



Model Portfolio Monthly Update: November 30, 2017

There are limitations inherent in our theoretical model results, particularly with the fact that such results do not represent actual trading and they may not reflect the impact material economic and market factors might have had on our decision making if we were actually managing client money. Please see additional disclaimers and disclosures at the back of this report.

We highlight stocks that demonstrate solid growth at a reasonable price (GARP). Stocks selected for our model portfolio strategies all rank highly for the following metrics, with an emphasis on proxies for cash flow growth and ROIC:

- Relative Value
- Operating Momentum
- Analyst Revision Momentum
- Fundamental Quality

Pages 2-9 contain brief commentary and highlights of a few stocks that seem particularly attractive.

Page 10 contains rebalancing actions for our long-only model portfolio.

Page 11 contains rebalancing actions for our short-only model portfolio.

Target and stop prices, as well as updated return data, to be provided in our daily reports that will follow.

Readers that would like to follow our daily price target changes can follow us on our Seeking Alpha [instablog](#) or on [Tumblr](#). This report is a follow-up to our November 30, 2017 [rebalancing note](#) and [last month's full report](#).

Commentary

Base Model

We are introducing our Base Model portfolio in in this report. The Base Model portfolios are very interesting -- but only inasmuch that they illustrate the general interplay of fundamental dynamics within the overall market. The Core Model and Opportunistic Model portfolios are derived from our Base Models. For November 2017, the theoretical **Base High Quality Model** increased +2.81% (up +2.79% simple cumulative returns), the **Base Low Quality Model** declined -0.58% (-0.55%), and the **Base Dollar Neutral Model** increased +3.28% (up 3.26%).

Core Model

The theoretical **Core Long Model** portfolio finished November 2017 up +5.10% (+5.03% on simple cumulative returns), versus the **S&P 500 Index** up 2.81% (+2.79%), and the **S&P Composite 1500 Index** up +2.88% (+2.85%). Stocks in the theoretical **Core Short Model** portfolio finished down -0.92% (-0.89%) for the assumed inverse short sale gain of +0.92% (+0.89%). The theoretical **Core Long/Short Model** portfolio finished up +6.04% (+5.91%).

For the 11 months through November 30, the **Core Long Model** is up +26.26% (+24.02% on a simple cumulative return basis). In contrast the **S&P 500 Index** is up +18.26% (+16.99%), respectively, over the same period. YTD the **Core Long/Short Model** is up +25.58% (+23.16%), ahead of the [Barclay Long/Short Index](#) preliminary YTD figure of +7.72%.

To emphasize -- this model portfolio, leveraging quantitative strategies that were in vogue shortly after the introduction of Microsoft Excel to Windows in 1987, is generating an alpha of nearly 18 percentage points relative to a popular long/short index composed of real hedge fund returns.

Opportunistic Model

The Opportunistic Model, assumed fully to be invested in stocks with zero initial cash allocation, matched the Core Model returns in November 2017.

Explanation of the Base Model

For the first time with this report we are sharing returns for a base basket of stocks that we use to derive our Core and Opportunistic Model portfolios. We are calling these baskets our Base Model.

While stocks in the Base Model show high (low) enough rankings to make it to be considered “high quality” (“low quality”) only a portion of these seem to have significant return potential, and these are the stocks that make it to the final cut of our Core Model Portfolio. In addition, the Base Model portfolios will never assume long positions in low-quality stocks or short positions in high-quality stocks, nor does it use price targets or portfolio return targets.

The Base Model is composed of a large number of stocks (sometimes more than 100 for each basket). However, we have noticed a very interesting trajectory and divergence of returns between the High Quality Base Model portfolio and the Low Quality Base Model portfolio starting in August 2014. The divergence corresponds to the selloff of junk bonds that summer, as indicated by the [Barclays High Yield Bond ETF \(JNK\)](#).

Explanation of the Core Model

The Core Model portfolio strategy assumes long positions in high-quality stocks and short positions in low-quality stocks, as defined on the first page of this report. This model employs short-term price targets and stop losses for individual stocks. On rare occasions, the model will assume long positions in low-quality stocks and short positions in high-quality stocks. The model was last long low-quality stocks for four trading days in October 2015, and for a total of 24 trading days interspersed between April 2009 and August 2009.

Explanation of the Opportunistic Model

This theoretical model uses the same basket of stocks and stock price targets as the Core model, but additionally assumes a 30% base cash position or 100% base cash position during extreme market volatility, or when certain portfolio target returns or losses are achieved.

Cumulatively since inception, the **Core Model** has significantly outperformed the **Opportunistic Model**. However, the Sharpe Ratio, which is one basic measure of risk/return, is higher for the **Opportunistic Model**. The **Opportunistic Long Model** outperformed the **Core Long Model** in 2010 and 2011, and has underperformed since then. The **Opportunistic Long/Short Model** outperformed the **Core Long/Short Model** in 2009, 2010, 2011, 2015 and has lagged in other years.

Theoretical Long Stock Returns for November 2017

Our favorite idea for November was **Illinois Tool Works Inc. (ITW)**, which appreciated +8.13% for the month. The stock was removed from the model portfolio on November 30, 2017 to make room for an incrementally “better” stock idea. On December 1, the stock declined -2.59% after providing commendably detailed five-year guidance for: Organic revenue growth of 3-5%, 25% operating margin, 20% after-tax return on invested capital, free cash flow at 100+% of net income, an increased dividend payout to 50% of free cash flow by 2020 versus 43% currently, and 8-10% EPS growth. The midpoint of EPS guidance for 2017 and 2018 was below consensus estimates, so the stock decline was probably a misplaced reaction to that.

The best performing stock in the long model during November was **YY Inc. (YY)**, which the model locked in for a 31.43% gain a day after reaching its price target on November 20. The stock closed the month up only 14.16%, so locking in that gain benefitted the model. YY is a fascinating growth company trading at a reasonable price. However, it is not without its risks shared by similar Internet Software and Services companies and those shared by other China-based companies. We consider this a fundamentally attractive but volatile stock. The stock seems to bounce off the 50-day moving average every so often, so cautious investors that believe in the fundamental story may want to use that as an entry point. See our write-up following [YYs 3Q17 report](#).

The worst performing stock in the long model was **MKS Instruments (MKSI)**, which declined -13.21% for November. Back in October the company reported a solid quarter and provided guidance well ahead of consensus. On November 29, the stock of this \$5b Semiconductor Equipment company declined -8.7%, in line with a general sell-off in the Nasdaq (QQQ) and other semiconductor names.

Theoretical Short Sale Stock Returns for November 2017

The best short sale idea for November was **MACOM Technology Solutions Holdings, Inc. (MTSI)**, which was assumed closed a day after reaching its price target on November 15 for a short sale gain of +22.85%. The worst short sale idea was **Mattel Inc. (MAT)**, which surged after a November 10 article in the Wall Street Journal reported that it was rumored to be a [potential takeover candidate of Hasbro \(HAS\)](#). Our position in MAT assumed a -31.30% short sale loss a day after hitting its stop loss on November 13.

Long MU/Short CREE underperformed

In our last report we suggested a pair trade that assumed a long position in MU and a short sale position in CREE. **Cree Inc. (CREE)** held up fairly well during the November 29 tech sell off. The relative strength in the stock price when so many other semiconductor names faltered lends credence to the optimism that Cree’s new CEO expressed on the company’s earnings call in October. The limited stock price reaction indicates that CREE may deserve serious study as a “contrarian” low-quality long idea. The stock returns of a company in the midst of such a transformation from low quality to high quality can do quite well – a strategy that many value investors try to implement. MU declined -4.33% in November while CREE only declined -0.45%.

Presaging Major Sell Side Analyst Actions in the Long Model

In the long model, 12 stocks received 36 stock price revisions, led by **Facebook, Inc. (FB)** with 13 positive price target revisions. Six stocks in the long model received eight rating upgrades, led by **Kohl's (KSS)** and **YY, Inc. (YY)** with two each. In contrast, we are only aware of two long model portfolio stocks receiving negative price target revisions – **Facebook** and **Norfolk Southern Corp. (NSC)**. Four stocks received one ratings downgrade each.

Kohl's Corp. (KSS) was an interesting stock to watch in the long model. On November 8, it reported a slightly EBITDA miss relative to consensus and a year-over-year decline in its EBITDA margin, sending the stock down 8% early in the day. Investors feared that the EBITDA miss could signal deeper than expected discounting heading into the holiday season. However, the CEO seemed to have allayed fears by describing improved traffic trends, and sales turning positive in the back half of October, and that the company was “relatively bullish” on the upcoming quarter. The stock ended up almost 1% for the day. Two analysts subsequently upgraded the stock and raised price targets as well. For the month, KSS was the third-best performing stock with a +14.87% return.

Kronos Worldwide Inc. (KRO), the [titan of titanium dioxide](#), performed especially well in the long model in November. On November 8 the company reported 3Q17 results well ahead of consensus and with LTM EBITDA up more than 6x relative to the year-ago period. This company seems underfollowed by the sell side, but it is benefitting from higher average selling prices of titanium dioxide, as well as higher sales and production volumes offsetting higher raw materials and other production costs for the chemical. A sell side firm raised its price target for KRO back in October to \$24 from \$21, but even at a current price of \$27 we think there is a good chance for ongoing positive price target revisions. The stock reached our price target on November 24 and the position was assumed closed the next trading day at \$28.98 for a gain of +10.15%.

Thor Industries (THO), the largest recreation vehicle maker in North America, [reported an outstanding quarter](#) on November 27, continuing to benefit from the growing consumer trend of seeking experiences rather than actual consumer goods, especially among Generation X and Millennials. THO was added to the model portfolio back on October 5 because of its solid quantitative ranking. Following its strong F1Q18 report, two sell side firms increased its price target. The stock finished the month up +12.72%. While the stock was replaced by a slightly “better” idea for December, due to the fluctuations in market prices and financial reports, we would expect to see it in our long model portfolio again sooner rather than later.

Presaging Major Sell Side Analyst Actions in the Short Sale Model

In the short sale model five stocks received a total of 17 negative price target revisions, led by **Under Armour, Inc. (UAA)** with eight. Five short sale stocks received eight downgrades, again led by UAA this time with three. Contradicting the short sale thesis of our model, five short sale stocks received seven positive price target revisions, and five stocks received one upgrade each.

Interestingly the market's reaction told us the three positive price target revisions for **Puma Biotechnology, Inc. (PBYI)** a day after its November 9 quarterly report were completely irrelevant, and in our opinion the [PBYI's stark cash position](#) explained why. PBYI was our second best short sale idea in November, closing down -20.58% through November 11, one day after reaching its price target.

Colfax Corporation (CFX) was another short sale idea that ignored a ratings upgrade and Buy reiterations of a few sell side analysts after reporting a significant revenue miss for 3Q17 and lower than expected guidance on November 6. The company is in the midst of a transition to divest itself of some businesses and acquire others, already a risky proposition. When a company misses revenue estimates by more than 6% in the middle of a transition, it tends to raise red flags among investors. Colfax deserves to remain at the [bottom of the totem pole](#) for a few quarters because there are so many other alternatives that are more attractive. The stock closed down -11.41% through November 7, one day after hitting our price target.

On November 20 on our blog page and again on November 21 in a published note, we posted a brief analysis of **ZTO Express's (ZTO)** 3Q17 results and its potential prospects. Our review showed that the company was experiencing rapid growth, but even so [ZTO seemed overvalued](#). On November 24, UBS downgraded the stock to Neutral from Buy... but also raised its price target to \$18 from \$17. At least they were half right, in our opinion. The stock closed up \$0.07, up +0.44%, for the month of November.

In contrast, Needham's upgrade of "low-quality" **ViaSat (VSAT)** on November 10 may have hit a positive note with investors because the stock surged shortly thereafter to close up +11.98% through November 14, one day after hitting its stop loss level. We assume the analyst made a compelling case that the pending near-term service launch of its ViaSat-2 satellite directly correlated with the company's [capability to achieve its 2022 consensus EBITDA estimate of \\$1b](#) without adding on significant amounts of debt. I am looking forward to reading that report.

12-Month Buy-and-Hold Returns for the Long Model Starting November 30, 2016 Up +28.85%

In last year's report [28 Stocks for December 2016](#) we presented a 28 stock long model portfolio. Assuming initial equal weights for each stock position last year at the November 30, 2016 close, this portfolio returned 28.85%, well ahead of the 20.39% return for the S&P 500. Over the 12 months, 18 stocks performed better than the S&P 500 and 10 underperformed. In that same report, we highlighted **Facebook, Inc. (FB)** as our favorite long idea. FB was the 6th best performer over the 12 months since November 30, 2016 with a return of 49.62%.

Notes

Except for extremely unusual circumstances, our long model portfolios are composed of high-quality stocks and our short model portfolios are composed of low-quality stocks.

As a simple quantitative model based on fundamental rankings, the portfolio models do not take into account rumors or pending M&A transactions.

Theoretical return data does not assume the impact of costs such as execution fees, margin fees, slippage, the availability of stocks for short selling, or any other kind of cost.

We post returns on a compound and simple cumulative return basis (sum of daily returns) for different types of readers. Simple cumulative returns infer information more intuitively to those interested in analyzing data over long periods of time. Simple cumulative returns are significantly lower than compound returns over time.

Since the March 31, 2009 inception, the theoretical Core Long Model portfolio has returned 200.13% on a simple cumulative return basis and 503.67% on a compound return basis. The S&P 500 Index over that same period returned 130.24% on a simple cumulative return basis and 231.83% on a compound return basis.

In many cases the models are created just prior to the market close each month.

Looking ahead for the balance December 2017

Long portfolio rebalancing actions

As noted in our [abbreviated report](#) issued prior to the close on November 30, 2017, we assumed 19 stocks left the long-only model, 18 were added, and 17 were rebalanced. This 35-stock theoretical long model assumed an initial 2.86% weight for each stock. The long model portfolios are composed of high-quality stocks.

Short sale portfolio rebalancing actions

At the same time, we assumed that 11 stocks left the short-sale model portfolio, eight were added, and were rebalanced. This 18-stock theoretical model portfolio assumed an initial 5.56% weight for each stock.

This short sale model is composed of low-quality stocks, and only tends to work well during periods of high uncertainty or volatility in the market. Low-quality stocks do tend to outperform high-quality stocks during market rallies as the market prices in expectations for a sharp recovery in fundamentals.

Our favorite ideas for December 2017

Our favorite long idea this month is **NVIDIA Corporation (NVDA)**, benefitting from a seemingly overnight new source of demand for its graphics chips in self-driving cars and cryptocurrency mining. This stock was last seen in our long model in April 2016, and now with the recent sell-off of tech stocks, this \$126b market cap growth stock is once again trading at a “reasonable price.” By our measure, free cash flow has quintupled to \$1.36b and ROIC has more than doubled over three years to 32.3%. Further gains are likely, and assuming our estimates for working capital are accurate it could be generating more than \$2b in annualized free cash flow by January 2019. Dividend investors do not have to feel neglected – it pays a quarterly dividend of \$0.14 per share for an annualized yield of 0.30%.

Ranking Data as of November 30, 2017

NVIDIA Corporation
NasdaqGS:NVDA

Information Technology
Semiconductors

Ascendere Ranking		Price 11/30/17	200.71	Cash	6,320	EV/LTM EBITDA	39.8
		Shares	628	Debt	2,014	Price/Book	19.1
		Market Cap	126,046	Other	-		
5 = Best				Enterprise Value	121,740		
Relative Value	Rank						
	3						
Operating Momentum	5	CY1 Consensus EPS Est.	\$ 4.44	CY1 PE	45.2	Total Capital	\$ 8,366
Analyst Revisions Mom	5	CY2 Consensus EPS Est.	\$ 5.13	CY2 PE	39.2	Debt/Capital	-51%
Fundamental Quality	4	Latest Annualized Dividend	\$ 0.56	Div Yield	0.3%	Debt/Enterprise Value	2%

Source: Capital IQ data and estimates, and Ascendere Associates LLC data and estimates.

NasdaqGS:NVDA	Estimate	Estimate	Estimate	Estimate	Last LTM	LTM-1	LTM-2	LTM-3	LTM-4	LTM-5	LTM-6	LTM-7	LTM-8	LTM-9	LTM-10	LTM-11	LTM-12
	LTM+4Q	LTM+3Q	LTM+2Q	LTM+1Q													
NOPLAT	4,146	4,027	3,861	3,645	3,435	3,108	2,704	2,371	1,876	1,480	1,232	1,185	1,192	1,196	1,325	1,339	1,292
Economic Charge	1,148	1,136	1,120	1,097	1,073	1,030	973	921	807	746	727	713	729	685	684	670	686
Economic Profit	2,998	2,891	2,741	2,548	2,362	2,078	1,731	1,450	1,068	734	504	472	463	511	641	669	607
Y/Y change	3.7%	5.5%	7.6%	7.9%	13.7%	20.0%	19.4%	35.7%	45.5%	45.5%	6.8%	2.0%	-9.5%	-20.3%	-4.1%	10.2%	
NOPLAT	4,146	4,027	3,861	3,645	3,435	3,108	2,704	2,371	1,876	1,480	1,232	1,185	1,192	1,196	1,325	1,339	1,292
Operating Capital	12,307	12,184	12,011	11,760	11,506	11,247	10,746	10,050	9,708	9,128	8,762	8,647	8,729	8,612	8,612	8,564	8,501
ROIC (NOPLAT / Operating Capital)	33.7%	33.1%	32.1%	31.0%	29.9%	27.6%	25.2%	23.6%	19.3%	16.2%	14.1%	13.7%	13.7%	13.9%	15.4%	15.6%	15.2%
NOPLAT	4,146	4,027	3,861	3,645	3,435	3,108	2,704	2,371	1,876	1,480	1,232	1,185	1,192	1,196	1,325	1,339	1,292
5 Qtr Average Operating Capital	12,065	11,865	11,631	11,315	10,651	10,176	9,679	9,259	8,995	8,775	8,672	8,633	8,604	8,524	8,428	8,305	8,150
ROIC (NOPLAT / Operating Capital)	34.4%	33.9%	33.2%	32.2%	32.3%	30.5%	27.9%	25.6%	20.9%	16.9%	14.2%	13.7%	13.9%	14.0%	15.7%	16.1%	15.9%

Source: Ascendere Associates assumptions and estimates, and S&P Capital IQ data and consensus estimates.

In the biotechnology sector **Exelixis, Inc. (EXEL)** is a big standout. For the first time in its operating history, free cash flow turned positive in the March 2017 quarter, and ROIC turned positive in the September 2017 quarter. EXEL is benefitting from growth in product sales of [Cabometyx, its renal cell carcinoma drug](#), since its product launch in late April 2016, as well as collaboration revenues for meeting milestones. While we would like to get more familiar with the details of its various drug trials and drug characteristics, it is showing very promising signs and in our opinion deserves a place in an actively managed and diversified portfolio for now. The company appears to have plenty of cash on its balance sheet in light of its positive cash flow from operations and projected expenses for 2018.

Ranking Data as of November 30, 2017

Exelixis, Inc.
NasdaqGS:EXEL

Healthcare
Biotechnology

Ascendere Ranking	Price 11/30/17	27.08	Cash	367	EV/LTM EBITDA	47.8	
	Shares	313	Debt	-	Price/Book	33.5	
	Market Cap	8,474	Other	-			
			Enterprise Value	8,107			
5 = Best	Rank						
Relative Value	4						
Operating Momentum	5	CY1 Consensus EPS Est.	\$ 0.49	CY1 PE	55.7	Total Capital	\$ 239
Analyst Revisions Mom	5	CY2 Consensus EPS Est.	\$ 0.72	CY2 PE	37.6	Debt/Capital	-154%
Fundamental Quality	5	Latest Annualized Dividend	\$ -	Div Yield	0.0%	Debt/Enterprise Value	0%

Source: Capital IQ data and estimates, and Ascendere Associates LLC data and estimates.

NasdaqGS:EXEL	Estimate	Estimate	Estimate	Estimate					
	LTM+4Q	LTM+3Q	LTM +2Q	LTM +1Q	Last LTM	LTM-1	LTM-2	LTM -3	LTM -4
NOPLAT	86	106	95	78	90	(8)	(63)	(128)	(201)
Economic Charge	325	325	321	317	313	290	269	274	279
Economic Profit	(239)	(219)	(226)	(239)	(223)	(299)	(331)	(403)	(479)
Y/Y change	9.1%	-3.1%	-5.5%	7.4%	-25.4%	-9.8%	-17.8%	-16.0%	0.0%
NOPLAT	86	106	95	78	90	(8)	(63)	(128)	(201)
Operating Capital	900	899	889	877	865	804	752	783	823
ROIC (NOPLAT / Operating Capital)	9.6%	11.8%	10.7%	8.9%	10.4%	-1.0%	-8.3%	-16.4%	-24.4%
NOPLAT	86	106	95	78	90	(8)	(63)	(128)	(201)
5 Qtr Average Operating Capital	891	882	859	824	805	800	816	846	879
ROIC (NOPLAT / Operating Capital)	9.7%	12.0%	11.1%	9.4%	11.2%	-1.0%	-7.7%	-15.2%	-22.8%

Source: Ascendere Associates assumptions and estimates, and S&P Capital IQ data and consensus estimates.

TriNet Group, Inc. (TNET), a \$3.2b market cap human resources company, has nearly doubled its operating profit over the last year while its underlying capital has only increased in the low teens, helping drive ROIC to 30.6% from 17.4% last year. According to the CEO on its 3Q17 earnings release, “By pairing our technology platform with our deep industry-specific knowledge, we are developing tailored vertical products that provide our clients with an [exceptional HR experience](#). We remain focused on leveraging our scale for the benefit of our clients, while maximizing our ability to deliver profitable growth for our shareholders.” Consensus estimates for 2018 still appear too low, and we expect there is a good chance the company will continue to post meaningful growth.

Ranking Data as of November 30, 2017

TriNet Group, Inc.
NYSE:TNET

Industrials
Human Resource and Employment Services

Ascendere Ranking	Price 11/30/17	44.76	Cash	264	EV/LTM EBITDA	14.1	
	Shares	71	Debt	432	Price/Book	23.6	
	Market Cap	3,200	Other	-			
			Enterprise Value	3,368			
5 = Best	Rank						
Relative Value	3						
Operating Momentum	5	CY1 Consensus EPS Est.	\$ 2.00	CY1 PE	22.4	Total Capital	\$ 564
Analyst Revisions Mom	5	CY2 Consensus EPS Est.	\$ 2.01	CY2 PE	22.3	Debt/Capital	30%
Fundamental Quality	5	Latest Annualized Dividend	\$ -	Div Yield	0.0%	Debt/Enterprise Value	13%

Source: Capital IQ data and estimates, and Ascendere Associates LLC data and estimates.

NYSE:TNET	Estimate	Estimate	Estimate	Estimate					
	LTM+4Q	LTM+3Q	LTM +2Q	LTM +1Q	Last LTM	LTM-1	LTM-2	LTM -3	LTM -4
NOPLAT	189	211	227	235	239	200	150	123	123
Economic Charge	73	100	127	147	149	137	129	125	111
Economic Profit	116	111	101	88	90	63	22	(2)	12
Y/Y change	4.8%	9.7%	15.2%	-2.8%	43.6%	191.2%	-1492.9%	-112.8%	5.4%
NOPLAT	189	211	227	235	239	200	150	123	123
Operating Capital	409	560	708	823	832	800	770	764	733
ROIC (NOPLAT / Operating Capital)	46.2%	37.6%	32.1%	28.5%	28.7%	25.0%	19.5%	16.1%	16.7%
NOPLAT	189	211	227	235	239	200	150	123	123
5 Qtr Average Operating Capital	625	731	791	806	780	757	737	721	705
ROIC (NOPLAT / Operating Capital)	30.2%	28.8%	28.8%	29.1%	30.6%	26.4%	20.4%	17.1%	17.4%

Source: Ascendere Associates assumptions and estimates, and S&P Capital IQ data and consensus estimates.

YY, Inc. (YY)

The company is benefitting from very strong growth in monthly active users and paying users of its mobile live streaming app, helping generate solid free cash flow growth and ROIC expansion. We think estimates are still too low, and its Operating Capital may grow slower than what our unadjusted model indicates below, setting itself up for ongoing surprises where it matters most – free cash flow growth and ROIC expansion. The stock seems to bounce off the 50-day moving average every so often, so cautious investors may want to use that as an entry point. Based in Shanghai, the stock seems strongly correlated to the fortunes of other Chinese stock as well as to similar stocks in the technology sector. We intend to establish a scenario based price target for this company later this month to better quantify the risk/reward. See our earlier write-up following [YYs 3Q17 report](#).

Ranking Data as of November 30, 2017

YY Inc.
NasdaqGS:YY

Information Technology
Internet Software and Services

Ascendere Ranking	Price 11/30/17	103.19	Cash	1,156	EV/LTM EBITDA	13.4
	Shares	61	Debt	91	Price/Book	4.4
	Market Cap	6,243	Other	-		
5 = Best	Rank		Enterprise Value	5,178		
Relative Value	4					
Operating Momentum	4	CY1 Consensus EPS Est. \$	5.87	CY1 PE	17.6	Total Capital \$
Analyst Revisions Mom	5	CY2 Consensus EPS Est. \$	7.03	CY2 PE	14.7	Debt/Capital
Fundamental Quality	5	Latest Annualized Dividend \$	-	Div Yield	0.0%	Debt/Enterprise Value
						2%

Source: Capital IQ data and estimates, and Ascendere Associates LLC data and estimates.

NasdaqGS:YY	Estimate	Estimate	Estimate	Estimate					
	LTM+4Q	LTM+3Q	LTM +2Q	LTM +1Q	Last LTM	LTM-1	LTM-2	LTM -3	LTM -4
NOPLAT	3,064	2,952	2,811	2,834	2,754	2,580	2,720	2,142	2,063
Economic Charge	976	969	958	950	933	934	745	582	569
Economic Profit	2,088	1,983	1,852	1,885	1,821	1,646	1,975	1,560	1,494
Y/Y change	5.3%	7.0%	-1.7%	3.5%	10.7%	-16.7%	26.6%	4.4%	19.7%
NOPLAT	3,064	2,952	2,811	2,834	2,754	2,580	2,720	2,142	2,063
Operating Capital	10,418	10,346	10,233	10,140	9,958	10,081	9,345	7,137	7,199
ROIC (NOPLAT / Operating Capital)	29.4%	28.5%	27.5%	28.0%	27.7%	25.6%	29.1%	30.0%	28.6%
NOPLAT	3,064	2,952	2,811	2,834	2,754	2,580	2,720	2,142	2,063
5 Qtr Average Operating Capital	10,284	10,169	10,103	9,881	8,744	8,167	7,491	6,961	6,799
ROIC (NOPLAT / Operating Capital)	29.8%	29.0%	27.8%	28.7%	31.5%	31.6%	36.3%	30.8%	30.3%

Source: Ascendere Associates assumptions and estimates, and S&P Capital IQ data and consensus estimates.

Long running advice regarding the use of our model portfolio report

Wayne Gretzky said it best – “skate to where the puck is going to be, not where it has been.” Quantitative screens like the one in this report show where a stock has been and assume the trajectory is fixed. Of course, this is not always the case. The best investors will use this model portfolio as guidance, and not the end all. At the same time, the model does well enough on its own, often beating the indices with ease (though not this past month). With a little effort, we hope that active fundamental portfolio managers will do even better.

Long Model Portfolio -- Rebalancing Actions

11/30/2017 Rebalancing					
Core and Opportunistic Long Portfolio:					
35 stocks in the model portfolio = 2.86% weight per position					
Close Position		Hold/Rebalance		Open Position	
Thor Industries, Inc.	THO	Peabody Energy Corporation	BTU	Apollo Global Management, LLC	APO
TEGNA Inc.	TGNA	Raymond James Financial, Inc.	RJF	SVB Financial Group	SIVB
Kohl's Corporation	KSS	Cullen/Frost Bankers, Inc.	CFR	Exelixis, Inc.	EXEL
Yum! Brands, Inc.	YUM	MasTec, Inc.	MTZ	Graco Inc.	GGG
Evercore Inc.	EVR	Trex Company, Inc.	TREX	TriNet Group, Inc.	TNET
Ameriprise Financial, Inc.	AMP	Allison Transmission Holdings,	ALSN	Advanced Energy Industries, Inc.	AEIS
Federated Investors, Inc.	FII	Micron Technology, Inc.	MU	Applied Materials, Inc.	AMAT
Synovus Financial Corp.	SNV	Vishay Intertechnology, Inc.	VSH	InterDigital, Inc.	IDCC
East West Bancorp, Inc.	EWBC	MKS Instruments, Inc.	MKSI	Lam Research Corporation	LRCX
JPMorgan Chase & Co.	JPM	Teradyne, Inc.	TER	Intuit Inc.	INTU
American Equity Investment Life	AEL	YY Inc.	YY	Seagate Technology plc	STX
Western Alliance Bancorporation	WAL	Facebook, Inc.	FB	NVIDIA Corporation	NVDA
Cathay General Bancorp	CATY	Arista Networks, Inc.	ANET	Maxim Integrated Products, Inc.	MXIM
Armstrong World Industries, Inc.	AWI	Norbord Inc.	OSB	Alphabet Inc.	GOOGL
Illinois Tool Works Inc.	ITW	Kronos Worldwide, Inc.	KRO	CDW Corporation	CDW
Norfolk Southern Corporation	NSC	Trinseo S.A.	TSE	Louisiana-Pacific Corporation	LPX
Cirrus Logic, Inc.	CRUS	Methanex Corporation	MEOH	Vedanta Limited	VEDL
Cabot Corporation	CBT			United States Steel Corporation	X
Huntsman Corporation	HUN				

Source: Ascendere Associates LLC

Short Model Portfolio -- Rebalancing Actions

When the market anticipates an improving economy from low price levels, low-quality stocks will at times out-perform high-quality stocks as the expected improvements in fundamentals are discounted from a relatively more depressed price level.

11/30/2017 Rebalancing					
Core and Opportunistic Short Portfolio:					
18 stocks in the model portfolio = 5.56% weight per position					
Close Position		Hold/Rebalance		Open Short Sale	
Mattel, Inc.	MAT	Under Armour, Inc.	UAA	DISH Network Corporation	DISH
MetLife, Inc.	MET	Portola Pharmaceuticals, Inc.	PTLA	Radian Group Inc.	RDN
Spark Therapeutics, Inc.	ONCE	UniFirst Corporation	UNF	Sage Therapeutics, Inc.	SAGE
Puma Biotechnology, Inc.	PBYI	Colfax Corporation	CFX	Avis Budget Group, Inc.	CAR
Agios Pharmaceuticals, Inc.	AGIO	Flowserve Corporation	FLS	Ritchie Bros. Auctioneers Incorporated	RBA
Penumbra, Inc.	PEN	Cree, Inc.	CREE	Alliance Data Systems Corporation	ADS
Univar Inc.	UNVR	ViaSat, Inc.	VSAT	Tableau Software, Inc.	DATA
ZTO Express (Cayman) Inc.	ZTO	Symantec Corporation	SYMC	DowDuPont Inc.	DWDP
Fluor Corporation	FLR	Summit Materials, Inc.	SUM		
MACOM Technology Solutions H	MTSI	Axalta Coating Systems Ltd.	AXTA		
The Mosaic Company	MOS				

Source: Ascendere Associates LLC

Return Data

Core & Opportunistic Long Model					MTD						
10/31/2017 to 11/30/2017								Target/	Date+1		
Sector	Company	Ticker	10/31/2017	11/30/2017	Performance	Price Target	Stop Target	Stop Date	Sell Price	Return	
Industrials	Armstrong World Industries, Inc.	AWI	51.10	59.95	17.32%		None	11/27/2017	\$ 59.00	15.46%	
Information Technology	Arista Networks, Inc.	ANET	199.89	233.12	16.62%		None	11/17/2017	\$ 241.83	20.98%	
Consumer Discretionary	Kohl's Corp.	KSS	41.76	47.97	14.87%		None	11/29/2017	\$ 47.97	14.87%	
Information Technology	YY Inc.	YY	90.39	103.19	14.16%		None	11/20/2017	\$ 118.80	31.43%	
Consumer Discretionary	Thor Industries Inc.	THO	136.22	153.55	12.72%	\$ 155.74	None				
Consumer Discretionary	Yum! Brands Inc.	YUM	74.45	83.47	12.12%		None	11/7/2017	\$ 81.13	8.97%	
Materials	Methanex Corp.	MEOH	48.75	53.25	9.23%	\$ 54.10	None				
Consumer Discretionary	TEGNA Inc.	TGNA	12.23	13.28	8.59%	\$ 13.73	None				
Financials	Evercore Inc.	EVR	80.10	86.85	8.43%	\$ 89.74	None				
Industrials	Illinois Tool Works Inc.	ITW	156.52	169.25	8.13%		None	11/29/2017	\$ 169.25	8.13%	
Financials	Federated Investors Inc.	FII	31.07	33.56	8.01%	\$ 33.83	None				
Energy	Peabody Energy Corp.	BTU	30.89	33.31	7.83%	\$ 34.29	None				
Industrials	Trex Company, Inc.	TREX	109.45	117.76	7.59%	\$ 137.53	None				
Financials	American Equity Investment Life Holdin	AEL	29.51	31.73	7.52%	\$ 33.04	None				
Materials	Kronos Worldwide Inc.	KRO	26.31	27.91	6.08%		None	11/24/2017	\$ 28.98	10.15%	
Financials	Synovus Financial Corp.	SNV	46.85	49.63	5.93%	\$ 51.06	None				
Industrials	Norfolk Southern Corp.	NSC	131.42	138.63	5.49%	\$ 143.36	None				
Financials	Ameriprise Financial Inc.	AMP	156.54	163.23	4.27%	\$ 168.52	None				
Financials	Western Alliance Bancorporation	WAL	55.80	58.18	4.27%	\$ 62.31	None				
Financials	Raymond James Financial Inc.	RJF	84.78	88.30	4.15%	\$ 91.20	None				
Materials	Trinseo S.A.	TSE	71.00	73.80	3.94%	\$ 77.77	None				
Financials	JPMorgan Chase & Co.	JPM	100.61	104.52	3.89%	\$ 107.89	None				
Financials	Cathay General Bancorp	CATY	41.80	43.39	3.80%	\$ 46.10	None				
Industrials	MasTec, Inc.	MTZ	43.55	44.85	2.99%	\$ 49.96	None				
Financials	East West Bancorp Inc.	EWBC	59.84	61.54	2.84%	\$ 66.39	None				
Materials	Cabot Corporation	CBT	60.96	61.24	0.46%	\$ 66.10	None				
Financials	Cullen/Frost Bankers, Inc.	CFR	98.50	98.41	-0.09%	\$ 108.52	None				
Materials	Huntsman Corp.	HUN	32.02	31.96	-0.19%	\$ 35.83	None				
Information Technology	Cirrus Logic Inc.	CRUS	56.00	55.24	-1.36%	\$ 62.75	None				
Information Technology	Vishay Intertechnology Inc.	VSH	22.25	21.90	-1.57%	\$ 24.59	None				
Information Technology	Facebook, Inc.	FB	180.06	177.18	-1.60%	\$ 196.84	None				
Industrials	Allison Transmission Holdings, Inc.	ALSN	42.49	41.04	-3.41%	\$ 47.40	None				
Materials	Norbord Inc.	OSB	36.05	34.67	-3.83%	\$ 40.92	None				
Information Technology	Micron Technology Inc.	MU	44.31	42.39	-4.33%	\$ 52.21	None				
Information Technology	Teradyne Inc.	TER	42.89	40.47	-5.64%	\$ 47.96	None				
Information Technology	MKS Instruments Inc.	MKSI	108.65	94.30	-13.21%	\$ 124.30	None				

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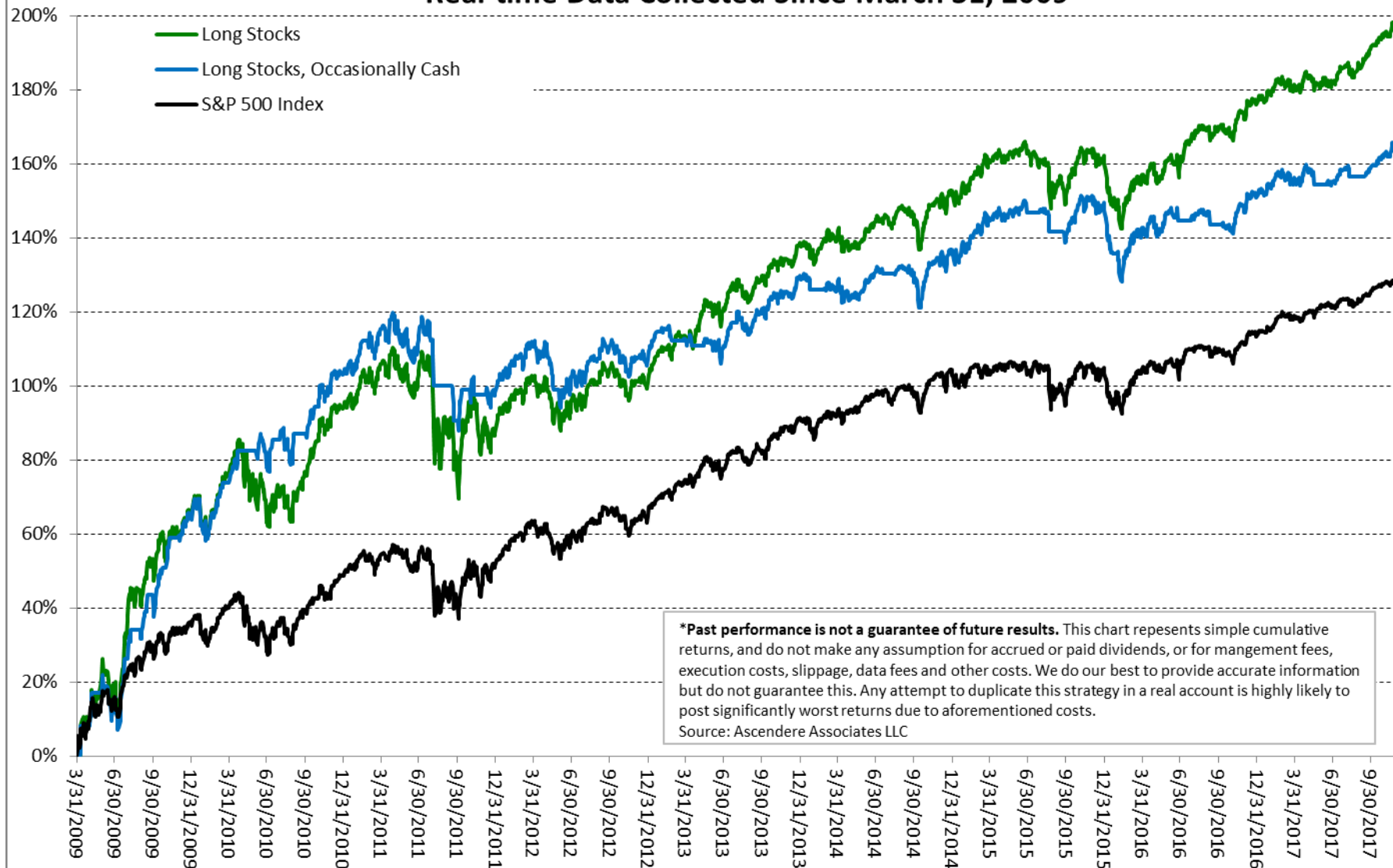
Core & Opportunistic Short Model					MTD						
10/31/2017 to 11/30/2017								Target/	Date+1		
Sector	Company	Ticker	10/31/2017	11/30/2017	Performance	Price Target	Stop Target	Stop Date	Sell Price	Return	
Information Technology	MACOM Technology Solutions Holding	MTSI	40.88	32.59	-20.28%			11/15/2017	\$ 31.54	-22.85%	
Healthcare	Puma Biotechnology, Inc.	PBYI	127.30	105.90	-16.81%			11/10/2017	\$ 101.10	-20.58%	
Information Technology	Symantec Corporation	SYMC	32.50	28.97	-10.86%			11/2/2017	\$ 29.88	-8.06%	
Industrials	Colfax Corporation	CFX	41.71	37.26	-10.67%			11/6/2017	\$ 36.95	-11.41%	
Healthcare	Spark Therapeutics, Inc.	ONCE	80.90	73.23	-9.48%			11/9/2017	\$ 72.25	-10.69%	
Materials	Axalta Coating Systems Ltd.	AXTA	33.25	31.66	-4.78%			11/29/2017	\$ 31.66	-4.78%	
Healthcare	Agios Pharmaceuticals, Inc.	AGIO	64.27	61.55	-4.23%	\$ 58.66	\$ 69.88				
Industrials	Flowserve Corp.	FLS	44.07	42.58	-3.38%			11/2/2017	\$ 39.25	-10.94%	
Materials	Summit Materials, Inc.	SUM	31.40	30.76	-2.04%			11/27/2017	\$ 29.41	-6.34%	
Industrials	Univar Inc.	UNVR	29.75	29.46	-0.97%	\$ 27.73	\$ 31.77				
Information Technology	Cree Inc.	CREE	35.70	35.54	-0.45%	\$ 31.05	\$ 40.35				
Financials	MetLife, Inc.	MET	53.58	53.68	0.19%	\$ 51.10	\$ 56.06				
Industrials	ZTO Express (Cayman) Inc.	ZTO	15.99	16.06	0.44%	\$ 14.44	\$ 17.54				
Healthcare	Portola Pharmaceuticals, Inc.	PTLA	49.41	50.75	2.71%	\$ 43.91	\$ 54.91				
Consumer Discretionary	UniFirst Corp.	UNF	157.50	163.50	3.81%			11/10/2017	\$ 151.00	-4.13%	
Healthcare	Penumbra, Inc.	PEN	100.55	105.30	4.72%			11/8/2017	\$ 115.85	15.22%	
Consumer Discretionary	Under Armour, Inc.	UAA	12.52	13.29	6.15%	\$ 10.39	\$ 14.65				
Materials	The Mosaic Company	MOS	22.34	24.29	8.73%			11/29/2017	\$ 24.29	8.73%	
Industrials	Fluor Corporation	FLR	43.09	48.41	12.35%			11/3/2017	\$ 48.57	12.72%	
Information Technology	ViaSat Inc.	VSAT	65.10	74.24	14.04%			11/13/2017	\$ 72.90	11.98%	
Consumer Discretionary	Mattel Inc.	MAT	14.12	18.25	29.25%			11/13/2017	\$ 18.54	31.30%	

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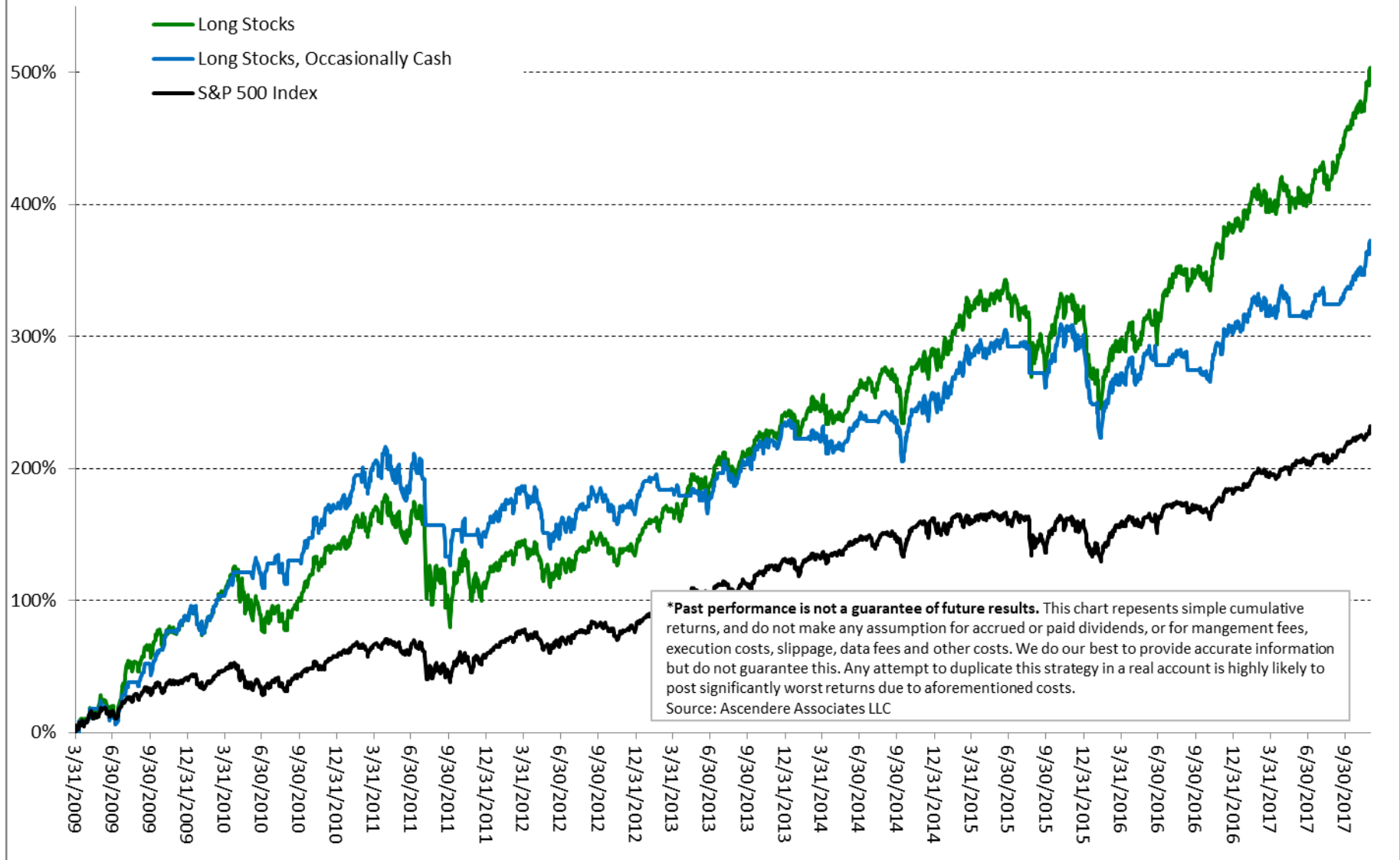
	Theoretical Model Portfolio*	11/30/17	MTD	YTD	Since 03/31/09	Sharpe
	Simple Returns (No Compounding)					
Stock Targets	Core Model					
	Long		5.03%	24.02%	200.1%	1.06
	Short		-0.89%	0.86%	65.4%	0.38
	Core Long/Short		5.91%	23.16%	134.8%	1.02
Stock Targets and Portfolio Targets	Opportunistic Model					
	Long		5.03%	16.75%	167.6%	1.14
	Short		-0.89%	4.99%	-4.2%	(0.04)
	Opportunistic Long/Short		5.91%	11.76%	171.8%	1.34
Stock Targets and Portfolio Targets	Opportunistic Model III					
	Long Stocks		5.03%	16.75%	167.6%	1.14
	Long Inverse ETF ^SH		-1.11%	-11.89%	-91.9%	(0.82)
	Opportunistic Long/Short III		3.92%	4.86%	75.8%	0.69
	S&P 500 Index		2.79%	16.99%	130.23%	0.97

* Return figures are calculated using cumulative simple returns. This table represents returns of several theoretical portfolios that do not assume any costs. This table is not to be construed as advertising for any investment service. Real portfolios that attempt to exactly replicate these theoretical strategies are likely to generate lower returns relative to these models due to slippage, transaction costs, tax expenses and other costs. There are limitations inherent in our theoretical results, particularly with the fact that such results do not represent actual trading and they may not reflect the impact material economic and market factors might have had on our decision making if we were actually managing client money. We do our best to provide accurate information, but do not guarantee this. Please see additional disclosures and disclaimers.

Simple Returns -- Long Theoretical Model Portfolios vs S&P 500 Total Return Index Real-time Data Collected Since March 31, 2009



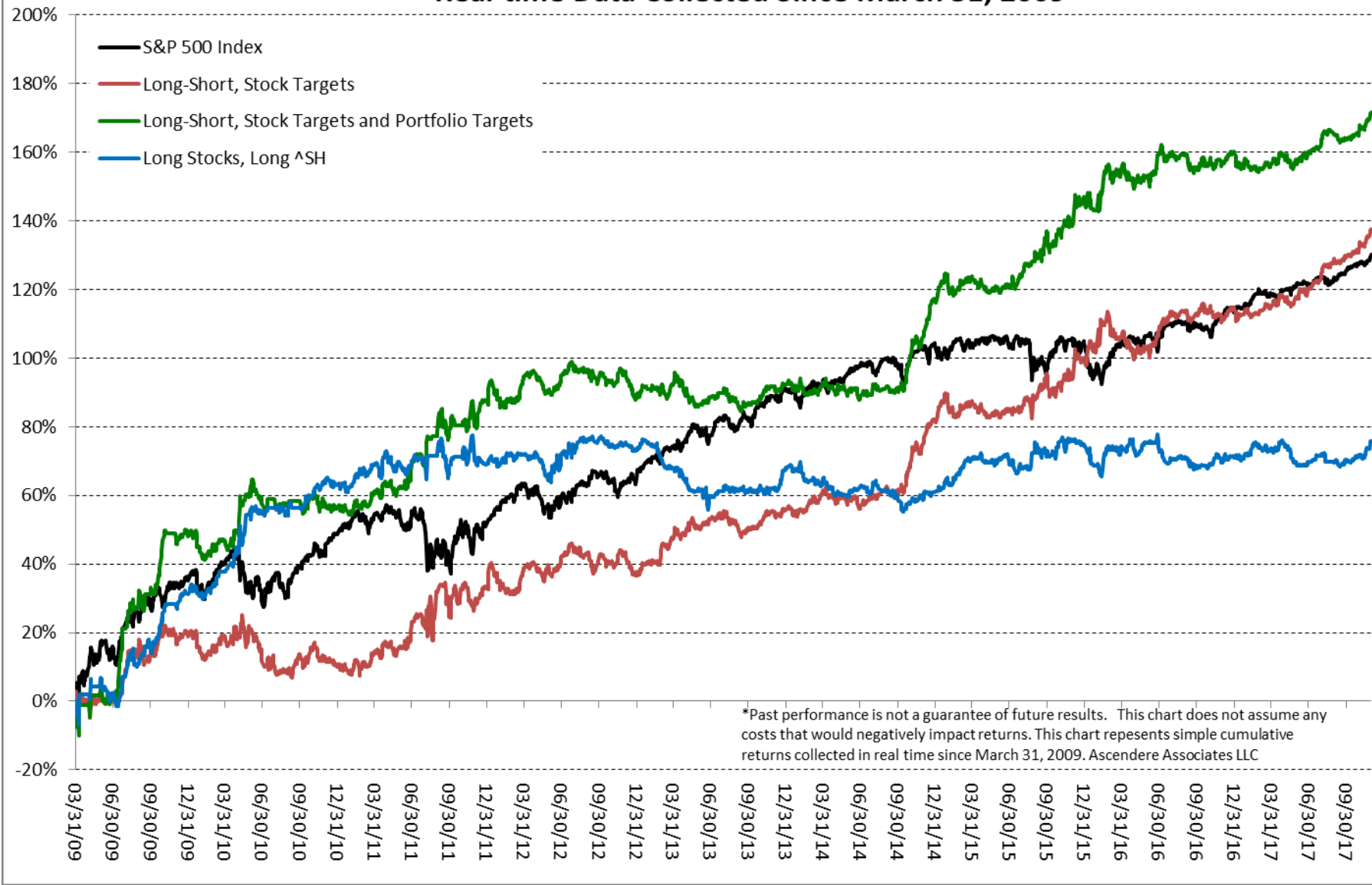
Compound Returns -- Long Theoretical Model Portfolios vs S&P 500 Total Return Index Real-time Data Collected Since March 31, 2009



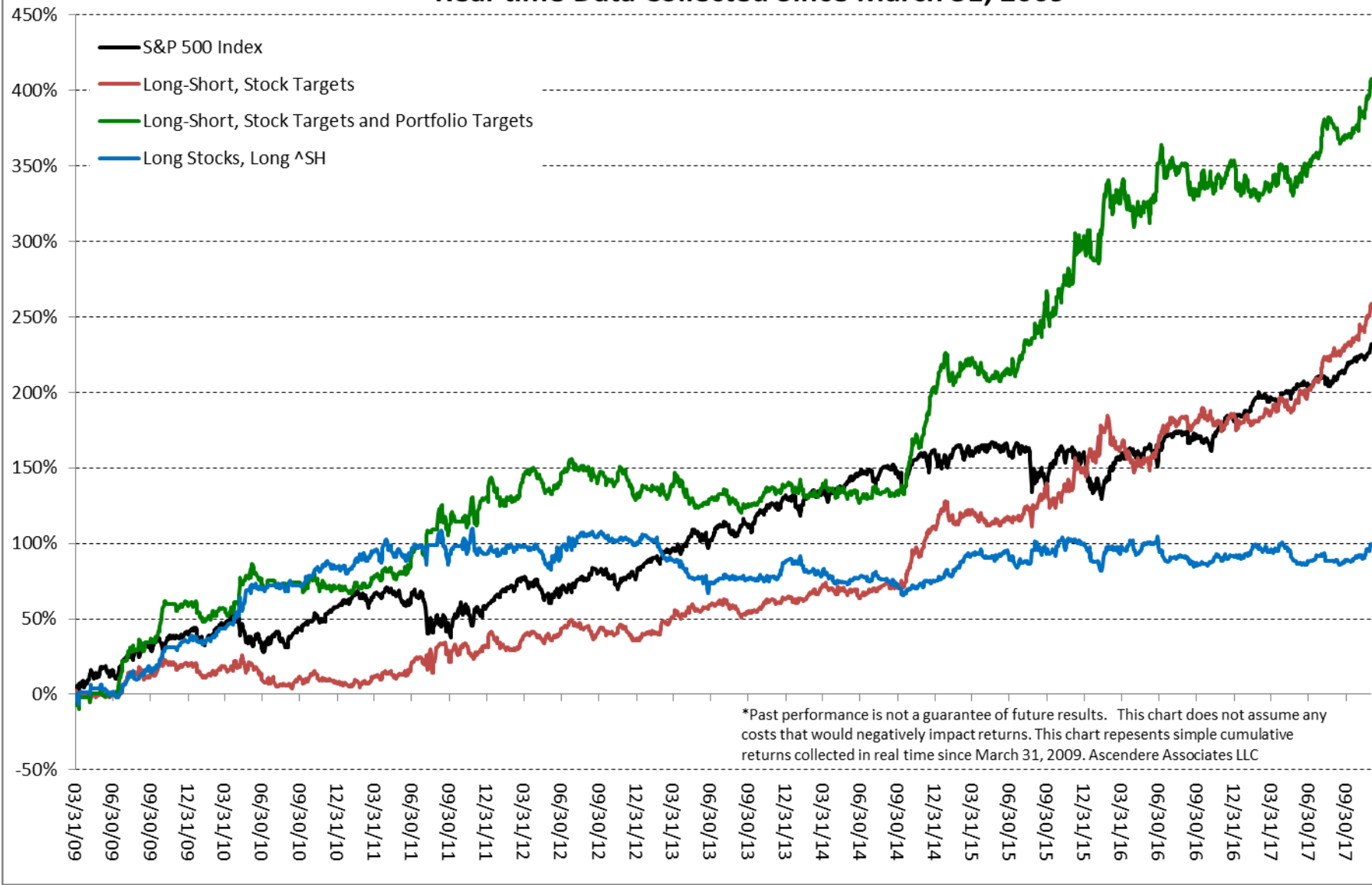
"Theoretical Dollar Neutral" Strategies

Simple Cumulative Returns

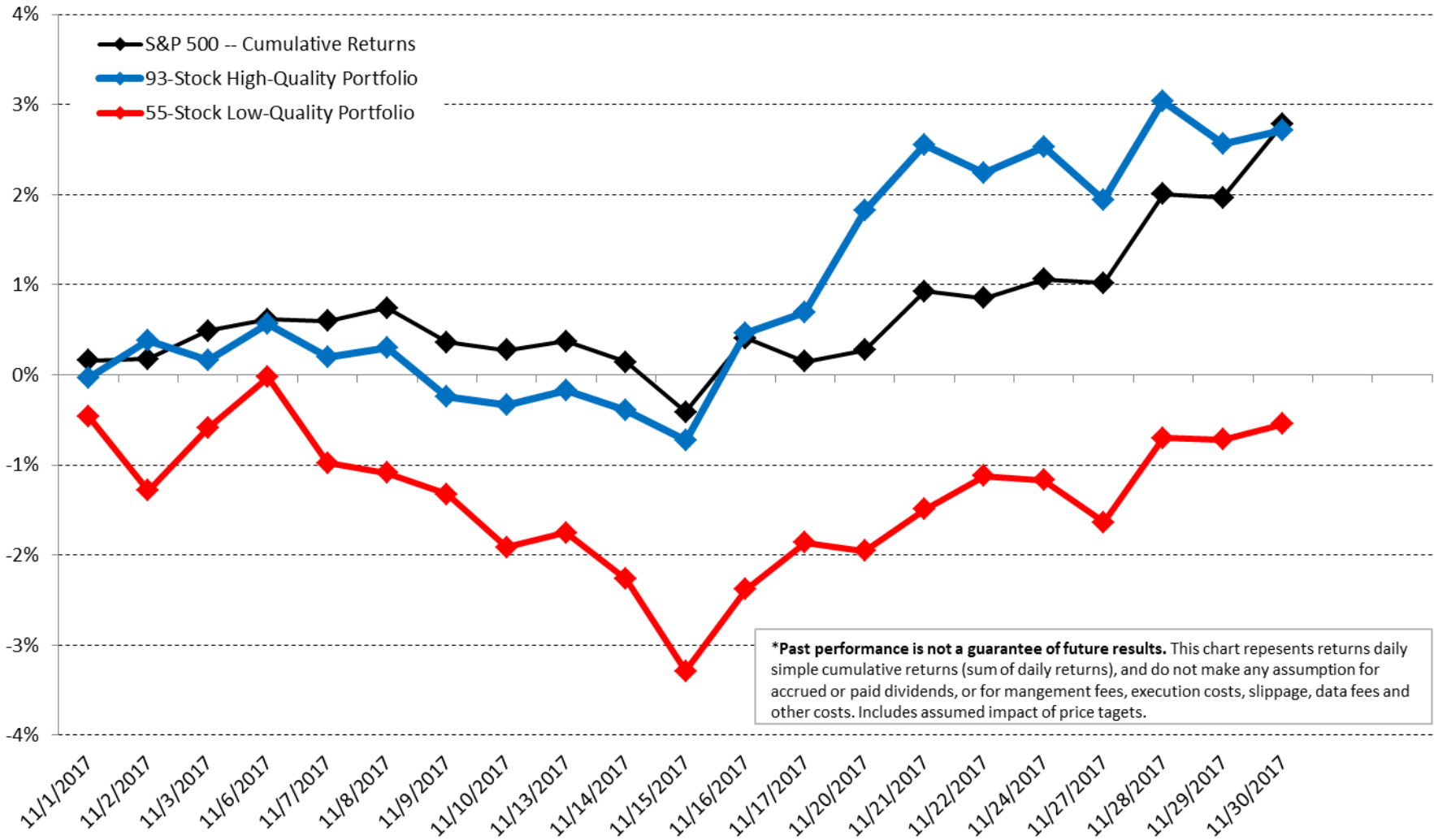
Real-time Data Collected Since March 31, 2009



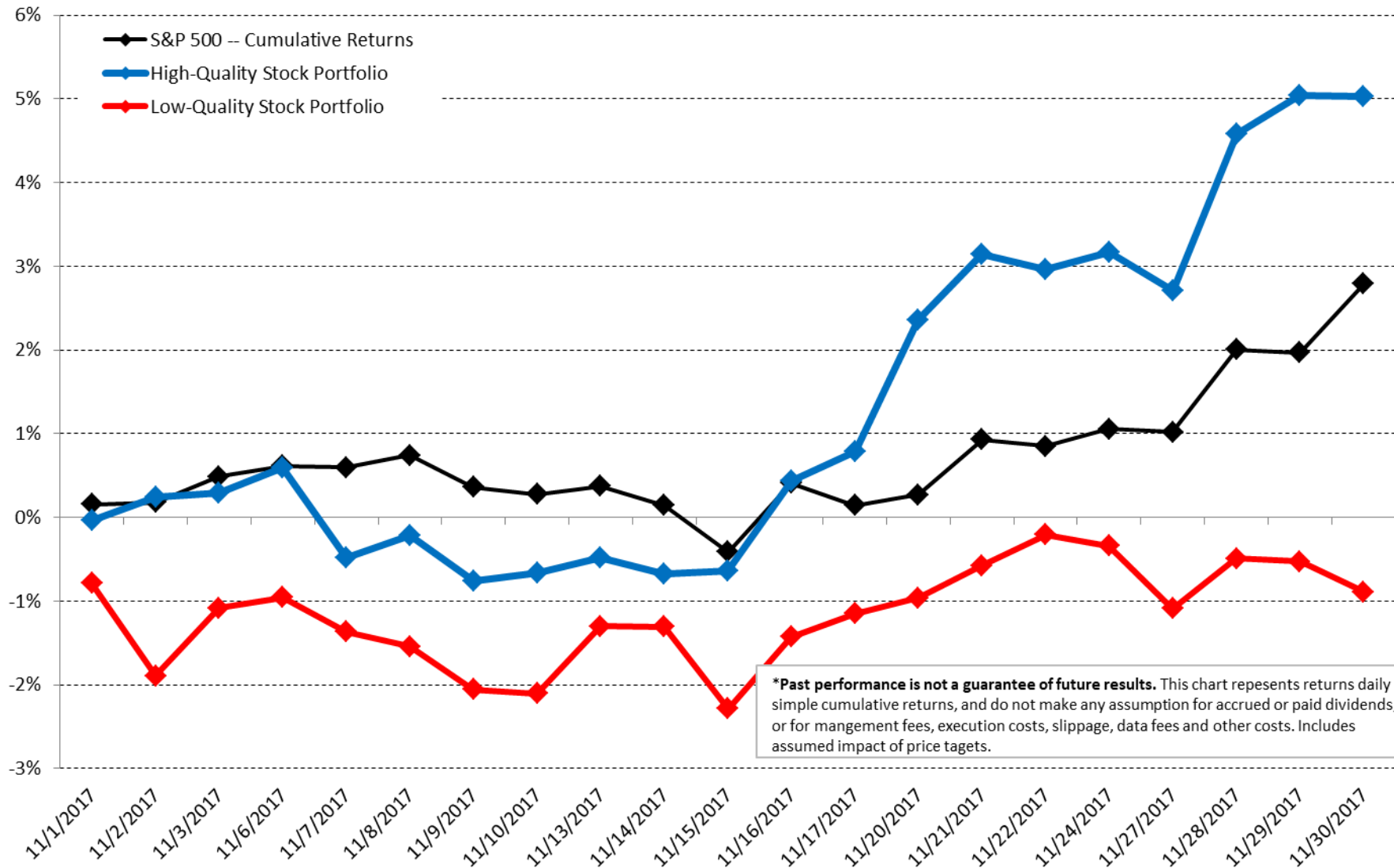
"Theoretical Dollar Neutral" Strategies Compound Returns Real-time Data Collected Since March 31, 2009



High-Quality vs. Low-Quality Sum of Daily Returns Base Portfolios -- November 2017

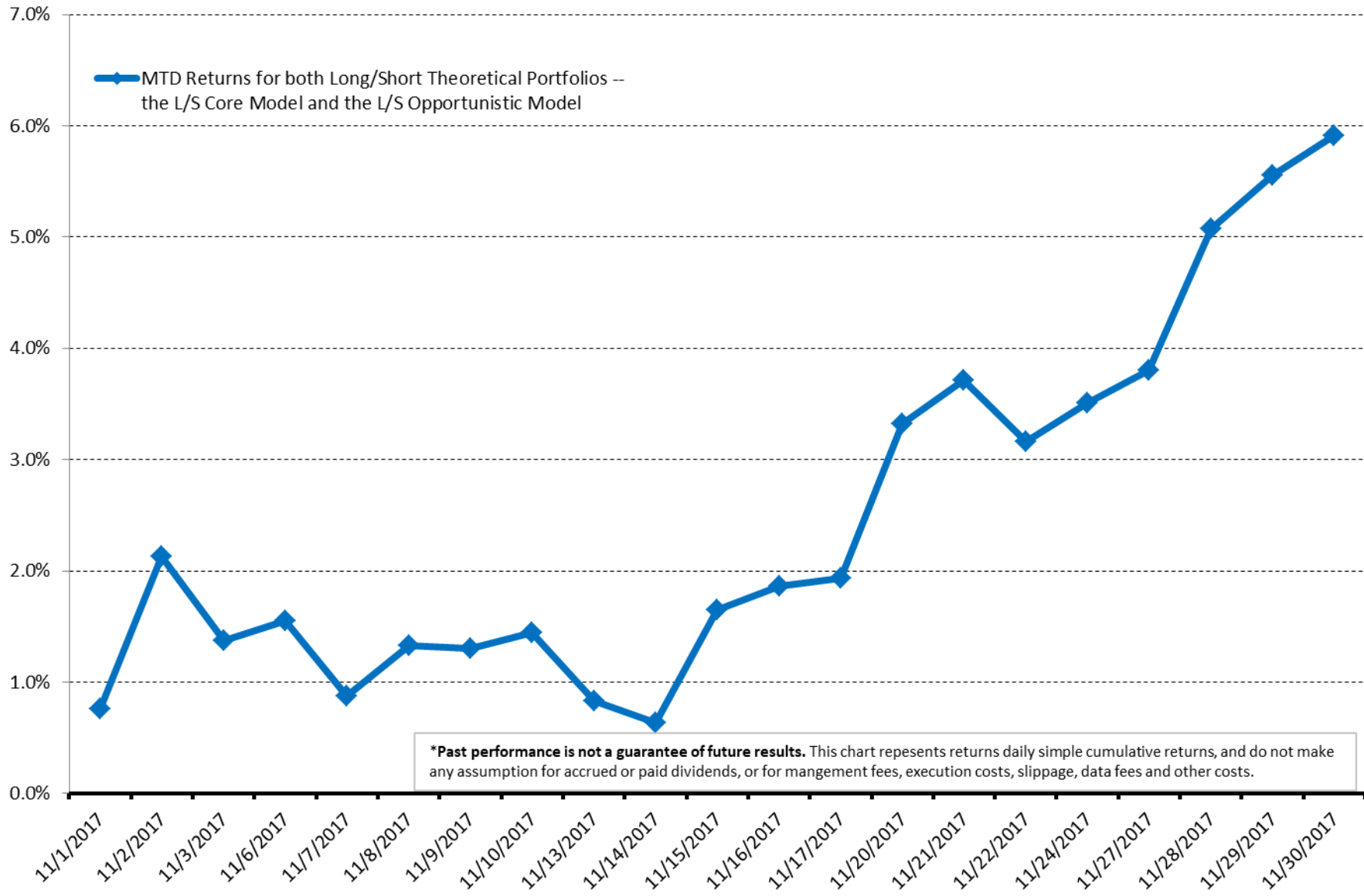


High-Quality vs. Low-Quality Sum of Daily Returns Core Model Portfolios -- November 2017

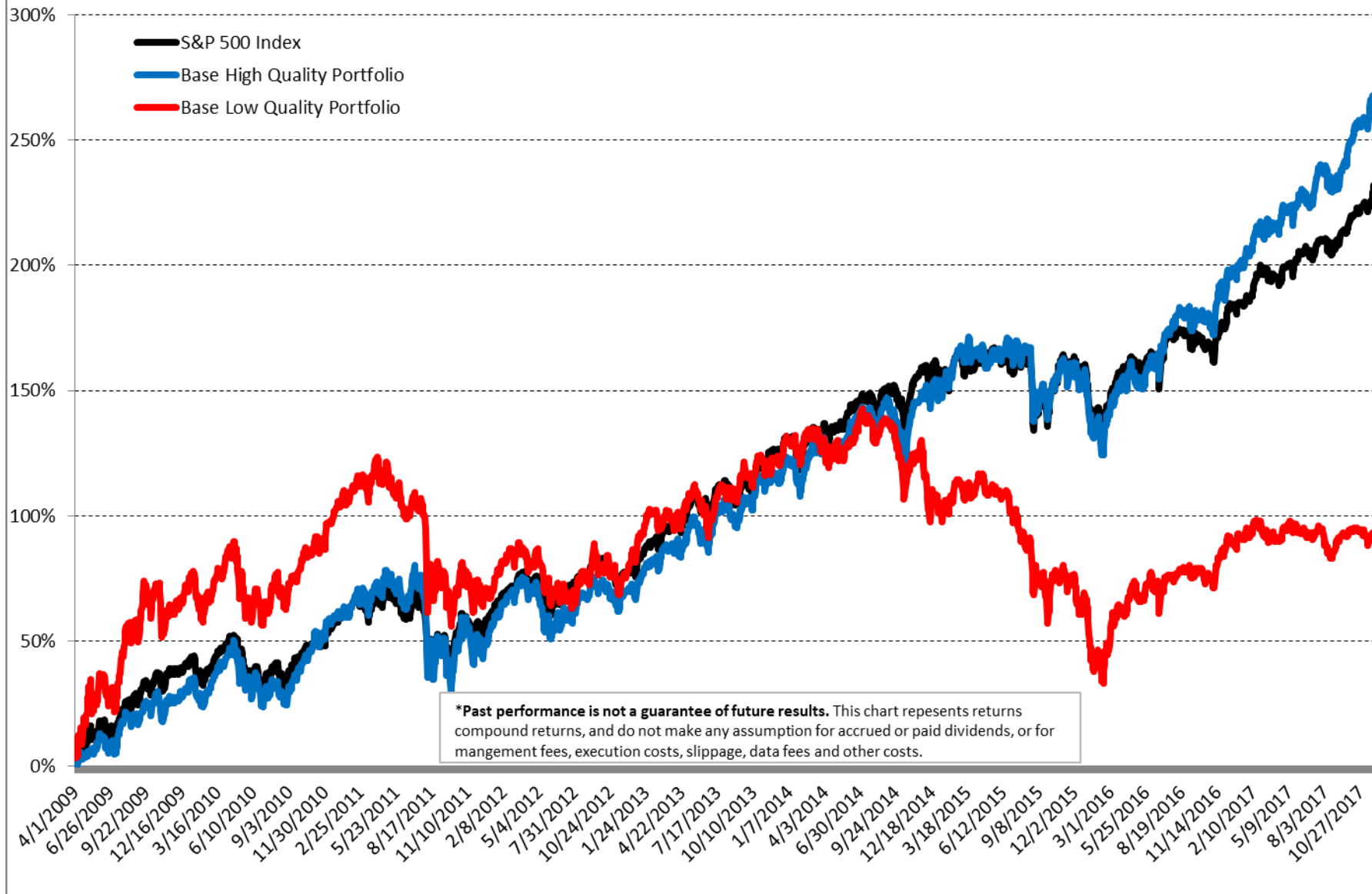


***Past performance is not a guarantee of future results.** This chart represents returns daily simple cumulative returns, and do not make any assumption for accrued or paid dividends, or for mangement fees, execution costs, slippage, data fees and other costs. Includes assumed impact of price tagets.

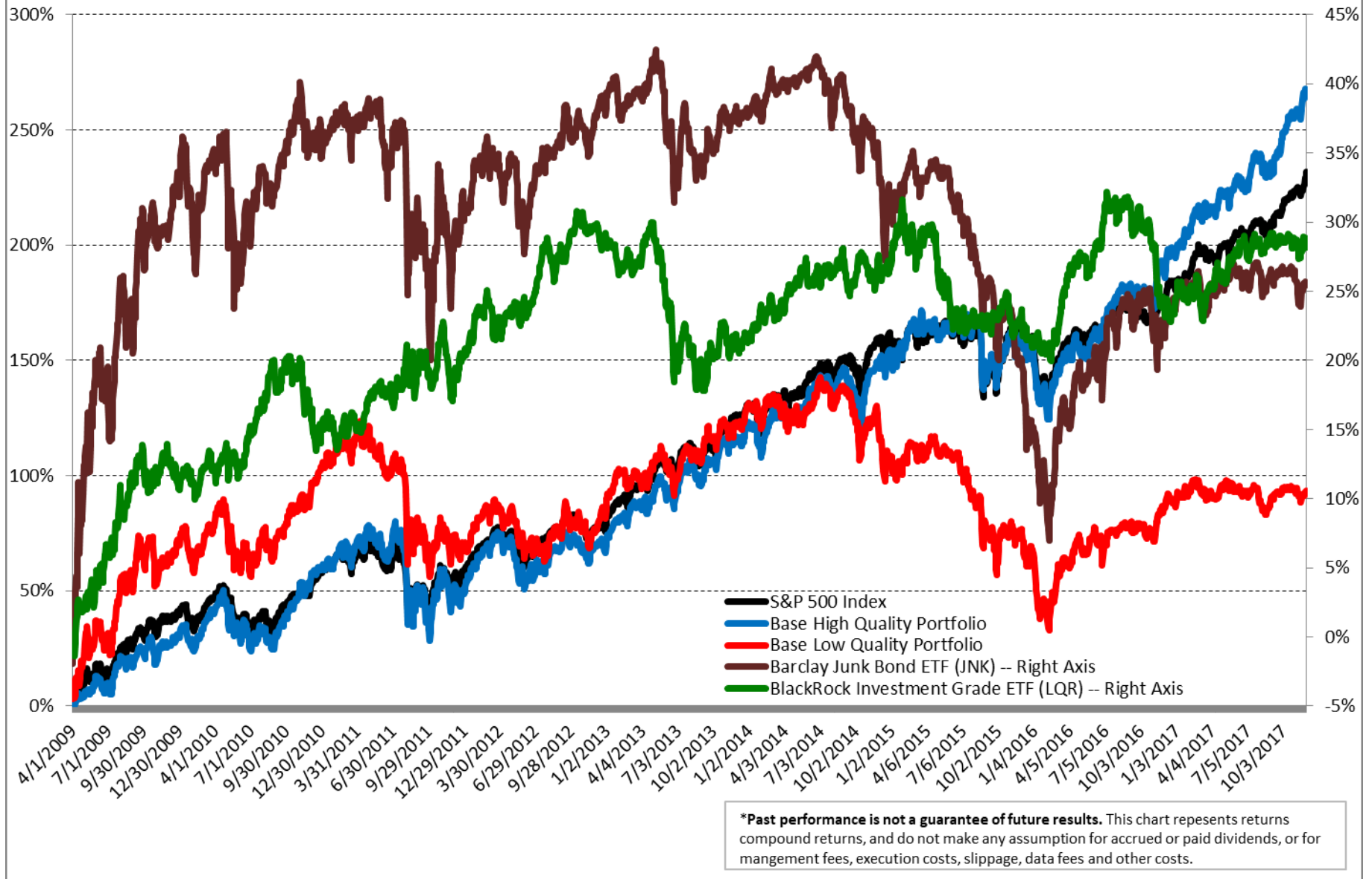
Theoretical Long/Short Model Portfolio Sum of Daily Returns November 2017



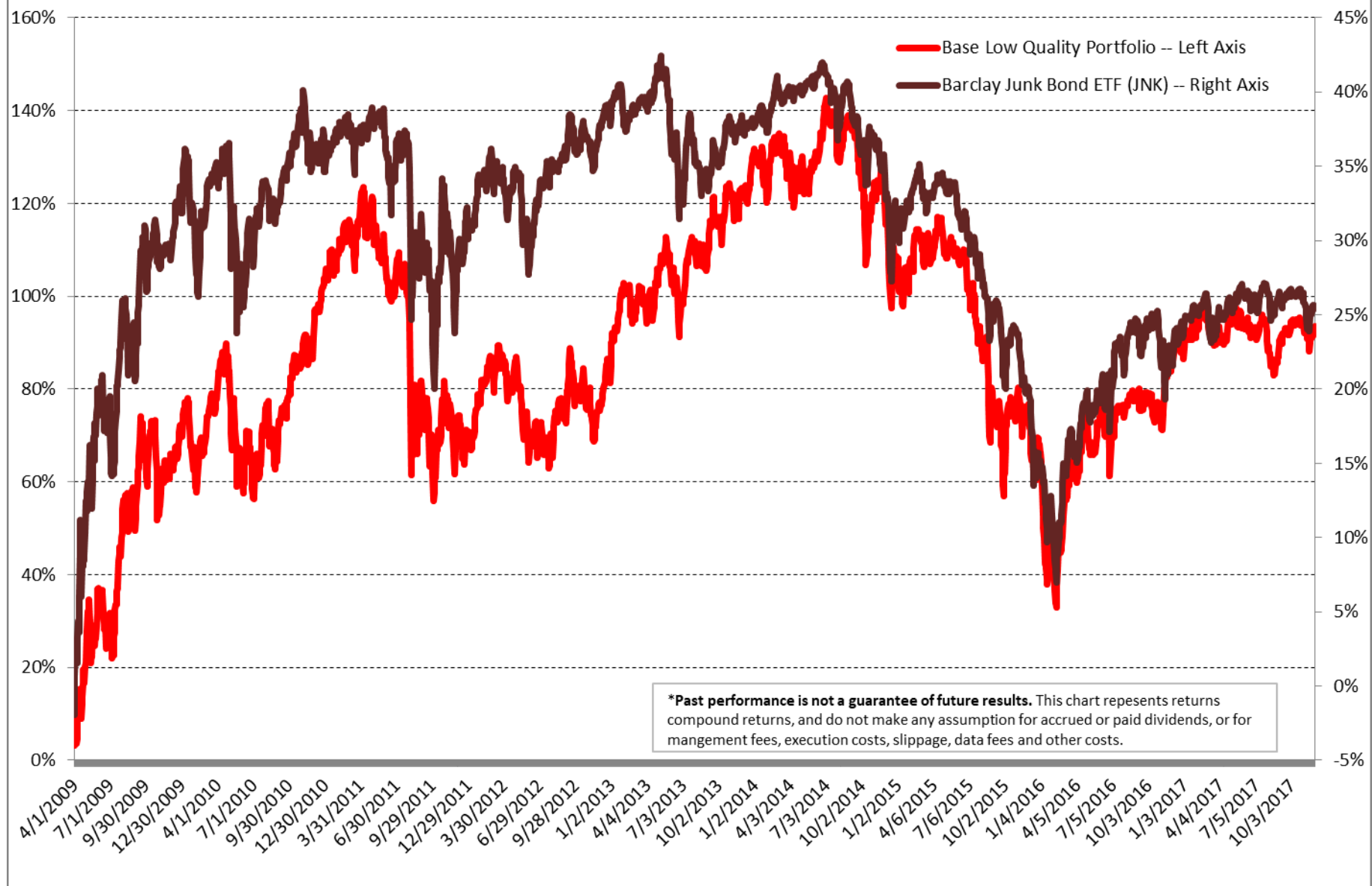
High-Quality vs. Low-Quality Base Portfolios -- Since March 31, 2009 Inception



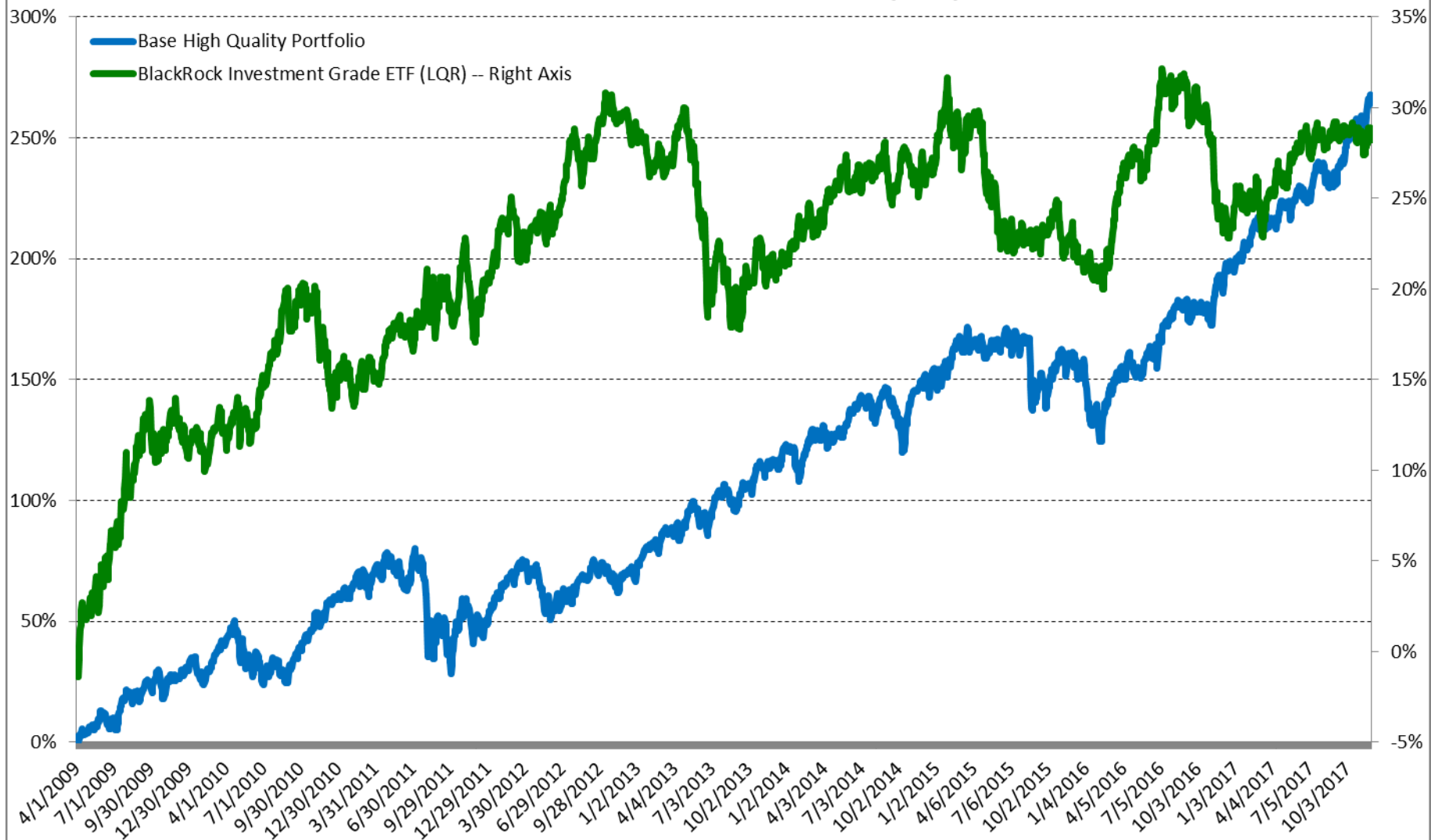
High-Quality vs. Low-Quality Base Portfolios -- Since March 31, 2009 Inception Versus Barclay Junk Bond ETF and BlackRock Investment Grade ETF



Low-Quality Base Portfolio -- Since March 31, 2009 Inception Versus Barclay Junk Bond ETF

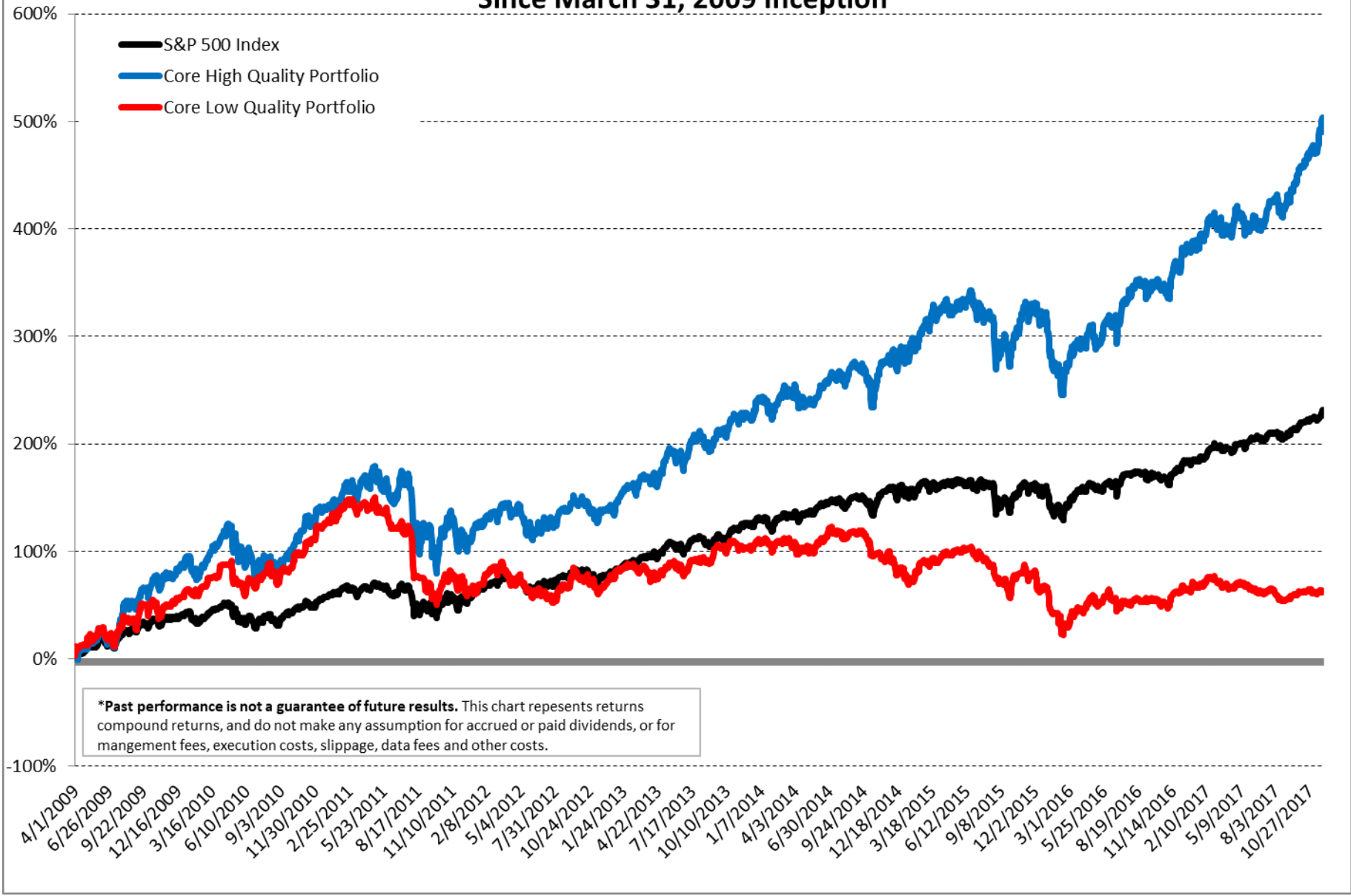


High-Quality Base Portfolios -- Since March 31, 2009 Inception BlackRock Investment Grade ETF (LQR)

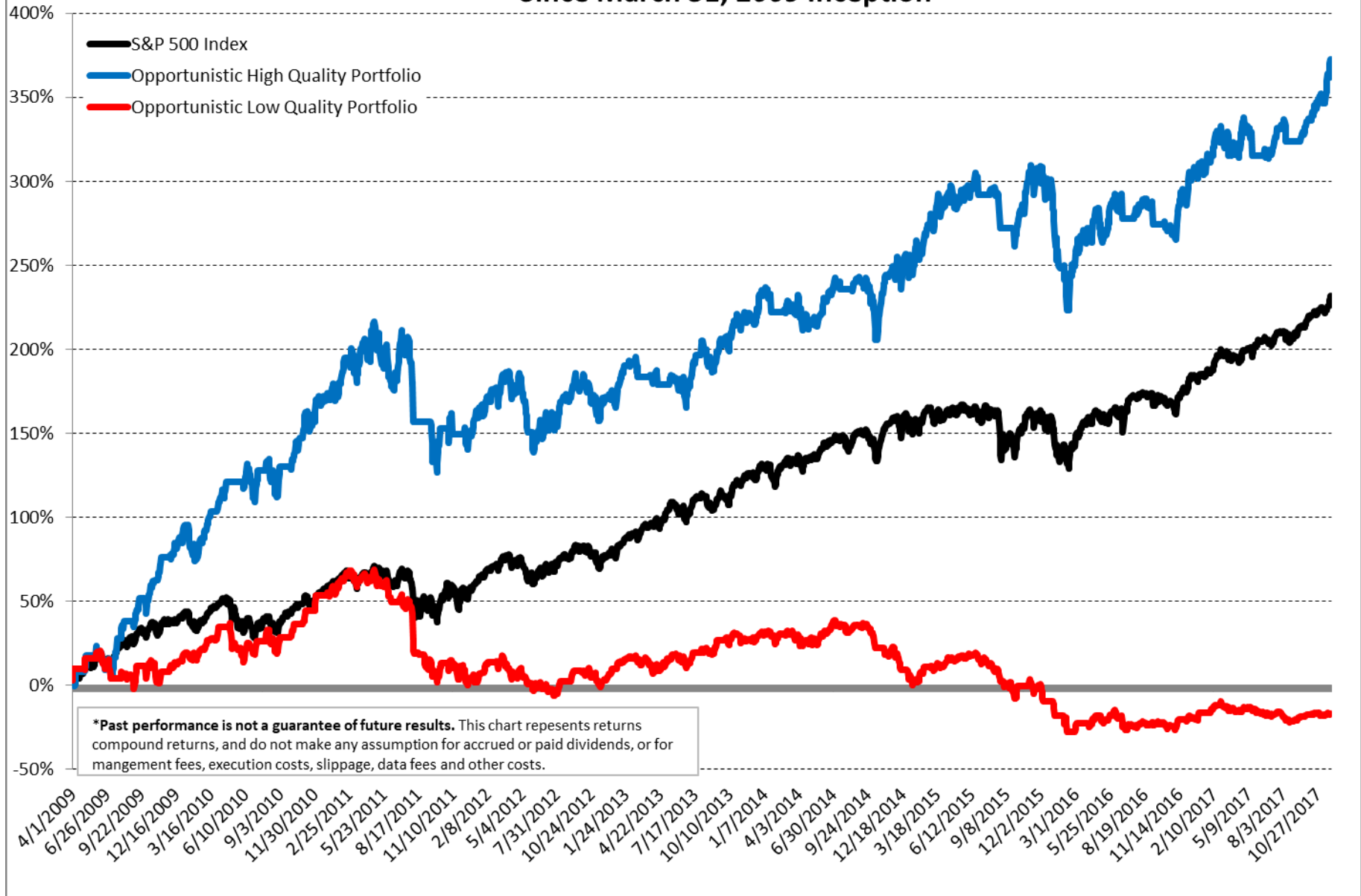


***Past performance is not a guarantee of future results.** This chart represents returns compound returns, and do not make any assumption for accrued or paid dividends, or for mangement fees, execution costs, slippage, data fees and other costs.

High-Quality vs. Low-Quality Core Model Portfolios Since March 31, 2009 Inception



High-Quality vs. Low-Quality Opportunistic Model Portfolios Since March 31, 2009 Inception



Ascendere Associates**Sell Side Analyst Upgrades and Downgrades to Long Model Portfolio Stocks****Long Model Portfolios****Upgrades -- November 1, 2017 to date**

Date	Company	Ticker	Action
11/30/2017	Facebook, Inc.	FB	MKM Partners raises price target to \$240 from \$200 and maintains Buy rating.
11/30/2017	Micron Technology Inc.	MU	Deutsche Bank raises price target to \$55 from \$50 and maintains Buy rating.
11/29/2017	Arista Networks, Inc.	ANET	BofA/Merrill raises price target to \$250 from \$210 and maintains Neutral rating.
11/29/2017	Illinois Tool Works Inc.	ITW	Jefferies raises price target to \$190 from \$180 and maintains Buy rating.
11/27/2017	Thor Industries Inc.	THO	SunTrust raises price target to \$165 from \$140 and maintains Buy rating.
11/27/2017	Thor Industries Inc.	THO	BMO Capital raises its price target to \$150 from \$135 and maintained a Market Perform rating.
11/28/2017	Micron Technology Inc.	MU	Baird raised its price target to \$60 from \$52 and reiterates Outperform.
11/27/2017	Micron Technology Inc.	MU	Morgan Stanley raises price target to \$55 from \$39 and reiterates Overweight rating.
11/22/2017	Armstrong World Industries, Inc.	AWI	SunTrust raises price target to \$62 from \$55 and maintains Buy rating.
11/21/2017	Armstrong World Industries, Inc.	AWI	Nomura Instinet raises price target to \$65 from \$55 and maintains Buy rating.
11/16/2017	Arista Networks, Inc.	ANET	Needham raises price target to \$230 from \$217 and maintains Buy rating.
11/16/2017	YY Inc.	YY	JPMorgan raises price target to \$140 from \$70 and upgrades to Overweight from Neutral.
11/15/2017	YY Inc.	YY	Jefferies raises price target to \$110 from \$79 and upgrades to Buy from Hold.
11/14/2017	Peabody Energy Corp.	BTU	Jefferies initiates coverage with a \$38 price target and Buy rating.
11/10/2017	Micron Technology Inc.	MU	JP Morgan raises price target to \$55 from \$50 and maintains Overweight rating.
11/10/2017	Kohl's Corp.	KSS	Baird raises price target to \$47 from \$46 and upgrades to Outperform from Neutral.
11/9/2017	Kohl's Corp.	KSS	Gordon Haskett raises price target to \$44 and upgrades to Accumulate from Hold.
11/8/2017	Arista Networks, Inc.	ANET	RBC Capital raises price target to \$234 from \$200 and upgrades to Outperform from Sector Perform.
11/7/2017	Huntsman Corp.	HUN	Citi raised its price target to \$38 from \$29 while resuming coverage with a Buy rating.
11/7/2017	Micron Technology Inc.	MU	Deutsche Bank raises price target to \$50 from \$43 and reiterates Buy rating.
11/6/2017	Arista Networks, Inc.	ANET	Needham raises price target to \$217 from \$175 and maintains Buy rating.
11/6/2017	MasTec, Inc.	MTZ	Baird raises price target to \$53 from \$51 and upgrades to Outperform from Neutral.
11/3/2017	Yum! Brands Inc.	YUM	UBS raises price target to \$89 from \$83 and reiterates Buy rating.
11/3/2017	Arista Networks, Inc.	ANET	BMO Capital raises price target to \$205 from \$190 and keeps Market Perform rating.
11/3/2017	Arista Networks, Inc.	ANET	Citi raises price target to \$220 from \$215 and maintains Buy rating.
11/2/2017	Facebook, Inc.	FB	Oppenheimer raises price target to \$200 from \$194 and reiterates Outperform rating.
11/2/2017	Facebook, Inc.	FB	Needham raises price target to \$215 from \$185 and maintains Buy rating.
11/2/2017	Facebook, Inc.	FB	RBC Capital raises price target to \$230 from \$195 and maintains Outperform rating.
11/2/2017	Facebook, Inc.	FB	Wedbush increases price target to \$230 from \$225 and reiterates Outperform rating.
11/2/2017	Facebook, Inc.	FB	UBS increases price target to \$208 from \$190 and reiterates Buy rating.
11/2/2017	Facebook, Inc.	FB	Baird increases price target to \$200 from \$185 and reiterates Outperform rating.
11/2/2017	Facebook, Inc.	FB	Cantor Fitzgerald raises price target to \$220 from \$190, keeps it a top pick, and maintains Overweight.
11/2/2017	Facebook, Inc.	FB	KeyBanc raises price target to \$220 from \$200 and reiterates Overweight rating.
11/2/2017	Facebook, Inc.	FB	Citi raises price target to \$210 from \$200 and maintains Buy rating.
11/2/2017	Facebook, Inc.	FB	JP Morgan raises price target to \$225 from \$210 and reiterates Overweight rating.
11/2/2017	Facebook, Inc.	FB	Jefferies raises price target to \$225 from \$215 and maintains Buy rating.
11/2/2017	Facebook, Inc.	FB	Barclays raises price target to \$215 from \$200 and maintains Overweight rating.
11/1/2017	Allison Transmission Holdings, Inc. ALSN		Deutsche Bank raises price target to \$37 from \$33 and maintains Sell rating.

Downgrades -- November 1, 2017 to date

Date	Company	Ticker	Action
11/30/2017	Raymond James Financial Inc.	RJF	Credit Suisse initiates with \$82 price target and Underperform rating.
11/30/2017	Cathay General Bancorp	CATY	BMO Capital maintained \$45 price target and downgrades to Market Perform from Outperform.
11/28/2017	Micron Technology Inc.	MU	Standpoint Research downgrades to Hold from Outperform.
11/27/2017	Norfolk Southern Corp.	NSC	Loop Capital lowered price target to \$120 from \$133 downgrades the stock to Sell from Hold.
11/20/2017	Teradyne Inc.	TER	Deutsche Bank downgrades the stock to Hold from Buy.
11/2/2017	Facebook, Inc.	FB	Credit Suisse lowers price target to \$230 from \$235 and reiterates Outperform rating.
11/2/2017	Facebook, Inc.	FB	Stifel lowers price target to \$195 from \$200 and maintains Buy rating.

Ascendere Associates Long Model Portfolio

October 31 to November 30, 2017

Sell Side Positive Price Target Revisions

Total	FB	ANET	MU	KSS	YY	AWI	THO	ITW	HUN	MTZ	YUM	ALSN
36	13	6	4	2	2	2	2	1	1	1	1	1

Sell Side Ratings Upgrades

Total	KSS	YY	MTZ	BTU	ANET	MU
8	2	2	1	1	1	1

Sell Side Negative Price Target Revisions

Total	FB	NSC
3	2	1

Sell Side Ratings Downgrades

Total	TER	NSC	MU	CATY
4	1	1	1	1

Ascendere Associates

Sell Side Analyst Upgrades and Downgrades

Short Sale Model Portfolios

Downgrades confirming short sale thesis -- November 1, 2017 to date

Date	Company	Ticker	Action
11/24/2017	ZTO Express, Inc.	ZTO	UBS raises price target to \$18 from \$17 and downgrades to Neutral from Buy.
11/15/2017	MACOM Technology Solutions	MTSI	Needham lowers price target to \$42 from \$45 and maintains Buy rating.
11/15/2017	MACOM Technology Solutions	MTSI	Stifel lowers price target to \$35 from \$43 and maintains Hold rating.
11/15/2017	MACOM Technology Solutions	MTSI	DA Davidson lowers price target to \$32 from \$45 and maintains Neutral rating.
11/15/2017	MACOM Technology Solutions	MTSI	BofA/Merrill lowers price target to \$30 from \$45 and downgrades to Underperform from Hold.
11/15/2017	MACOM Technology Solutions	MTSI	Barclays lowers price target to \$40 from \$50 and maintains Overweight.
11/10/2017	MetLife, Inc.	MET	Sandler O'Neill downgrades to Hold from Buy.
11/10/2017	Under Armour, Inc.	UAA	Nomura Instinet lowers price target to \$9 from \$13 and maintains Reduce rating.
11/7/2017	Colfax	CFX	Baird lowers price target to \$47 from \$50 while reiterating Outperform rating.
11/7/2017	Under Armour, Inc.	UAA	Susquehanna upgrades to Neutral from Negative and lowers price target to \$11 from \$15.
11/3/2017	Flowserve Corp.	FLS	Seaport Global lowers price target to \$40 from \$60 and downgrades to Neutral from Buy.
11/3/2017	Flowserve Corp.	FLS	BMO Capital lowers price target to \$41 from \$51 and downgrades to Market Perform from Outperform.
11/1/2017	Under Armour, Inc.	UAA	Bernstein lowers price target to \$9 from \$14 and reiterates Underperform rating.
11/1/2017	Under Armour, Inc.	UAA	Wedbush lowers price target to \$11 from \$17 and reiterates Neutral rating.
11/1/2017	Under Armour, Inc.	UAA	Canaccord lowers price target to \$8 from \$15 and downgrades to Sell from Hold.
11/1/2017	Under Armour, Inc.	UAA	SunTrust downgrades rating to Hold from Buy.
11/1/2017	Under Armour, Inc.	UAA	Deutsche Bank lowers price target to \$11 and reiterates Sell rating.
11/1/2017	Under Armour, Inc.	UAA	Citi lowers price target to \$14 from \$21 and maintains Neutral rating.

Upgrades contradicting short sale thesis -- November 1, 2017 to date

11/28/2017	Axalta Coating Systems Ltd.	AXTA	KeyBanc raises price target to \$40 from \$36 and reiterates Overweight rating.
11/24/2017	ZTO Express, Inc.	ZTO	UBS raises price target to \$18 from \$17 and downgrades to Neutral from Buy.
11/21/2017	Colfax Corporation	CFX	Longbow upgrades to Buy from Neutral.
11/10/2017	ViaSat, Inc.	VSAT	Needham upgrades to Buy from Hold with a \$78 price target.
11/10/2017	Puma Biotechnology	PBYI	Credit Suisse raises price target to \$142 from \$136 and maintains Outperform rating.
11/10/2017	Puma Biotechnology	PBYI	RBC Capital raises price target to \$108 from \$92 and maintains Sector Perform rating.
11/10/2017	Puma Biotechnology	PBYI	Barclays raises price target to \$122 from \$103 and maintains Overweight.
11/8/2017	Penumbra, Inc.	PEN	BMO Capital raises price target to \$117 from \$96 and maintains Outperform.
11/7/2017	Under Armour, Inc.	UAA	Susquehanna upgrades to Neutral from Negative.
11/6/2017	Fluor Corporation	FLR	Canaccord raises price target to \$54 from \$49 and reiterates Buy rating.
11/6/2017	Cree Inc.	CREE	Deutsche Bank "has" \$45 price target and upgrades to Buy from Hold.
11/3/2017	Mattel Inc.	MAT	DA Davidson maintained \$12 price target and upgraded to Neutral from Underperform.
11/1/2017	The Mosaic Company	MOS	Cleveland Research upgrades to Buy from Neutral.

Ascendere Associates Short Sale Model Portfolio

October 31 to November 30, 2017

Sell Side Negative Price Target Revisions

Total	UAA	MTSI	FLS	MET	CFX
17	8	5	2	1	1

Sell Side Ratings Downgrades

Total	UAA	FLS	MET	MTSI	ZTO
8	3	2	1	1	1

Sell Side Positive Price Target Revisions

Total	PBYI	PEN	FLR	ZTO	AXTA
7	3	1	1	1	1

Sell Side Ratings Upgrades

Total	VSAT	UAA	MAT	MOS	CFX
5	1	1	1	1	1

	Core	Opportunistic	"Dollar Neutral" 1	"Dollar Neutral" 2	
Inception March 31, 2009	Long, Stock Targets	Long, Stock and Portfolio Targets	Long/Short, Stock Targets and Portfolio Targets	Long, Stock and Portfolio Targets / Long ^SH ETF	S&P 500
11/30/2017	Theoretical	Theoretical	Theoretical	Theoretical	
Simple Returns					
Today	-0.01%	-0.01%	0.35%	-0.01%	0.82%
MTD	5.03%	5.03%	5.91%	3.92%	2.79%
YTD	24.02%	16.75%	11.76%	4.86%	16.99%
Cumulative from 3/31/2009	200.13%	167.63%	171.79%	75.76%	130.23%
Absolute Risk					
Daily Average	0.09%	0.08%	0.08%	0.03%	0.06%
Daily Range	16.86%	15.84%	11.84%	12.00%	11.40%
Daily Standard Deviation	1.36%	1.06%	0.93%	0.78%	0.97%
Daily Return/Standard Deviation	6.73%	7.25%	8.50%	4.47%	6.16%
Average 90-Day T-bill	1.18%	1.18%	1.18%	1.18%	1.18%
Annualized Daily Returns	23.09%	19.34%	19.82%	8.74%	15.03%
Annualized Standard Deviation	21.6%	16.8%	14.7%	12.3%	15.4%
Sharpe Ratio	1.01	1.08	1.27	0.61	0.90
Percentage Down Days	45.1%	35.1%	43.0%	44.9%	45.1%
Average Daily Downside Value	-0.96%	-0.84%	-0.63%	-0.52%	-0.68%
Daily Downside Deviation	-1.03%	-0.88%	-0.60%	-0.55%	-0.75%
Daily VAR of 1000 at 95% Conf	-21	-17	-14	-12	-15
Benchmark Relative Risk					
Correlation	0.91	0.71	(0.05)	0.06	
R-Squared	0.83	0.50	0.00	0.00	
Daily Tracking Error	0.63%	0.78%	1.37%	1.21%	
Regression					
Beta	1.28	0.77	-0.05	0.05	
Daily Alpha	0.032%	0.017%	0.019%	-0.025%	
Jensen's Daily Alpha	0.041%	0.013%	-0.001%	-0.001%	
Trading Days	2184	2184	2184	2184	
*Returns calculated by the simple return method (not compounded).					
* Portfolio models are theoretical and assume no costs.					
* Data collected in real time since 3/31/2009					
Source: Ascendere Associates LLC					

Buy and Hold 12 Months Starting November 30, 2016: Outperforms S&P 500 by +8.46%

We highlighted **Facebook, Inc. (FB)** as our favorite long idea in our report, [28 Stocks for December 2016](#). FB was the 6th best performer with a return of 49.62% over 12 months. The overall theoretical equal-weighted portfolio with an assumed rebalancing date of November 30, 2016 returned 28.79% over 12 months versus 20.39% for the S&P 500. 18 stocks performed better than the S&P 500 and 10 underperformed.

28 Stocks for December 2016 One-Year Buy and Hold Returns

Company Name	Ticker	11/30/2016	11/30/2017	Performance
Apollo Global Management, LLC	APO	17.97	31.31	74.2%
Teradyne Inc.	TER	24.19	40.47	67.3%
Applied Materials Inc.	AMAT	31.91	52.77	65.4%
Copart, Inc.	CPRT	27.36	43.16	57.7%
ManpowerGroup Inc.	MAN	84.02	128.90	53.4%
Facebook, Inc.	FB	118.42	177.18	49.6%
Essent Group Ltd.	ESNT	30.52	44.25	45.0%
Logitech International SA	LOGI	24.06	34.66	44.0%
HP Inc.	HPQ	14.94	21.45	43.6%
Unum Group	UNM	41.53	56.62	36.3%
Texas Instruments Inc.	TXN	72.11	97.29	34.9%
A. O. Smith Corporation	AOS	48.12	63.42	31.8%
Evercore Inc.	EVR	66.18	86.85	31.2%
LCI Industries	LCII	103.05	130.90	27.0%
Cathay General Bancorp	CATY	34.32	43.39	26.4%
Northrop Grumman Corp.	NOC	245.97	307.40	25.0%
State Street Corp.	STT	77.37	95.35	23.2%
Burlington Stores, Inc.	BURL	87.92	106.37	21.0%
Fifth Third Bancorp	FITB	25.45	30.51	19.9%
First Republic Bank	FRC	81.33	95.54	17.5%
EMCOR Group Inc.	EME	69.04	80.77	17.0%
Gentex Corp.	GNTX	18.14	20.48	12.9%
Bank of Hawaii Corporation	BOH	81.31	84.88	4.4%
United Therapeutics Corp.	UTHR	125.61	129.99	3.5%
Cirrus Logic Inc.	CRUS	55.00	55.24	0.4%
InterDigital, Inc.	IDCC	78.29	76.10	-2.8%
Home Bancshares, Inc. (Conway)	HOMB	25.44	23.80	-6.4%
Hawaiian Holdings Inc.	HA	51.18	43.15	-15.7%
Theoretical Long Model		100.00	128.85	28.9%
S&P 500	^SPX	2,198.81	2,647.25	20.4%

	1yr Buy and Hold Portfolio	S&P 500
Compound Return	28.85%	20.39%
Simple Cumulative Return	26.11%	18.80%
Daily Average	0.1032%	0.0746%
Standard Deviation	0.77%	0.43%
Return/Standard Deviation	13.43%	17.24%
Average 3-Month Libor	0.79%	0.79%
Annualized Daily Returns	26.00%	18.80%
Annualized Standard Deviation	12.2%	6.9%
Sharpe Ratio	2.07	2.62

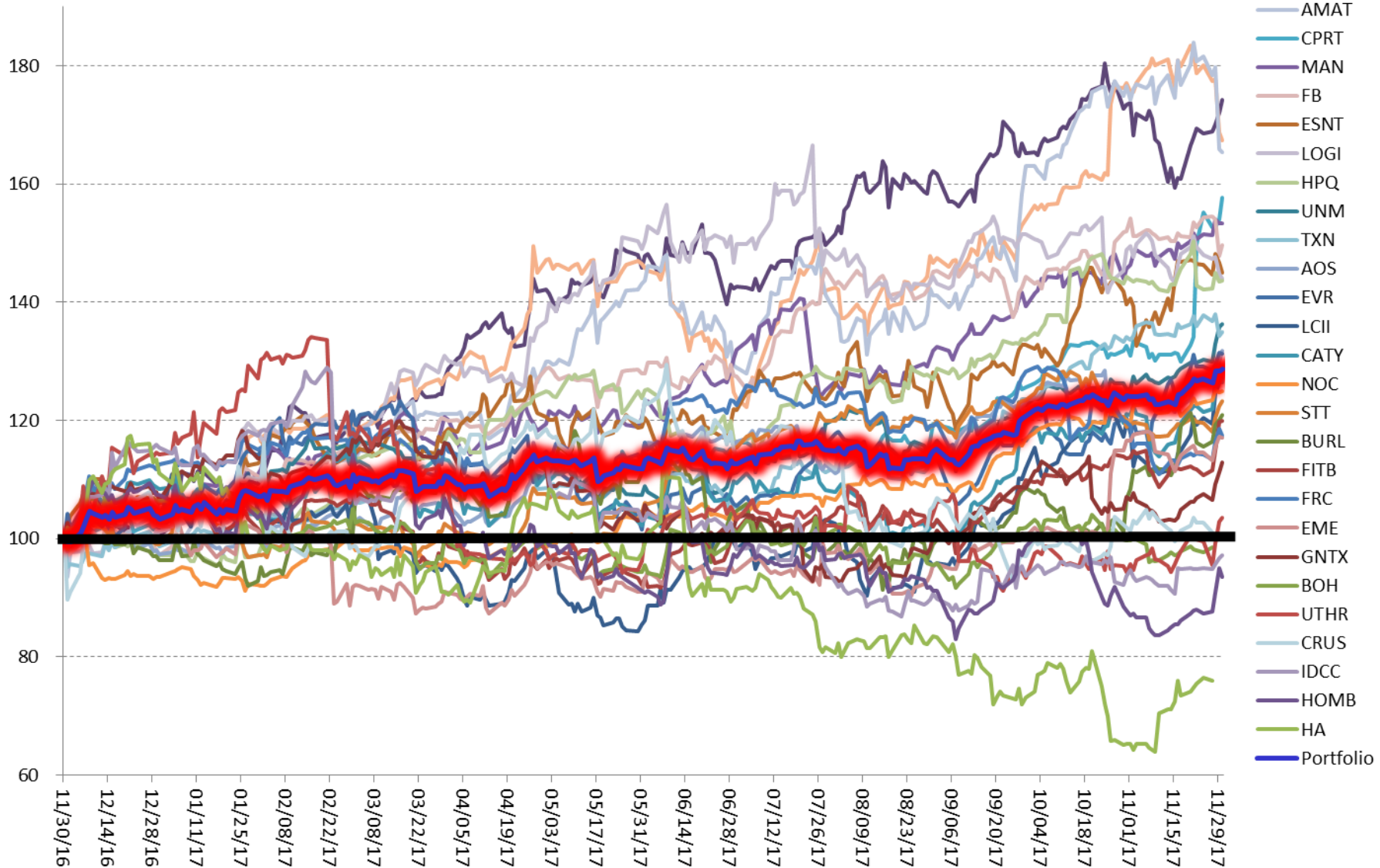
Compound Returns	Ticker	12/30/2016	2/28/2017	5/31/2017	11/30/2017
Facebook, Inc.	FB	-2.85%	14.46%	27.90%	49.62%
Buy and Hold Model		3.42%	8.70%	11.95%	28.85%
S&P 500		1.82%	7.50%	9.69%	20.39%
S&P 500 TR		1.98%	8.04%	10.81%	22.87%
S&P 1500		1.88%	7.30%	9.16%	19.99%
Russell 2000		2.63%	4.87%	3.62%	16.77%

Source: Ascendere Associates LLC

Stock prices adjusted for both dividends and splits

28 Stocks for December 2016

Buy and Hold Returns
11/30/2016 to 11/30/2017



Ascendere Associates LLC

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J. Stephen Castellano – founded Ascendere Associates LLC in 2009 to provide innovative equity research and financial modeling consulting services.

Among the services that Ascendere provides are: 1) detailed custom equity research analysis; 2) valuation scenario analysis studies; 3) supply /demand studies; 4) long and short stock idea generation; 5) portfolio feedback; 6) detailed fundamental financial modeling services; and 7) additional analytical consulting services. Additional information is available at jstephencastellano.tumblr.com.

Mr. Castellano has over 20 years of experience in equity research and related consulting positions. At PaineWebber, Warburg Dillon Read, and Credit Lyonnais Securities he developed fundamental equity valuation models and conducted in-depth research on the steel and telecom services industries. At Boston Private Value Investors, he built sophisticated screens for stock idea generation and also provided general fundamental equity research coverage. He received a MBA from the F. W. Olin School of Business at Babson College (2005) and a BA from Oberlin College (1993). He is a CFA Level 3 candidate, and is on the Board of Advisors of GovBrain, a political intelligence and government analytics company serving the hedge fund industry.

Mr. Castellano's sell side equity research experience includes consulting with investment banking teams on planned equity, debt, and M&A deals. Consulting projects have included the development of detailed corporate budget and valuation forecasts for clients of the risk management division of a global consulting company, xml-based financial models as well as marketing strategies for a financial data provider, equity research reports for a family office equity portfolio, supply/demand models for a telecom consulting firm, cash burn rate scenarios for a key stakeholder in an iconic food manufacturing company, a budget forecast model for a 250,000 bpd oil refining company, a budget forecast and valuation for a risk management software startup, and due diligence of a potential acquisition of a fast-growing fashion apparel boutique, among others.

Mr. Castellano's career history is highlighted below:

- Ascendere Associates, LLC (2009-Present)
- Boston Private Value Investors , Equity Research, Equity Research Analyst (2005-2009)
- Pyramid Research, Contract Consultant, Telecom Services (2002-2003)
- Credit Lyonnais Securities (USA), Equity Research, Telecom Services, Vice President (2000-2001)
- Warburg Dillon Read, Equity Research, Telecom Services, Research Associate (1999-2000)
- PaineWebber, Equity Research, Steel and Nonferrous Metals, Research Associate, Editor (1995-1999)