

Alpha Surprise

Screen for January

After a business review of available resources, BofA Global Research has determined to cease publishing Alpha Surprise following the publication slated for February 2024. We look forward to continuing to support our clients with our other publications.

ASM underperformed the S&P 500 index in December

The “Quantamental” Alpha Surprise Model (ASM)’s price return (+3.5%) underperformed the S&P 500 index (+4.4%) and an equal-weighted S&P 500 index (+6.8%) in December. On a total return basis, the model (+3.8%) lagged the S&P 500 Total Return index (+4.5%) and an equal-weighted S&P 500 index (+7.0%) last month.

Energy and Comm. Svcs. are most O/W sectors

The Alpha Surprise Model is the most overweight the Energy and Comm. Svcs. sectors. The model is the most underweight Info. Tech. and Industrials.

“Quantamental” model with attractive risk/return profile

The Alpha Surprise Model is a quantitative discipline applied to our fundamental research franchise – it screens for inexpensive, out-of-consensus stock ideas using our fundamental analysts’ earnings estimates.

Table 1: Alpha Surprise Model performance

As of 12/31/2023

	Price Return			Total Return		
	ASM	Eq. Wtd. S&P 500	S&P 500	ASM	Eq. Wtd. S&P 500	S&P 500
1M	3.5%	6.8%	4.4%	3.8%	7.0%	4.5%
3M	9.3%	11.6%	11.2%	10.1%	12.2%	11.7%
12M	4.8%	12.1%	24.2%	7.1%	14.4%	26.3%
YTD	4.8%	12.1%	24.2%	7.1%	14.4%	26.3%
3Yr	6.1%	24.4%	27.0%	12.7%	31.9%	33.1%
5Yr	35.8%	73.3%	90.3%	50.7%	92.0%	105.9%
10Yr	82.4%	121.0%	158.1%	124.6%	171.6%	209.2%
Since 4/01	432.3%	460.7%	311.4%	746.6%	773.1%	532.9%
Annualized						
3Yr	2.0%	7.6%	8.3%	4.1%	9.7%	10.0%
5Yr	6.3%	11.6%	13.7%	8.5%	13.9%	15.5%
10Yr	6.2%	8.3%	9.9%	8.4%	10.5%	12.0%
Since 4/01	7.6%	7.9%	6.4%	9.8%	10.0%	8.4%

Source: BofA US Equity & Quant Strategy

Note: The performance results are the results of a model; not the results of an actual advisory account. The performance results do not reflect transaction costs, tax withholdings or any investment advisory or custodial fees that would normally be associated with an investment advisory account. If such fees and costs were reflected the performance would be lower.

Disclaimer: The screen identified as Alpha Surprise Model above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This screen was not created to act as a benchmark.

Restated price performance and total return performance is not available prior to April 2001 due to the unavailability of certain data. The inception date of the model is January 1989.

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02 January 2024

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The “Alpha Surprise” Model screens for stocks that are undervalued according to our dividend discount model for which a BofA analyst has an earnings estimate that is significantly above consensus.

See Methodology for details.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

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Refer to important disclosures on page 10 to 11.

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Timestamp: 02 January 2024 04:01PM EST

Table 2: Top S&P 500 Companies by Alpha Surprise Model

As of 12/31/2023

Mo. In Screen	Company	Ticker	Sector	Alpha Surprise Score (1=Most Attractive)	Price 12/31/2023	S&P Quality Ranking
7	AMAZON.COM INC	AMZN	Consumer Discretionary	1.00	151.94	B
6	PROGRESSIVE CORP-OHIO	PGR	Financials	1.00	159.28	B+
3	WARNER BROS DISCOVERY INC	WBD	Communication Services	1.00	11.38	B-
4	3M CO	MMM	Industrials	1.50	109.32	A
3	ARCH CAPITAL GROUP LTD	ACGL	Financials	1.50	74.27	B
3	EQT CORP	EQT	Energy	1.50	38.66	B-
5	GILEAD SCIENCES INC	GILD	Health Care	1.50	81.01	B-
3	MERCK & CO	MRK	Health Care	1.50	109.02	B+
11	META PLATFORMS INC	META	Communication Services	1.50	353.96	B
2	AES CORP (THE)	AES	Utilities	1.75	19.25	B-
75	ALPHABET INC	GOOGL	Communication Services	1.75	139.69	B+
3	CME GROUP INC	CME	Financials	1.75	210.60	A-
10	COTERRA ENERGY INC	CTRA	Energy	1.75	25.52	B
4	DEVON ENERGY CORP	DVN	Energy	1.75	45.30	B-
New	DUKE ENERGY CORP	DUK	Utilities	1.75	97.04	B+
2	ENTERGY CORP	ETR	Utilities	1.75	101.19	B
4	EOG RESOURCES INC	EOG	Energy	1.75	120.95	B
4	EXXON MOBIL CORP	XOM	Energy	1.75	99.98	B
2	FIDELITY NATIONAL INFO SVCS	FIS	Financials	1.75	60.07	B-
2	GEN DIGITAL INC	GEN	Information Technology	1.75	22.82	B
New	HORMEL FOODS CORP	HRL	Consumer Staples	1.75	32.11	A
9	NETFLIX INC	NFLX	Communication Services	1.75	486.88	B+
3	T-MOBILE US INC	TMUS	Communication Services	1.75	160.33	
7	AFLAC INC	AFL	Financials	2.00	82.50	A-
3	AMERIPRISE FINANCIAL INC	AMP	Financials	2.00	379.83	A
New	ATMOS ENERGY CORP	ATO	Utilities	2.00	115.90	A
2	CBOE GLOBAL MARKETS INC	CBOE	Financials	2.00	178.56	B+
4	DIAMONDBACK ENERGY INC	FANG	Energy	2.00	155.08	B-
New	JOHNSON & JOHNSON	JNJ	Health Care	2.00	156.74	B+
13	LILLY (ELI) & CO	LLY	Health Care	2.00	582.92	A-
4	AIRBNB INC	ABNB	Consumer Discretionary	2.25	136.14	
New	AMERICAN WATER WORKS CO INC	AWK	Utilities	2.25	131.99	A
2	CHURCH & DWIGHT INC	CHD	Consumer Staples	2.25	94.56	A
2	CVS HEALTH CORP	CVS	Health Care	2.25	78.96	A-
3	DOMINO'S PIZZA INC	DPZ	Consumer Discretionary	2.25	412.23	A+
New	EQUITY RESIDENTIAL	EQR	Real Estate	2.25	61.16	B
New	LYONDELLBASELL INDUSTRIES NV	LYB	Materials	2.25	95.08	B+
New	NRG ENERGY INC	NRG	Utilities	2.25	51.70	B
New	PPL CORP	PPL	Utilities	2.25	27.10	B
3	BERKLEY (WR) CORP	WRB	Financials	2.50	70.72	B+
2	EVEREST GROUP LTD	EG	Financials	2.50	353.58	B-
2	HOLOGIC INC	HOLX	Health Care	2.50	71.45	C
14	HUNTINGTON INGALLS IND INC	HII	Industrials	2.50	259.64	A-
3	MOLSON COORS BEVERAGE CO	TAP	Consumer Staples	2.50	61.21	B-
3	UNITEDHEALTH GROUP INC	UNH	Health Care	2.50	526.47	A+
3	WELLTOWER INC	WELL	Real Estate	2.50	90.17	B
2	AIR PRODUCTS & CHEMICALS INC	APD	Materials	2.75	273.80	A
New	AMERICAN INTERNATIONAL GROUP	AIG	Financials	2.75	67.75	B-
2	BEST BUY CO INC	BBY	Consumer Discretionary	2.75	78.28	A-
5	CONOCOPHILLIPS	COP	Energy	2.75	116.07	B
3	DEXCOM INC	DXCM	Health Care	2.75	124.09	B-
2	GENUINE PARTSCO	GPC	Consumer Discretionary	2.75	138.50	A-
11	HOME DEPOT INC	HD	Consumer Discretionary	2.75	346.55	A+
2	HUNT (JB) TRANSPRT SVCS INC	JBHT	Industrials	2.75	199.74	A+
New	KIMCO REALTY CORP	KIM	Real Estate	2.75	21.31	B
3	LINDE PLC	LIN	Materials	2.75	410.71	
9	UNITED RENTALS INC	URI	Industrials	2.75	573.42	B+

Source: BofA US Equity & Quant Strategy

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Table 3: Alpha Surprise Additions & Deletions

As of 12/31/2023

Additions	Ticker	Mos. In Screen	Deletions	Ticker
AMERICAN INTERNATIONAL GROUP	AIG	1	AVALONBAY COMMUNITIES INC	AVB
AMERICAN WATER WORKS CO INC	AWK	1	BAXTER INTERNATIONAL INC	BAX
ATMOS ENERGY CORP	ATO	6	DARDEN RESTAURANTS INC	DRI
DUKE ENERGY CORP	DUK	2	EXELON CORP	EXC
EQUITY RESIDENTIAL	EQR	1	FLEETCOR TECHNOLOGIES INC	FLT
HORMEL FOODS CORP	HRL	3	GENERAL MILLS INC	GIS
JOHNSON & JOHNSON	JNJ	2	GENERAL MOTORS CO	GM
KIMCO REALTY CORP	KIM	2	KIMBERLY-CLARK CORP	KMB
NRG ENERGY INC	NRG	7	LOWE'S COS INC	LOW
PPL CORP	PPL	2	NISOURCE INC	NI
LYONDELLBASELL INDUSTRIES NV	LYB	2	JOHNSON CONTROLS INTL PLC	JCI

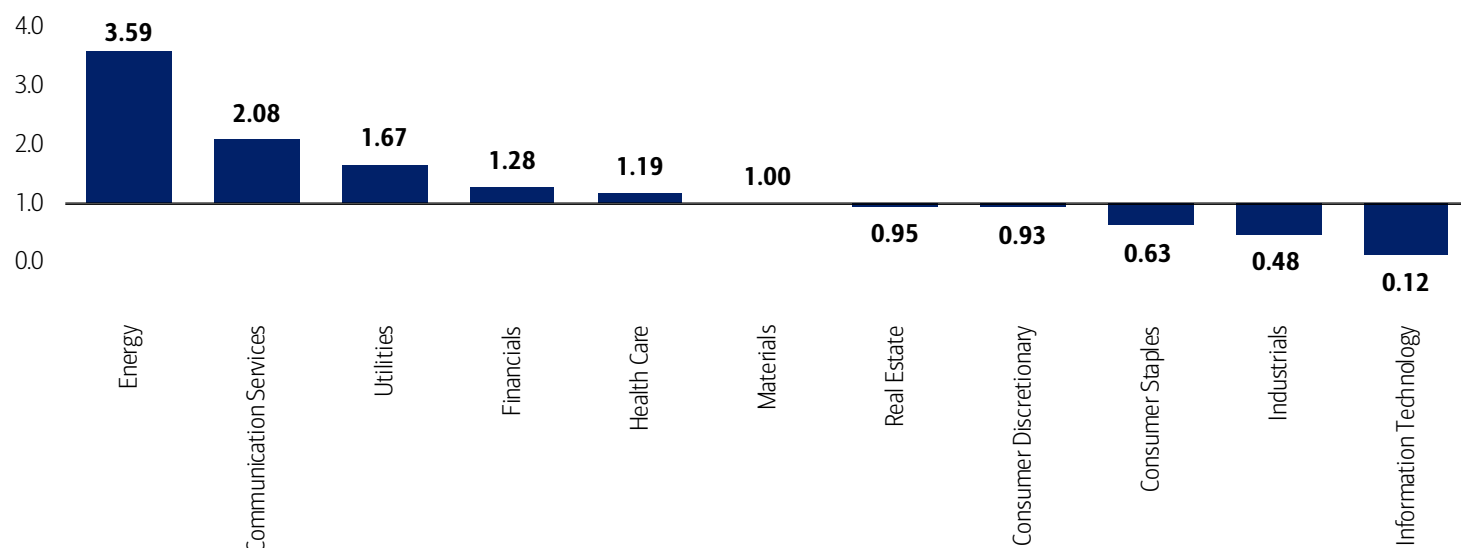
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Source: BofA US Equity & Quant Strategy



Chart 1: ASM is most overweight Energy and Comm. Svcs. and most underweight Tech and Industrials

Sector Weights (shown as percentage): Sector weights in the Alpha Surprise Model vs. S&P 500 companies that have ASM scores (note not all S&P 500 stocks have ASM scores—See “Screening Universe” in “Methodology”)

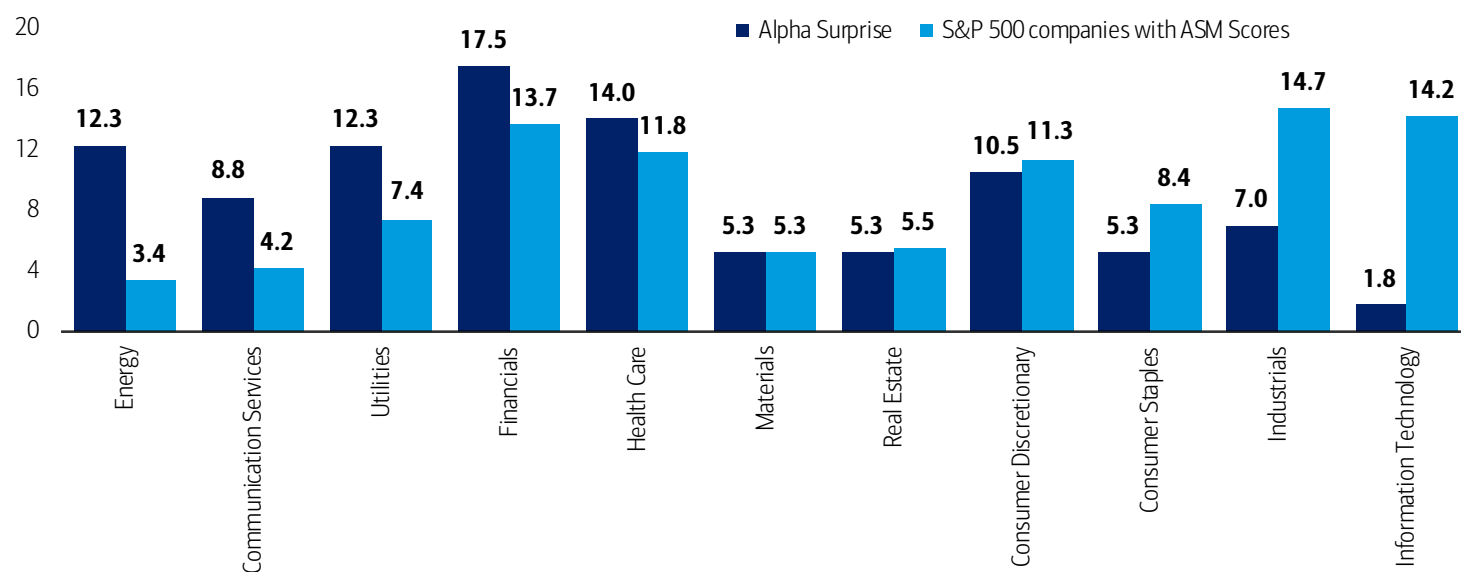


Source: BofA US Equity and Quant Strategy

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Chart 2: ASM is most overweight Energy and Comm. Svcs. and most underweight Tech and Industrials

Alpha Surprise Model vs. S&P 500 Companies that have ASM scores (this chart shows the ratio of the sector weights in the Alpha Surprise Model vs the sector weight in the S&P 500 for stocks that have ASM scores shown in Chart 1 above (Note not all S&P 500 stocks have ASM scores-- See “Screening Universe” in “Methodology”)

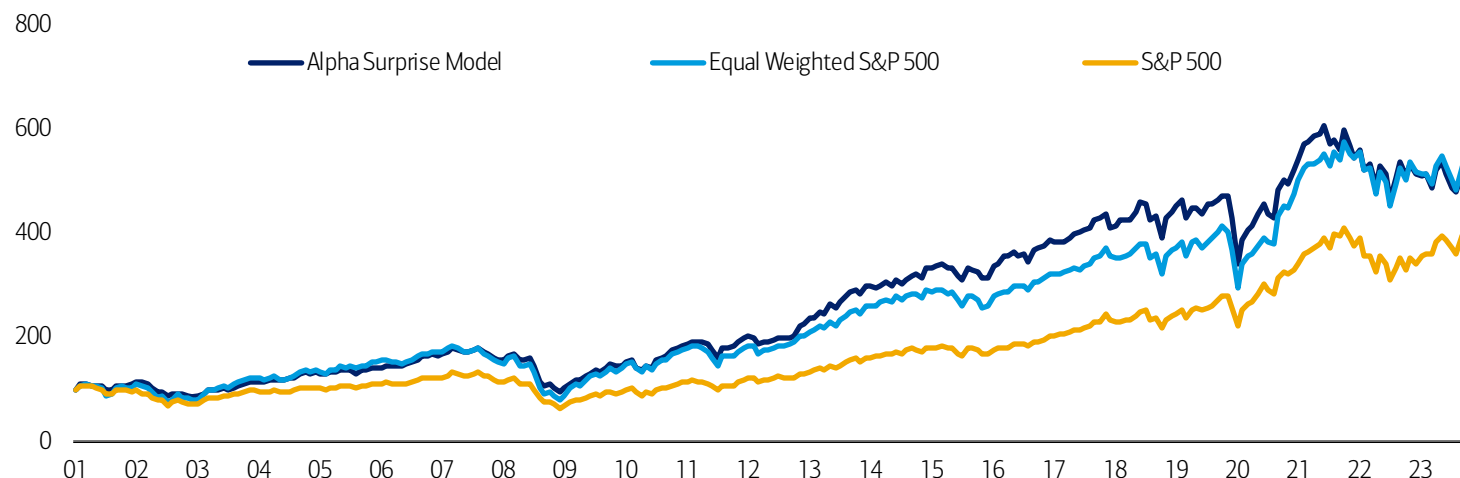


Source: BofA US Equity and Quant Strategy

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Chart 3: On a price return basis, Alpha Surprise Model outperformed the S&P 500 Index since 2001

Alpha Surprise Model performance vs Equal Weighted S&P 500 Index vs. the S&P 500 Index (Indexed to 100: April 2001 to present, Price Return)

**Source:** BofA US Equity & Quant Strategy

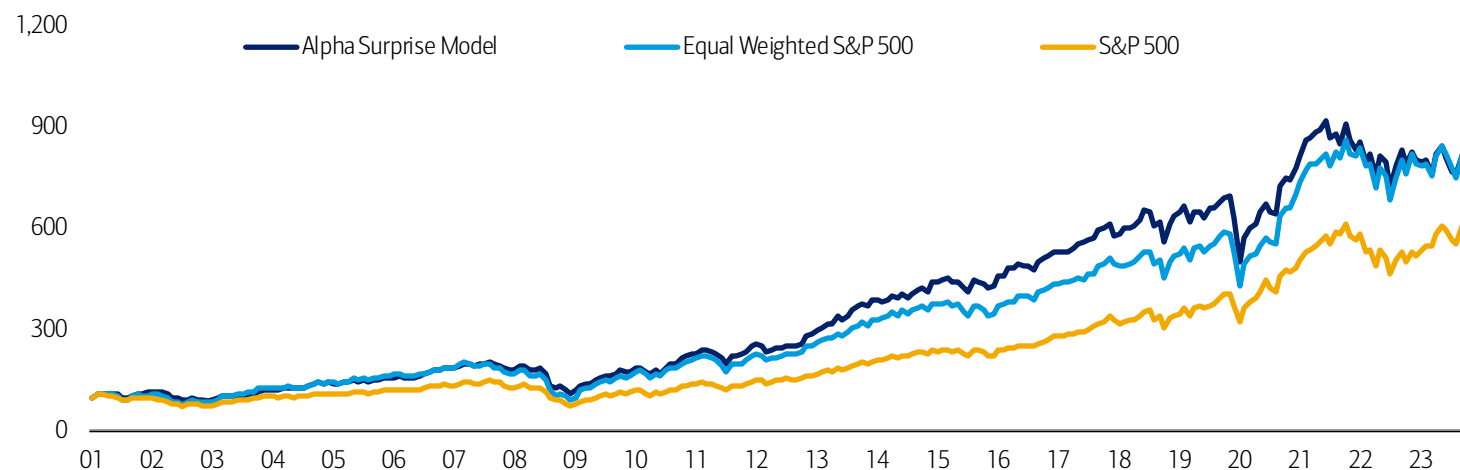
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Chart 4: On a total return basis, Alpha Surprise Model outperformed the S&P 500 Index since 2001

Alpha Surprise Model Performance vs Equal Weighted S&P 500 Index and vs. the S&P 500 index (Indexed to 100: April 2001 to present, Total Return)

**Source:** BofA US Equity & Quant Strategy

Note: The performance results are the results of a model; not the results of an actual advisory account. The performance results do not reflect transaction costs, tax withholdings or any investment advisory or custodial fees that would normally be associated with an investment advisory account. If such fees and costs were reflected the performance would be lower.

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Methodology

Each month we rank stocks based on scores from the Alpha Surprise model, as outlined in the model rank calculation example below, where 1 represents the highest ranking stocks (undervalued, but with optimistic BofA earnings estimate), and 10 represents the lowest ranking stocks. More detail on the specific models is included in the following sections.

The Alpha Surprise score is a 25%/75% weighted combination of the decile scores from two proprietary models, our Dividend Discount Model (the value or “alpha” portion of the model) and our BofA vs. Consensus Forecast Earnings Surprise Model (the growth or “surprise” portion of the model). A decile rank of 1 is most attractive, and a decile rank of 10 is least attractive. The methodologies of the two component models – (1) the Dividend Discount Model, and (2) the BofA vs. Consensus model are included in separate sections below.

Model rank calculation example

As an example, if a stock received a decile rank of 1 (highest ranking) in the Dividend Discount Model, but a decile rank of 10 (lowest ranking) in the BofA vs. Consensus Forecast Earnings Surprise Model, the Alpha Surprise model score would be 7.75, which is simply $0.25 \times 1 + 0.75 \times 10$.

In this report, we include: (1) the highest ranking stocks, based on this methodology, (2) the model’s *sector exposure*, which we measure as the sector weight within the Alpha Surprise model versus the sector weight in the S&P 500 ranked universe (S&P 500 stocks with ASM scores), and (3) the model’s *quality exposure*, which we measure as the percentage of higher quality (“B+ or Better” ranked) stocks within the Alpha Surprise model versus the percentage of higher quality stocks within the S&P 500 ranked universe (S&P 500 stocks with ASM scores). We use Standard & Poor’s common stock rankings.

Screening universe

BofA’s current coverage universe of the S&P 500 for which analysts also have estimates for earnings, dividends, long-term growth rates, dividend growth rates that are used in the BofA vs. Consensus model as well as the Dividend Discount Models. Stocks in the firm’s restricted list at the time of the month-end analysis are excluded from the analysis. Not all stocks within the S&P 500 index have an Alpha Surprise score.

Alpha Surprise Model screen results

To generate the screen, we select stocks with the most attractive (lowest) Alpha Surprise scores. Stocks with scores above 2.75 are not included in the screen. This has resulted historically in the number of stocks included in the ASM to range from 29 to 60 with a median of 49 stocks since April 2001.

BofA versus Consensus (Positive and Negative Earnings Surprise Models)

The BofA vs. Consensus Model is designed to identify stocks with significant variations between the annual earnings estimate made by BofA Fundamental Equity Research with that of the consensus.

We look for instances in which our analysts differ from consensus in a statistically significant manner. Moreover, we tend to place less value on the consensus view, since whatever recommendation the aggregate of evidence points to is likely to have already been priced into the market.

The formula for the model is:

$$\text{Surprise} = \frac{(\text{BofA Estimate} - \text{I/B/E/S Mean Estimate})}{\text{Standard Deviation of I/B/E/S Estimates}}$$

The results from the above formula are then used to rank the universe into deciles, where 1 represents companies where BofA analysts are most optimistic about earnings while 10 represents companies where BofA analysts are most pessimistic about earnings. If the projected Surprise is greater than 13 standard deviations, the stock is excluded as an outlier.

Dividend Discount Model

Our three-stage (Near Term, Transition to Maturity, and Maturity or Steady State) Dividend Discount Model (DDM) computes the discount rate that equates the current stock price to the projected stream of dividends. Data from our analysts' estimates provide the information to construct this stream. This discount rate is the "implied" or "expected" return. Since the DDM solves for the implied rate of return based on today's stock price rather than computing the discount rate as the risk-free rate plus a risk premium, the implied return must be risk-adjusted. We use the Capital Asset Pricing Model to risk-adjust the implied returns, using the 5-Year Treasury Note Yield as a proxy for the risk-free rate.

The DDM Alpha of a stock is the difference between the stock's DDM-calculated discount rate and the required rate of return calculated for each stock using a plain-vanilla Capital Asset Pricing Model.

The DDM Alpha are then used to rank the universe into deciles, where 1 represents stocks that are most undervalued according to the DDM (or have the highest alpha) while 10 represents stocks that are most overvalued according to the DDM (or have the lowest or most negative alpha).

Sector Weight

The sector weight charts depict the weight of each of the eleven GICS sectors in the Alpha Surprise Model screen, measured against the weight of the sector in the universe (S&P 500 stocks with ASM scores). The sector weights in both the screen and the universe are calculated assuming stocks have equal weights in the screen.

Performance Calculation

Additions, deletions and rebalancing of the Alpha Surprise Model (ASM) are priced as of the close of the market on the business day following the date that the change is published in a BofA research report, which is published after the close of the first business day of the month. (Please see [performance recalculation](#) for more detail of changes made in September 2017).

Rebalancing calculations take place at the market close on the 2nd business day of the month. Performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The total return calculation assumes dividends are continuously reinvested into the dividend paying security. The performance is computed on the basis of equal-weighted price return and total return. The price return performance is presented relative to the benchmark which consists of the equal weighted price performance of stocks in the S&P 500 as of the last business day of each month. Price performance is also presented relative to the market capitalization-weighted price performance S&P 500 benchmark. The total return performance is presented relative to the benchmark which consists of the equal weighted total return performance of stocks in the S&P 500 (assumes dividends are reinvested) as of the last business day of each month. Total return performance is also presented relative to the market capitalization-weighted total return performance S&P 500 benchmark (assumes dividends are reinvested).



The performance results do not reflect transaction costs, tax withholdings or any investment advisory fees. The quantitative strategy followed here may differ from the S&P 500 in that it is significantly less diversified, and, as such, the performance is more exposed to specific stock or sector results. Therefore investors following the strategy may experience greater volatility in their returns.

The performance results of individuals following the strategy presented here will differ from the performance contained in this report for a variety of reasons, including differences related to incurring transaction costs and/or investment advisory fees, whether dividends are reinvested, as well as differences in the time and price that securities were acquired and disposed of, and differences in the weighting of such securities.

Advances and declines

Advances and declines are based on the price returns of each stock for each relevant period. **See “Performance Calculation” under “Methodology” for further details.**

Table 4: Advance and Declines

Advances and declines are based on the price returns

	Adv.	Decl.
1M	38	19
3M	111	45
12M	300	274
YTD	300	274
3Yr	843	817
5Yr	1559	1299
10Yr	3107	2615

Source: BofA US Equity & Quant Strategy

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Table 5: Performance: 10-Year Historical Performance

Price and total return

Year	Price Return			Total Return		
	Alpha Surprise Model	Equal Weighted S&P 500	S&P 500	Alpha Surprise Model	Equal Weighted S&P 500	S&P 500
2013	45.1%	33.9%	29.6%	47.4%	36.5%	32.4%
2014	9.6%	12.2%	11.4%	11.8%	14.3%	13.7%
2015	1.6%	-4.3%	-0.7%	3.8%	-2.0%	1.4%
2016	14.1%	12.8%	9.5%	16.6%	15.2%	12.0%
2017	15.7%	16.3%	19.4%	18.0%	18.6%	21.7%
2018	-8.7%	-9.5%	-6.2%	-6.7%	-7.7%	-4.4%
2019	20.6%	27.4%	28.9%	23.3%	30.1%	31.5%
2020	6.1%	9.4%	16.3%	8.4%	11.9%	17.7%
2021	19.1%	27.6%	26.9%	21.4%	29.8%	28.7%
2022	-15.0%	-13.0%	-19.4%	-13.3%	-11.2%	-18.1%
2023	4.8%	12.1%	24.2%	7.1%	14.4%	26.3%

Source: BofA US Equity & Quant Strategy

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Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.



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