across many varied investment options, it gives us increased confidence of their ability to continue to perform using individual stock issues.

I. Universe Selection – Starting on the Right Foot

While some Power Momentum Strategies are defined by their underlying investment universe index (NDX 100 and Rising Dividend), the Blue Chip strategy universe was created with subjectivity. Each universe was created with the idea that the selection of issues was the first step in a systematic trading strategy. Further, it was anticipated that the underlying universes, in themselves, would add value.

The table below summarizes a passive, “buy-and-hold” approach applied to each stock universe and compares it to the S&P 500.

	S&P 500	NDX 100	Blue Chip	Rising Dividend
Return	6.7%	9.0%	9.2%	8.9%
Risk (SD)	15.0%	22.1%	16.8%	14.0%
Sharpe Ratio	0.45	0.41	0.55	0.63
Max Loss	-51.0%	-67.8%	-50.8%	-40.0%
Beta	1.00	1.29	1.06	0.85
Correlation	1.00	0.87	0.95	0.91
Alpha	0.0%	0.9%	2.1%	2.8%

Date range: 1.1.2001-9.30.2020

In all three universes a positive alpha is generated. Simply put, a higher level of return is achieved for the level of risk taken when compared to the S&P 500. The Rising Dividend universe, as is expected, has less risk than the S&P 500 when measured by all risk metrics. Perhaps the most important risk gauge, though, is beta. A beta less than 1.0 indicates an investment with less market risk than the underlying index. It can also indicate an investment that is not highly correlated to that index.

It is this second attribute that is perhaps even more important than the first. This is because a portfolio with lower correlation can be combined with riskier portfolios which may be more closely tied to the market. The combination of the two, however, may result in a portfolio with higher overall return and lower risk.

II. Strategy Holdings – Concentrated Portfolios May Lead to Optimal Performance

The decision to create focused portfolios of just five stocks, and not more diversified offerings, was one that was borne out of investment research and analysis. While there is always a tradeoff between lowering risk (holding more positions) and increasing returns (holding fewer), the Power Momentum strategies seek to find a balance resulting in optimal performance.

“We don’t have to be smarter than the rest. We have to be more disciplined than the rest.”

- Warren Buffett

The table below illustrates the differences in performance when holding various number of stocks. When holding 40 it becomes clear that the results are converging in on the underlying index – in this example, the NASDAQ 100. Less value is added when holding too many positions. At the other end, the risk becomes untenable. Holding just a single stock results in a maximum drawdown of nearly 90%, which would be a difficult proposition for almost every investor. Additionally, even if an investor stuck it out, the potential upside needed to recover from such losses would take many years.

	Number of Stocks Held					NASDAQ 100
	1	3	5	10	40	
Return	13.4%	14.8%	17.6%	15.2%	11.4%	9.0%
Risk (SD)	29.7%	27.1%	23.9%	22.4%	22.2%	22.1%
Sharpe Ratio	0.45	0.55	0.73	0.68	0.51	0.41
Max Loss	-89.6%	-68.1%	-54.9%	-53.1%	-46.9%	-67.8%

Trend following trading methods have been used for over 200 years. David Ricardo, who traded stocks in London in the 1790’s, accumulated a large fortune speculating on trending stocks. He is famous for saying “cut short your losses, let your profits run on.”

III. Filtering for Upward Movement – “The Trend is Your Friend”

Much has been written in the academic literature about the persistency of returns in equity markets. Basically, the idea distills down to: **buy the winners, and avoid the losers.** While this is, of course, easier said than done, there are systematic approaches which have shown to be effective across a wide range of investment classes.

A relatively simple approach which has been used for decades is to define a trend based on where a security is trading versus its moving averages. Common length moving averages are 10, 20, 50, 100 and 200 days, each measuring a slightly different period and, as such, will generate different signals at different times.

“Multiple period” moving averages help ensure the identification of a trend as they require confirmation over more than one time period. The Power Momentum strategies measure the 50 and 200-day moving averages of each stock in the universe before considering it for a trade. In order to be eligible, a stock’s 50-day moving average must be above its 200-day moving average.



The chart above (Target – TGT) demonstrates how the moving averages indicate those times when the stock is “eligible” and when it is not. Remember, this is just a “pre-filter,” since any stock that does not pass this test will not be considered for purchase. This requirement helps to ensure the strategy is buying into a trend – increasing the probability of a profitable trade.

"In order of importance to me are: 1) the long-term trend, 2) the current chart pattern, and 3) picking a good spot to buy or sell."

- Ed Seykota

IV. Screening for Overbought Conditions – Avoiding Parabolic Stocks

Having just laid out the case for buying high, and selling higher, there are some caveats to a pure momentum investing approach. For example, there is always the possibility that a purchase is being made at an extreme "overbought" point.

A common way to alleviate this potential problem is through the use of technical indicators that measure not only the strength of a move, but also takes into account how quickly it happened. Often when a stock rockets 20% or more within a matter of days, it then "consolidates" and falls back a bit.

The Power Momentum Strategies incorporate an approach that seeks to minimize these types of situations. Indicators that seek to measure this phenomenon go by many different names but are generally referred to as "overbought indicators" - or more technically - "%R," "RSI" or "Stochastics." Like the moving average requirement, the overbought indicator serves as a "filter." Stocks must "pass" this test before being considered for purchase. In addition, the filter enables us to identify existing positions to be sold, with the understanding that they may be repurchased at a later time, once the issue is no longer identified as "overbought."

In the chart below, we see the tremendous moves that Apple made throughout the spring and summer of 2020. It should not be surprising that momentum indicators would be triggered multiple times. However, there were instances where the stock got ahead and, in many cases, turned lower for a period.

A stock identified as overbought will be sold as long as the minimum holding period has been met, however, it can be repurchased as soon as the following week.

In July and early September, for example, Apple reached an "overbought" level. This can be visually discerned by looking at the %R indicator at the top of the chart. When the green line crosses the upper threshold the warning flags go up and investors might take a step back and perhaps reevaluate the relative attractiveness of the trade.

Note that in this example the overbought condition lasted for just a few days. While this is not always the case, as the overbought state could last weeks or more, it is important to note that the if the underlying momentum is still strong, trades will continue to be signaled.



"If I have positions going against me, I get right out; if they are going for me, I keep them... Risk control is the most important thing in trading....you can always get back in."

- Paul Tudor Jones

Momentum has been identified as a leading factor in stock returns, which hedge funds have long taken advantage of.

V. Ranking on Strength – Let the Winners Ride

The final, and perhaps most critical, step in the algorithmic process is a ranking of each stock which has met all the previous criteria.

It is important to note at this point that if fewer than five stocks have met the above requirements, the strategy will fill any empty positions with a holding in a cash equivalent position. Generally, this will be an ultra-short-term bond ETF.

While this is a rare occurrence, all three strategies would have had such defensive positions at some point in early 2009. Furthermore, the PM-NDX 100 strategy would have had three of five positions invested defensively in the late stages of the dot-com crash in 2002.

When these positions are picked up, they are not subjected to a holding period, so it may well be that a “defensive” position is held for just one week, depending on the market’s movements.

The ranking process is based on a momentum measure which analyzes two different lookback periods. Research has shown that price persistency, the ability of stocks to continue to move in the same direction, is optimal at the short-term, and intermediate term.

Each stock position is subject to a minimum holding period. Testing confirmed that performance is enhanced when requiring such a constraint. While it may seem counterintuitive, a holding period can prevent “whipsaw” trades when an issue gets choppy. Tests where we did not require a holding period, or had shorter such periods, resulted in increased trades, higher volatility and lower risk-adjusted returns.

Even a very basic approach using momentum has shown to be effective. The use of multiple lookback periods, though, increases our chances of properly identifying the true measure of strength within a stock. It has been demonstrated that a shorter-term momentum period (30-70 trading days) combined with an intermediate term momentum period (120 – 200 trading days) can add value when compared to a buy-and-hold approach.

Our trading software ranks each stock over both momentum periods, and a combined score is created by averaging the two rankings. This final measure is then used to determine the holdings. In the example below, only four stocks are being ranked and the top two will be selected for investment. The total return for each security is calculated over the respective time period, and that number is then ranked from 1 to “x” (“x” being the total number of stocks available for ranking). The ranks are then added to come up with an overall score. Finally, the top two in this example - IBM and GM - would be purchased.

Symbol	Short-Term		Intermediate Term		Total Rank
	Momentum	Rank	Momentum	Rank	
AAPL	0.6%	3	6.7%	4	7
GM	5.4%	1	11.2%	3	4
IBM	3.1%	2	25.9%	1	3
WMT	-3.7%	4	17.4%	2	6

Backtested Results

"Buying a stock without knowing when or why you should sell it is like buying a car with no brakes, or being in a boat with no life preservers, or taking flying lessons that teach you how to take off but not how to land."

– William J. O'Neil

All of the Power Momentum Strategies have been thoroughly researched and backtested. The NASDAQ 100 strategy, for example, was meticulously created by obtaining the historical components of the NASDAQ 100 index back to 2001. Every stock that was added or removed from the index was accounted for, and only represented for that time it was part of the index.

After applying all of the trading algorithms that make up the Power Momentum Strategies, the results are compelling. All three models show significant value-added as evidenced by the positive alphas. A positive alpha indicates a return over and above that which would have been expected given the level of risk incurred.

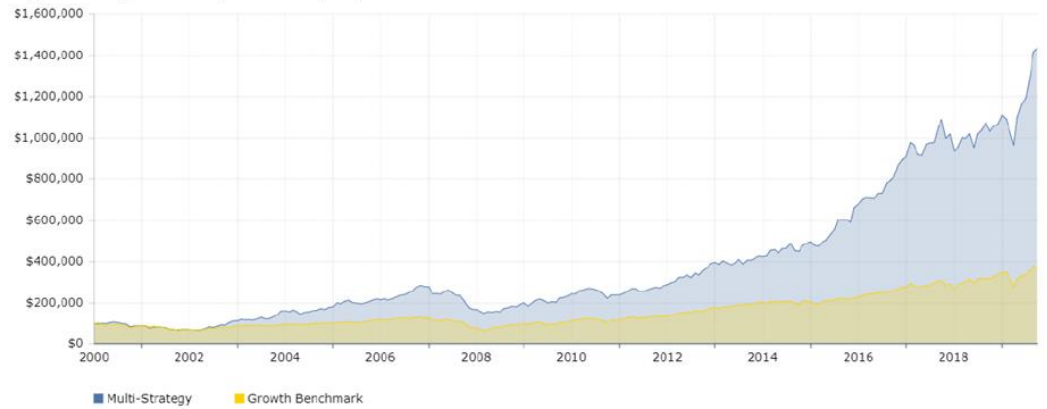
	Equity Indexes		Power Momentum Strategies			
	S&P 500	NASDAQ 100	NDX 100	Blue Chip	Rising Div.	Combo
Return	6.7%	9.0%	17.6%	13.4%	10.0%	14.4%
Risk (SD)	15.0%	22.1%	23.9%	22.1%	14.8%	16.9%
Sharpe Ratio	0.45	0.41	0.73	0.61	0.67	0.85
Max Loss	-51.0%	-67.8%	-54.9%	-63.5%	-37.5%	-47.5%
Beta	1.00	1.29	0.94	0.93	0.69	0.85
Correlation	1.00	0.87	0.59	0.63	0.70	0.75
Alpha	0.0%	0.9%	11.1%	7.0%	4.7%	8.3%

Date range: 1.1.2001 through 9.30.2020

	Equity Indexes		Power Momentum Strategies			
	S&P 500	NASDAQ 100	NDX 100	Blue Chip	Rising Div.	Combo
2001	-12.0%	-32.7%	-20.1%	-11.5%	-3.7%	-11.7%
2002	-22.2%	-37.6%	-29.2%	-25.3%	-14.6%	-22.9%
2003	28.5%	49.1%	68.5%	114.6%	18.8%	66.8%
2004	10.7%	10.4%	66.1%	40.6%	20.3%	42.1%
2005	4.8%	1.5%	7.6%	26.7%	2.4%	12.1%
2006	15.6%	6.8%	-0.6%	13.4%	45.3%	19.6%
2007	5.4%	18.7%	55.0%	43.2%	-5.6%	30.5%
2008	-37.0%	-41.9%	-42.4%	-53.4%	-19.8%	-38.3%
2009	26.5%	53.5%	41.2%	14.1%	3.0%	19.3%
2010	14.9%	19.2%	28.7%	19.5%	14.0%	20.7%
2011	2.0%	2.7%	-18.3%	-1.6%	15.6%	-1.3%
2012	15.8%	16.8%	7.8%	29.5%	24.4%	20.6%
2013	32.2%	35.0%	59.5%	32.1%	22.4%	37.8%
2014	13.5%	17.9%	9.2%	-5.5%	18.2%	7.4%
2015	1.2%	8.4%	30.8%	18.8%	2.0%	17.0%
2016	11.8%	5.9%	52.9%	38.9%	14.8%	35.3%
2017	21.7%	31.5%	29.6%	37.1%	33.9%	33.5%
2018	-4.5%	-1.0%	14.1%	-5.5%	-0.5%	2.7%
2019	30.8%	37.9%	20.1%	14.8%	19.8%	18.2%
2020*	5.5%	30.7%	63.1%	17.7%	8.8%	29.7%

Date range: 1.1.2001 through 9.30.2020

Hypothetical (Backtested) Growth of \$100,000



While each of the three Power Momentum Strategies, on their own, demonstrate encouraging results, additional value is added when combining the models. In the tables above the “Combo” column reflects an equal mix of all three strategies.

From a risk-adjusted standpoint, as evidenced by the Sharpe Ratio, the combination of strategies has the best results. This should not come as a surprise since the three models were designed to complement each other. A portfolio reflecting this mixture would naturally be more diversified each individual strategy, and would maintain the potential to deliver smoother returns, since the underlying models draw from different stock universes.

Disclosures

All data is considered hypothetical. Hypothetical performance results are derived from the benefit of hindsight and therefore have certain inherent limitations. Unlike an actual performance record, simulated trades do not represent actual trading. Also, since the trades have not actually been executed, the results may have over or under compensated for the impact, if any, of certain market factors such as lack of liquidity. Strategies were not necessarily available to invest in for the periods presented. Hypothetical testing does not involve financial risk and therefore may not necessarily depict an investor's ability to tolerate such risks.

These results do NOT necessarily represent actual trading or client experience, and do not necessarily reflect the impact of decision making or economic or market factors experienced during the actual management of funds. The actual return may be lower or higher than the performance quoted. Annual returns are compounded monthly. Performance between selected dates may be misleading and may not be able to be achieved in the future based upon changing market conditions. Benchmark data is obtained through Morningstar and reflect the reinvestment of dividends. Results do not predict the performance of the investment strategy.

Performance for taxable accounts would be negatively affected had taxes been deducted. As individual tax rates vary, taxes are not considered in the results shown. Advisory fees are deducted quarterly in arrears in each respective quarter ending month. Stock-based strategies deduct an additional 0.5% annually to account for commissions and slippage. Actual fees are deducted approximately 2 weeks after each quarter ending month. Historical data used in testing is provided by Commodity Systems, Inc. (CSI) and Morningstar, and is believed to be reliable but cannot be guaranteed. Such data may include indexes which are not directly investable and are not reflective of trading costs that an actual fund would incur. The Power Momentum strategies were backtested utilizing individual equities. The Rising Dividend model was tested using the components of the SP 500 Dividend Aristocrats Index as of 7.1.2020. The NDX 100 model was tested by using the actual components of the index during each year of testing. The stocks in the Blue Chip model were chosen based on longevity, sector and name recognition, and established as of 7.1.2020. Four stocks in the current Blue Chip universe (Netflix, Tesla, Google, Facebook) were excluded in the backtesting. Data vendors may adjust their historical data (splits, capital gains, dividends) after the initial publishing of such data. This may result in returns which may differ from those included herein.

Hypothetical results do not represent actual performance. Current and prospective clients should not assume that future performance will be similar. No representation is being made that any client will or is likely to achieve results similar to those presented herein. Q3 reserves the right to make enhancements to the strategy's methodology, which could negatively impact future performance. Review Q3's Form ADV 2 for additional information. This presentation is provided for informational purposes only and there is no assurance objectives will be realized. While research reports may provide general investment information from sources deemed reliable it is in no way a solicitation to buy or sell any security. Past performance is not indicative of future results. There is risk of loss with all of Q3's investment strategies and such strategies may not be suitable for all investors. No graph, chart, formula or other device can, in and of itself, be used to determine which securities to buy or sell, or when to buy or sell such securities, or can assist persons in making those decisions.

About Q3 Asset Management

Established in 2006, Q3 Asset Management is an independent Registered Investment Advisory firm offering a diverse blend of quantitative investment strategies. Our mission is to provide financial advisors and their clientele with an investment approach that maintains the ability to adapt to changing market conditions. We are firm believers that true diversification lies in combining a strategic blend of non-correlated investment programs.

Through the elimination of fear and greed, we employ a non-emotional approach towards investing. Our objective is not necessarily to outperform the market each year, but instead to construct a portfolio that maintains the ability to add value in both positive and negative market environments. We expect longer term performance to maintain a level of non-correlation relative to the broader equity markets.

Q3 Asset Management is located in Birmingham, Michigan. Our investment advisory services are offered through a variety of providers including E*TRADE Advisor Services, TD Ameritrade, and Schwab. Additional information on Q3 Asset Management can be found at www.q3tactical.com.