

IHA Consultant's Investment Analytics Difference

IHA CONSULTANTS INC. | 174 Grande Meadow Way, Cary NC 27513 (919) 260-3291
www.ihacconsultants.com | <https://devihacluster.com:7443/stockanalytics>

IHA Consultant's comprehensive U.S. Equities capabilities are designed to meet the challenges of the current investment environment

Today's investor landscape

Investors should consider casting a wider net to uncover opportunity and deliver returns

Investor demand for return, liquidity and lower volatility makes timely access to stock return analytics crucial

With diversification becoming increasingly vital, the way you structure your portfolio can matter as much as the securities in it

Deep expertise and analytical resources are increasingly instrumental given the amount and complexity of data that drives today's markets

IHA Consultant's advantage

Daily identification of positive alpha stocks – uncover hidden opportunities.

Unique Opportunities

The investment analytic software allows us to differentiate between stable and unstable volatility epochs

True Signal

Portfolios are assembled using dynamic diversification of positive alpha stocks to meet the specific needs of our clients

Dynamic Diversification

IHA Consultant's unique integrative technology and risk analytics help put investment and market insights at the user's the fingertips

Advanced Technology



Positive alpha, dynamic diversification with downside risk mitigation

IHA Consultant's dynamic, optimal U.S. equity strategy is designed to:

Generate consistent, positive risk-adjusted U.S. equity returns (ETF(s), stocks, mutual fund(s)) across all market sectors.

Retain diversification by selecting 'short-run positive alpha U.S. equities' investments across sectors.

Downside protection through daily updates – short-run range & long-run forecasts

Next trade-day range prediction (short-run) and long-run forecast serve as early warning of downside loss

Daily identification of positive alpha U.S. equities

Analytical process aims to **capture short-run gains and re-invest for compounding effect** by discriminating between stable and non-stable volatility epochs with contemporaneous correlation.

Dynamic diversification within positive short-run alpha and lower risk

Dynamically diversified portfolio of short-run positive alpha U.S. equities across sectors



Process integrates macro, sector and security selection

Analytic process employs best ideas across IHA Consultant's analytic platform to:

- Establish the macro-economic investment regime
- Budget risk to the highest quality alpha sources that can provide diversified risk-adjusted returns

Portfolio Management

Daily investment and risk dashboard review helps the user monitor and understand risk/reward trade-offs

Regime identification

Analyze level and trajectory of U.S. economic growth and form macro-economic view

- Examine U.S. growth, inflation, and implications on economic policy
- Identify regime associated with market conditions, as well as pace and direction of regime changes
- Build thesis from fundamental research across the US equity sectors

Asset allocation

Determine asset allocation based on economic regime and expected risk-adjusted returns

- Identify which U.S. sectors perform well in current and historical regime
- Optimally allocate risk to sector based on analytics

Security selection

Sector risk selection of specific U.S. equities

- Identify bottom-up opportunities based on positive alpha analytics and volatility discrimination

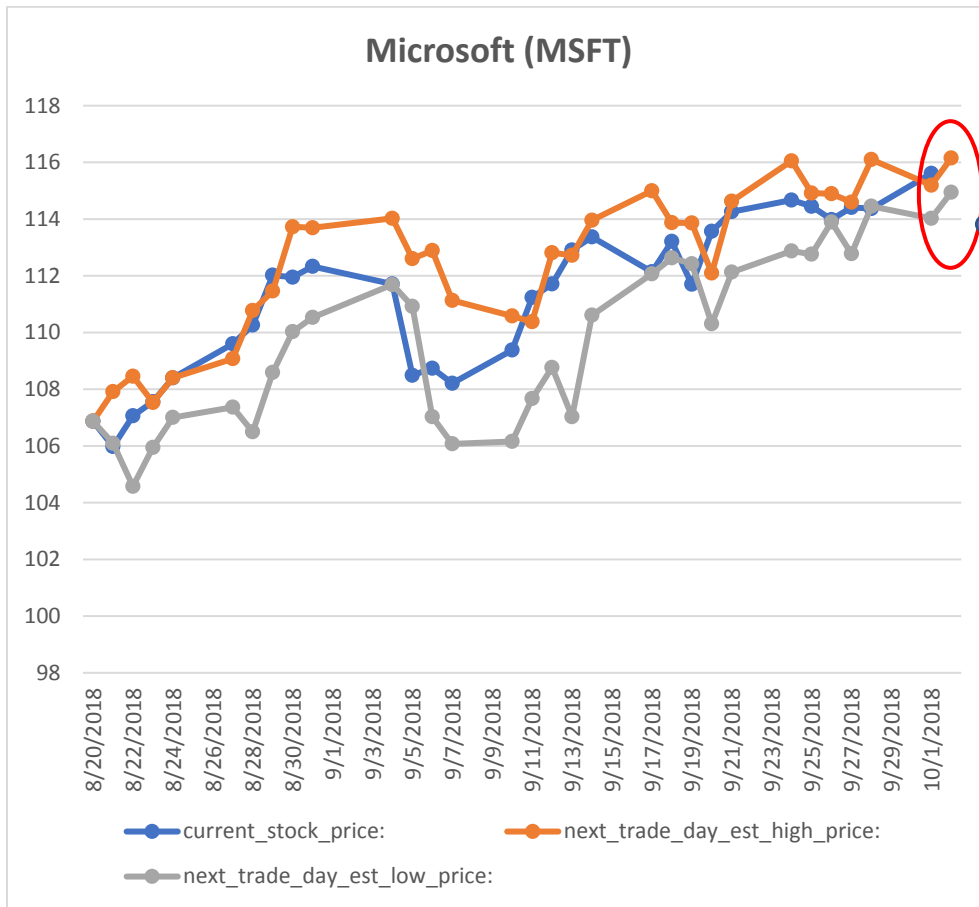
Risk Management

Leverage IHA Consultant's proprietary system for risk and scenario analysis, attribution, and hedging



Available next trade-day metrics for 8,300 U.S. equities (ETF(s), Mutual Funds, Stocks) across all sectors:

- a) early warning of downside market correction loss warning(s) – short-run and long-run
- b) trade range prediction
- c) company specific news event effects
- d) macro-economic effects and forecast



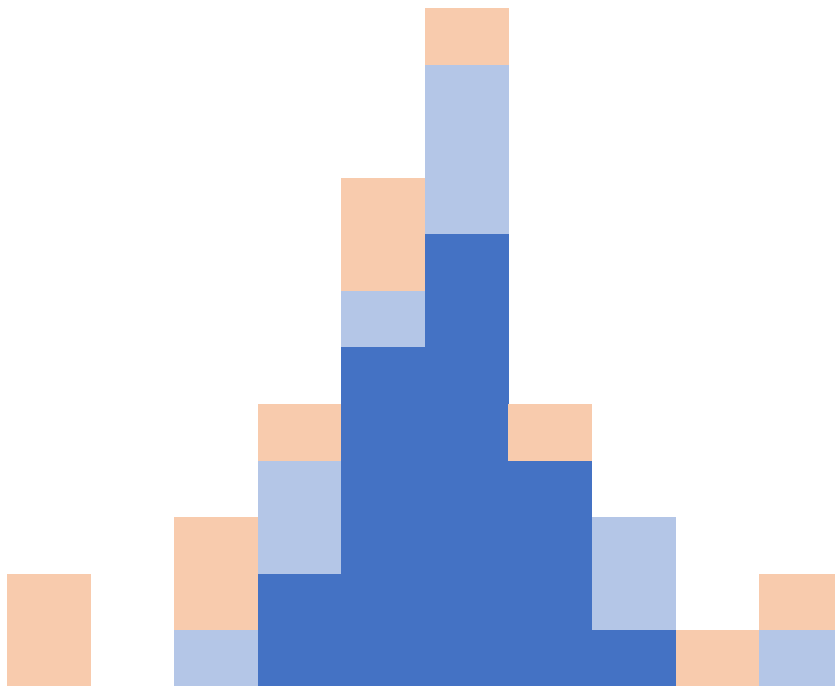
Next trade-day est. range:
 [\$114.33, \$ 116.10]
 Long-run: stable upward trend
 Accuracy: 95%+



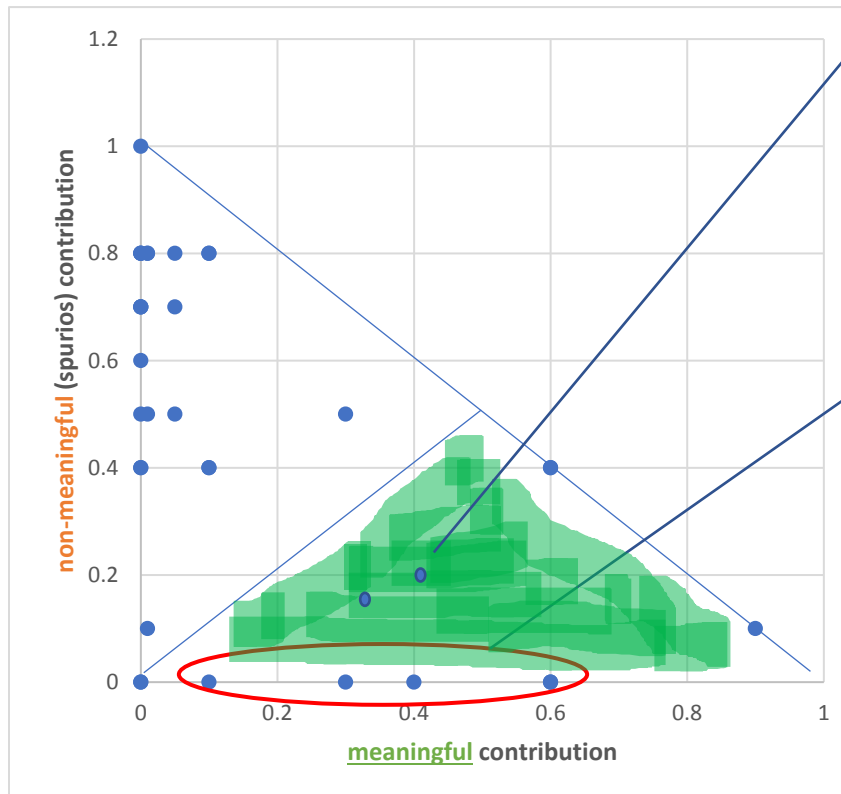
Discriminating between stable and non-stable volatility effects – true signal contribution (stable volatility) vs false signal contribution (unstable volatility)

Legend:

- constant core volatility
- temporary additional **stable** volatility
- temporary additional **unstable** volatility



Partitioning between meaningful correlation contribution and non-meaningful (spurious) correlation contribution to signal



Set of points (green): true signal contribution occurs much less frequently

Set of points:
True optimal contribution to signal



SELL SIGNAL (blue)-signal above average with prior series STARTING TO DECREASE or DECREASING and /or RED SIGNAL change down.

CONFIRMING SIGNAL (blue)-signal above average with prior series INCREASING

SELL SIGNAL (blue)-signal above average with prior series STARTING TO DECREASE or DECREASING and /or RED SIGNAL change down.

CONFIRMING SIGNAL (blue)-signal above average with prior series DECREASING

BUY SIGNAL (blue)-signal above average with prior series INCREASING

BUY SIGNAL (blue)-signal above average with prior series INCREASING

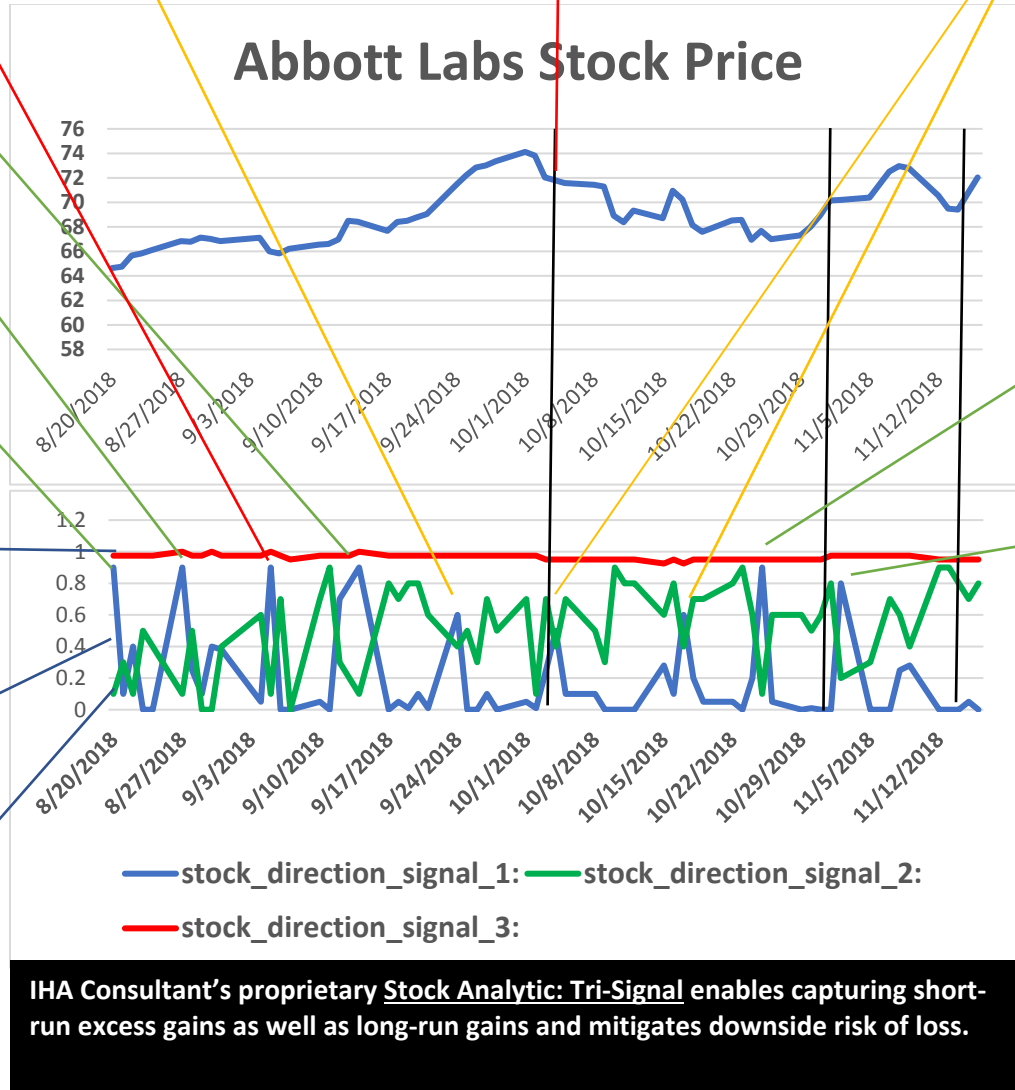
BUY SIGNAL (blue)-signal above average with prior series INCREASING

Stock Analytic: Tri-Signal

SIGNAL_3: (TRUE SIGNAL) AFFINE TRANSFORMATION (red)
- whole graph move up/down (analogous to moon effect on tide)

SIGNAL_1: (TRUE SIGNAL) (blue) - underlying market true perception of value

SIGNAL_2: (TRANSIENT NOISE) (green) - local wave short-run signal - has most volatility, no persistence or little persistence (analogous to foam on a sea wave)



BUY SIGNAL (blue)-signal above average with prior series DECREASING (inflection point)

BUY SIGNAL (blue)-signal above average with prior series INCREASING and RED SIGNAL change to less negative



Partitioning between meaningful correlation contribution and non-meaningful (spurious) correlation contribution to signal – short-run optimal buy signal

Stock_sym	Company_Sector	Exchange	Prior_Clos	Est. Lower	Short_run	Est. Upper	Short_run	Long_run	Trade_dat	9/4/2018	9/5/2018	9/6/2018	9/7/2018	9/10/2018	9/11/2018	9/12/2018	9/13/2018	9/14/2018	9/17/2018	9/18/2018	9/19/2018	9/20/2018	9/21/2018	9/24/2018	9/25/2018	9/26/2018	9/27/2018	9/28/2018	10/1/2018	10/2/2018	10/3/2018	
A	Agilent Te	Healthcar	New York	72.12	71.14708	0.98651	72.5554	1.006037	1.002137	short_run	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
AA	Alcoa Cor	Basic Mat	New York	42.89	40.04912	0.933763	44.05455	1.027152	0.980394	short_run	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
AABA	Altaba Inc	Financial	Nasdaq Gl	67.25	66.52874	0.989275	67.45378	1.00303	0.996584	short_run	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AAC	AAC Holdi	Healthcar	New York	7.32	6.811165	0.930487	7.274298	0.993757	0.993462	short_run	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
AADR	AdvisorSh	Healthcar	NYSE Arca	53.38	52.7214	0.987662	53.67792	1.005581	1.003044	short_run	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
AAL	American	Industrial	Nasdaq Gl	38.8	37.53164	0.96731	40.68169	1.048497	1.012108	short_run	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
AAMC	Altisource	Financial	NYSE Ame	59	55.66599	0.943491	58.61875	0.993538	0.971434	short_run	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AAME	Atlantic A	Financial	SNASDAQ	2.6092	2.459867	0.942767	2.601807	0.997167	1.013833	short_run	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AAN	Aaron's In	Industrial	New York	54.53	54.68456	1.002834	55.35831	1.01519	1.006804	short_run	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AAOI	Applied O	Technology	NASDAQ	24.91	22.90714	0.919596	25.7643	1.034295	0.918411	short_run	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Partitioning between meaningful correlation contribution and non-meaningful (spurious) correlation contribution to signal – long-run optimal buy signal

Stock_sym	Company_Sector	Exchange	Prior_Clos	Est. Lower	Short_run	Est. Upper	Short_run	Long_run	Trade_dat	9/4/2018	9/5/2018	9/6/2018	9/7/2018	9/10/2018	9/11/2018	9/12/2018	9/13/2018	9/14/2018	9/17/2018	9/18/2018	9/19/2018	9/20/2018	9/21/2018	9/24/2018	9/25/2018	9/26/2018	9/27/2018	9/28/2018	10/1/2018	10/2/2018	10/3/2018	
A	Agilent Te	Healthcar	New York	72.12	71.14708	0.98651	72.5554	1.006037	1.002137	long_run	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	
AA	Alcoa Cor	Basic Mat	New York	42.89	40.04912	0.933763	44.05455	1.027152	0.980394	long_run	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	1	1	1	
AABA	Altaba Inc	Financial	Nasdaq Gl	67.25	66.52874	0.989275	67.45378	1.00303	0.996584	long_run	0	0	1	1	0	1	1	1	0	1	0	1	1	0	0	1	0	1	1	0	0	
AAC	AAC Holdi	Healthcar	New York	7.32	6.811165	0.930487	7.274298	0.993757	0.993462	long_run	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	1	0	0	
AADR	AdvisorSh	Healthcar	NYSE Arca	53.38	52.7214	0.987662	53.67792	1.005581	1.003044	long_run	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	0	1	0	0	0	0	
AAL	American	Industrial	Nasdaq Gl	38.8	37.53164	0.96731	40.68169	1.048497	1.012108	long_run	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	
AAMC	Altisource	Financial	NYSE Ame	59	55.66599	0.943491	58.61875	0.993538	0.971434	long_run	0	1	1	0	0	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	
AAME	Atlantic A	Financial	SNASDAQ	2.6092	2.459867	0.942767	2.601807	0.997167	1.013833	long_run	1	0	1	1	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	
AAN	Aaron's In	Industrial	New York	54.53	54.68456	1.002834	55.35831	1.01519	1.006804	long_run	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
AAOI	Applied O	Technology	NASDAQ	24.91	22.90714	0.919596	25.7643	1.034295	0.918411	long_run	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0

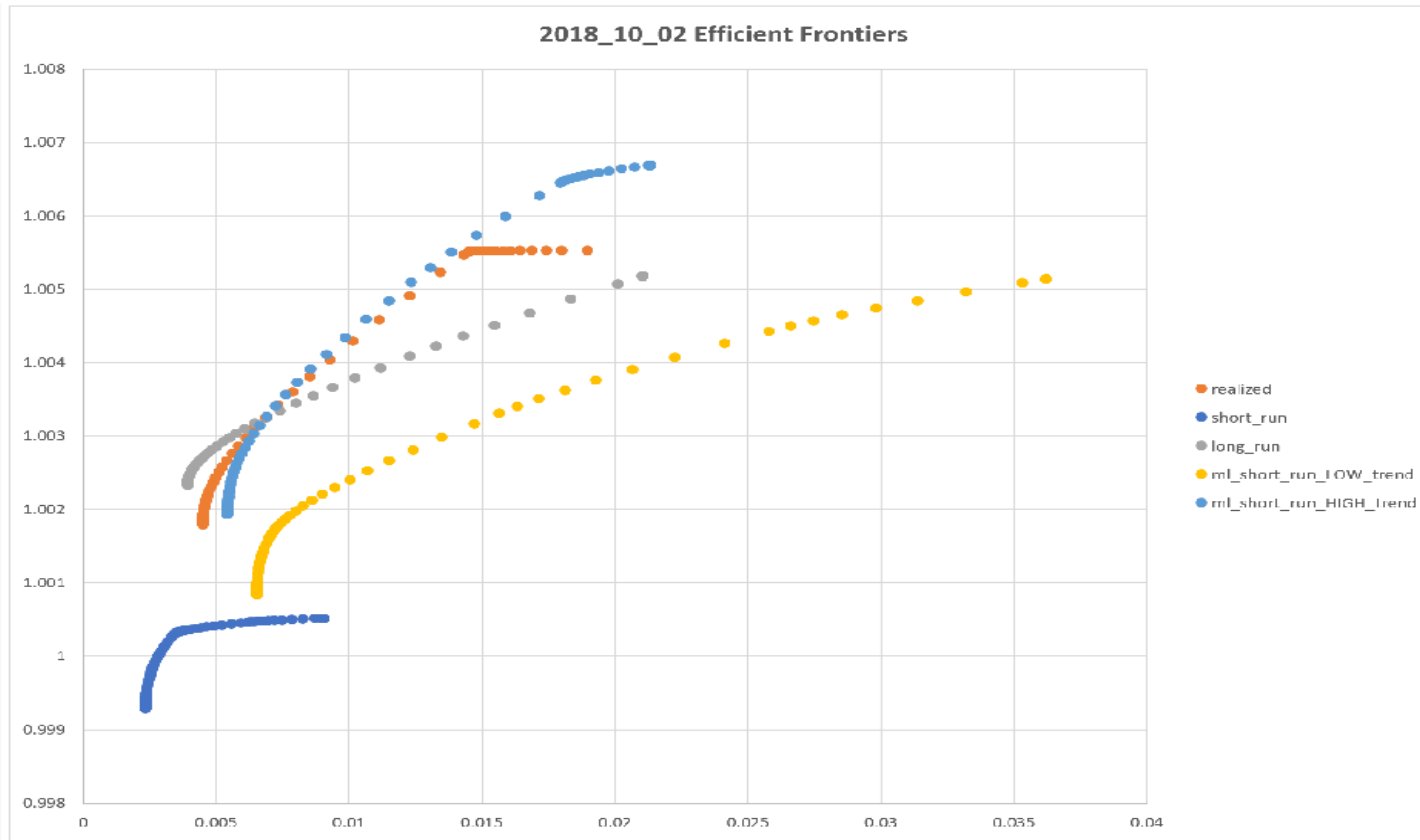


8,300 U.S. Equities (ETFs, Mutual funds, Stocks) to identify positive alpha stocks which exist for short durations as little as 1 trade-day and for long-run durations – current optimal trade-day report:

Stock_symbol:	Company_name:	Sector:	Exchange:	Prior_Close_Price	Est. Lower_Bound_Price:	Short_run_est._Low_return:	Est. Upper_Bound_Price:	Short_run_est._High_return:	Short_run_buy_date_ind:	Long_run_est._return:	Long_run_buy_date_ind:
A	Agilent Te	Healthcar	New York St	72.120003	71.14707864	0.986509646	72.55539853	1.006037098	1	1.002136817	1
AA	Alcoa Cor	Basic Mat	New York St	42.889999	40.04911537	0.933763495	44.05455161	1.027152078	1	0.980394489	1
AABA	Altaba Inc	Financial	Nasdaq Glob	67.25	66.52873969	0.98927494	67.45378105	1.003030202	0	0.996583904	0
AAC	AAC Holdi	Healthcar	New York St	7.32	6.811164602	0.930486968	7.274298105	0.993756572	0	0.993461853	0
AADR	AdvisorSh	Healthcar	NYSE Arca	53.380001	52.72139621	0.987661956	53.67792205	1.005581136	0	1.00304439	0
AAL	American	Industrial	Nasdaq Glob	38.799999	37.53163663	0.967310247	40.68169274	1.048497263	0	1.012108272	0
AAMC	Altisource	Financial	NYSE Americ	59	55.66599423	0.943491428	58.61875484	0.993538218	0	0.971433975	0
AAME	Atlantic Ar	Financial	NASDAQ Glc	2.6092	2.459867487	0.942766935	2.601807142	0.997166619	0	1.013832803	0
AAN	Aaron's In	Industrial	New York St	54.529999	54.68455536	1.002834336	55.35831434	1.015190085	0	1.006803933	0
AAOI	Applied O	Technolog	NASDAQ Glc	24.91	22.90714405	0.919596309	25.76430082	1.034295497	0	0.918411192	0



There is more than just a single efficient frontier and they each transform over time in a different manner.



Why IHA Consultant's Investment Analytics?

Downside loss early prediction and mitigation

Early warning of estimated short-run and long-run devaluation provides loss mitigation.

Analytics

Investment analytics generate usable next trade-day short-run and long-run information. Next trade-day trade range is 95% accurate.

Results

Capturing short-run excess return and compounding generates higher returns

Performance

Analytic reports are available each trade-day prior to market open eastern standard time.

Legal Disclosures:

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