I-SYSTEM

NAVIGATE MARKET TRENDS PROFITABLY, WITH CONFIDENCE AND PEACE OF MIND!

*What's needed is a sound intellectual framework for making decisions and the ability to keep emotions from corroding that framework – **Warren Buffett***

Image: deck of the 1960 replica of the SS Bounty. Image credit: Bounty's Facebook page

For decades, commodity trading advisors (CTAs) have used systematic trend following as one of the best strategies in active investment trading. Institutions like Nomura, JPMorgan and Rabobank pay close attention to CTAs. Their analysts have found that **understanding CTA strategies "can provide a strong edge in today's highly systematized markets,"** (Nomura) and that and that **"CTAs have long been key in understanding price action in commodities"** (Rabobank). Indeed, systematic trend following can provide powerful market guidance, helping companies to capture value from trading, hedging and investment management.

We've worked for over 20 years to create, refine and test the best possible trend following model, following the highest standards in research and development and strictly adhering to best practices in software engineering. The result of our efforts is I-System, a dual neural network capable of deploying a virtually unlimited number of intelligent trading strategies in hundreds of global markets through guided machine learning.

Over the years, I-System has proven supremely reliable as well as effective. Since 2003 it has functioned continuously with zero code tinkering, alterations, interruptions or maintenance issues. Since the start of our track record in 2007 it has consistently outperformed the relevant strategy benchmarks, including world's top ranked, Blue Chip CTA funds (2007-2013, audited by KPMG).

As global markets enter a time of deepening uncertainty, corporate hedgers, traders and investors must be able to rely on effective trading strategies that can reliably capture value from market trends as they unfold.

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Uncertainty: the ultimate challenge in trading and investing

Forecasting is the most complex, interactive, and highly nonlinear problem that had ever been conceived of.

John von Neumann

In January 2019 the Wall Street Journal polled a group of prominent market analysts, asking them to predict the yields on U.S. 10-year Treasury Notes for mid-year 2019 and the year-end. At the time, the yield was around 2.65% and most experts expected it to rise through the year. Their predictions are illustrated in the chart below, compared to the actual change in yield:

Sources: Wall Street Journal Survey of Economists; Tulett Prebon
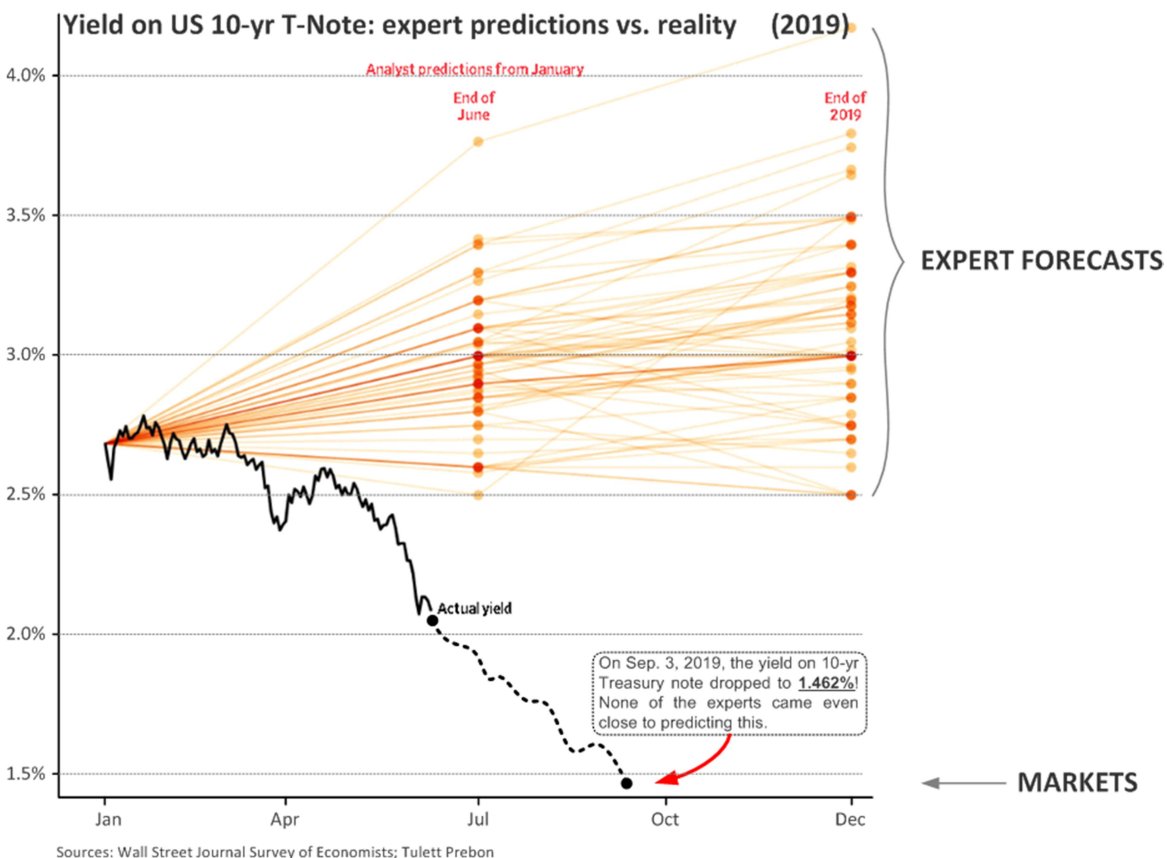
While analyst forecasts ranged from 2.5% to 4.2%, by September the yields fell below 1.5% and remained under 2% for the rest of the year. None of the experts came even close to predicting this outcome. This experience is an example of the pervasive problem in business and investing: uncertainty.

Mastering uncertainty with the I-System

The ability to forecast future asset prices would be immensely valuable. But in spite of extraordinary resources expended to achieve this, any consistent success in predicting the future has remained beyond reach. But while predicting the future with any degree of reliability remains impossible, a solution to the problem of uncertainty is possible and we have created one. It is the I-System, the subject of this document. For example, while the experts polled by Wall Street Journal failed to predict the yields of 10-year T-Notes, we actually traded 10-yr T-Note futures (TY) during this period. Our performance is illustrated in the chart below:
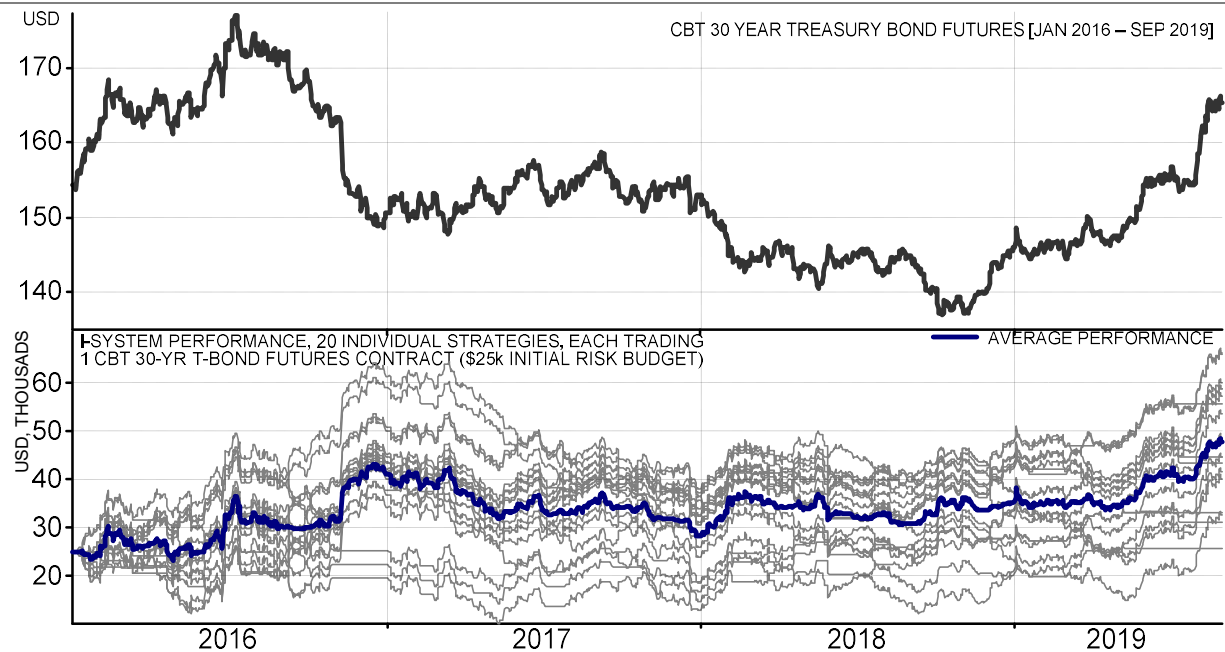

The top of the chart shows the price of TY. The curve below it conveys our exposure to TY, ranging from 100% long to 100% short. The bottom of the chart shows the average and individual performances of 22 I-System trading strategies from 2016 through September 2019.
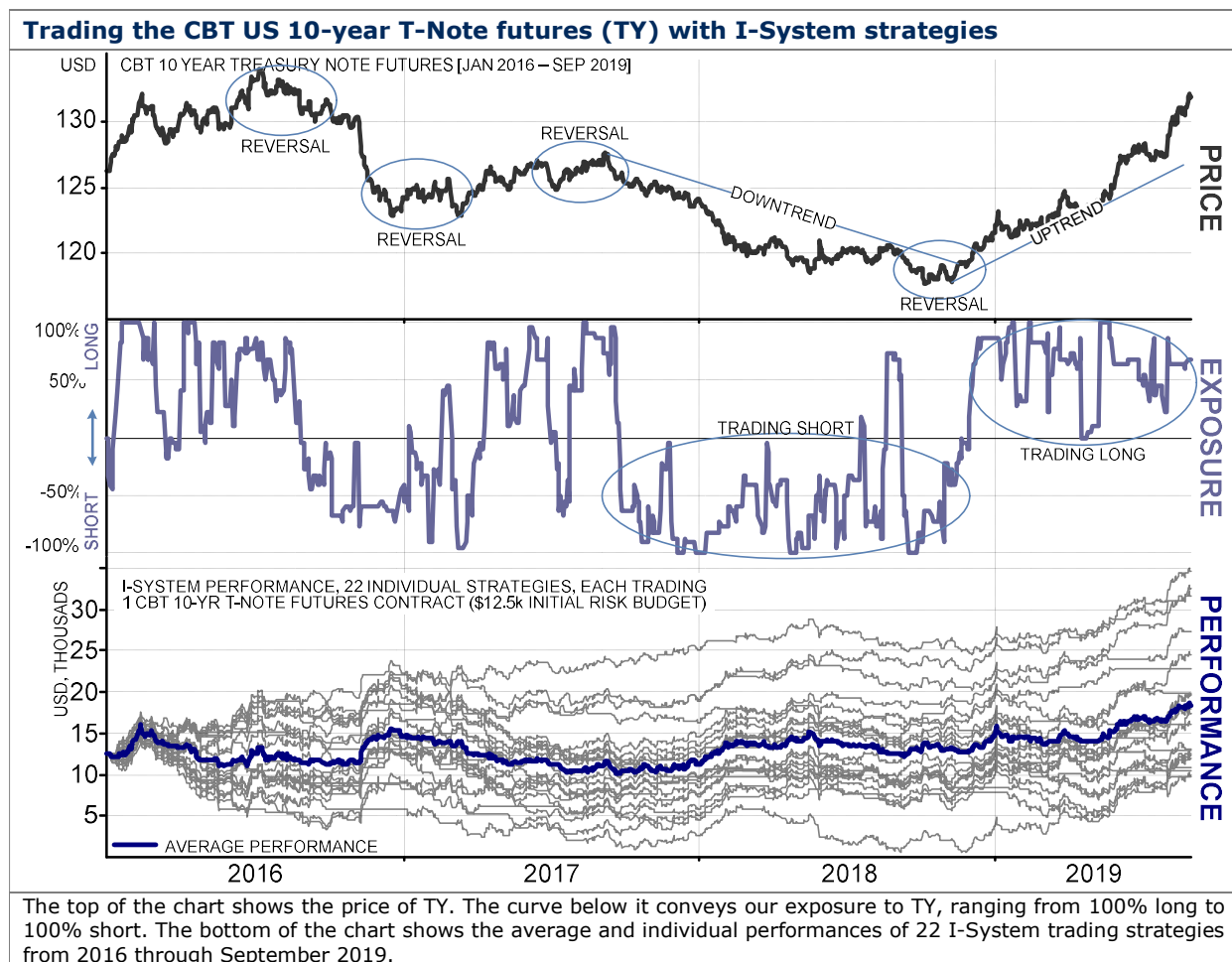
How did we 'know'?

As the above chart shows, we traded TY on the short side starting in Q4 2017, then in October and November 2018 we gradually reversed to the long side and remained long through Sep. 2019, generating strong positive performance since mid-2017.

To achieve this, we did not need to know anything at all about the economic conditions affecting the US treasuries and interest rates, about central bank or government policies, GDP, employment, inflation, or any other factor. Simply, we traded the TY along with the prevailing market trends.
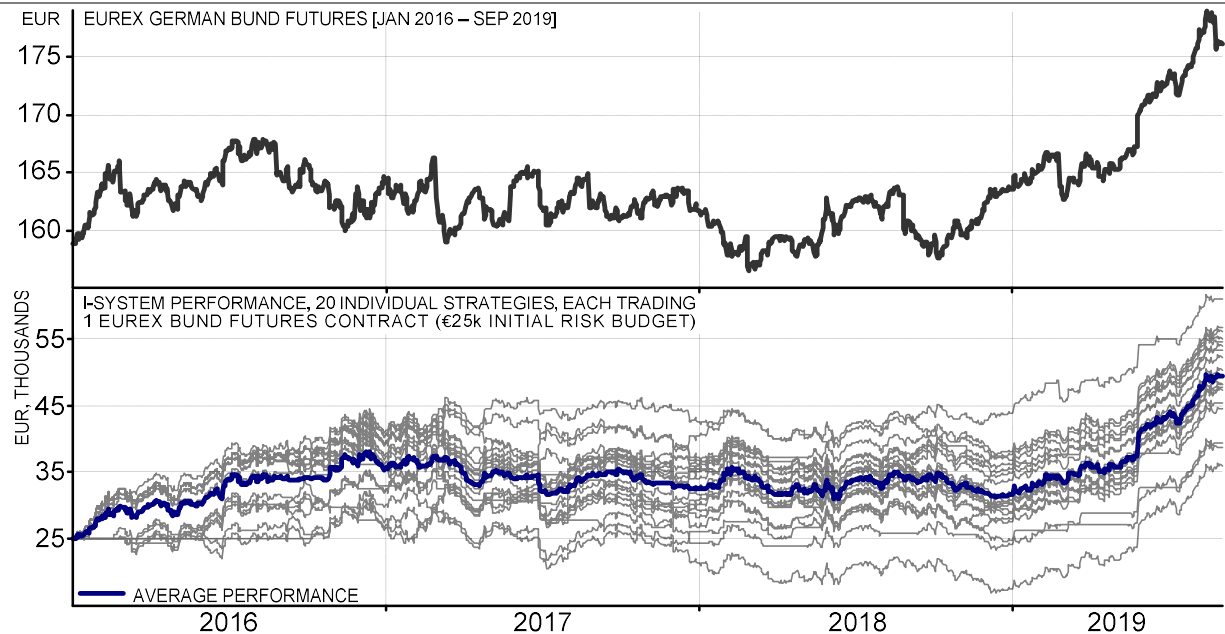
We were able to do this by using a set of intelligent I-System trend following strategies. In this same way we also traded the 30-year Treasury Bond and the German Bund, achieving very similar results:

I-System performance in CBT 30-yr US Treasury Bond futures

CBT 30 YEAR TREASURY BOND FUTURES [JAN 2016 – SEP 2019]

I-SYSTEM PERFORMANCE, 20 INDIVIDUAL STRATEGIES, EACH TRADING
1 CBT 30-YR T-BOND FUTURES CONTRACT ($25k INITIAL RISK BUDGET)

AVERAGE PERFORMANCE

We also successfully navigated the trends in 30-yr US T-Bond using 20 I-System strategies

I-System performance in EUREX German Bund futures

EUREX GERMAN BUND FUTURES [JAN 2016 – SEP 2019]

I-SYSTEM PERFORMANCE, 20 INDIVIDUAL STRATEGIES, EACH TRADING
1 EUREX BUND FUTURES CONTRACT (€25k INITIAL RISK BUDGET)

AVERAGE PERFORMANCE

After three years of essentially sideways trading, German bund also broke into a major trend, allowing our strategies to break new performance peaks.

I-System strategies are based on the premise that markets move in trends.

Markets move in trends

There are three avenues of opportunity: events, trends and conditions.

Sun Tzu, the Art of War

In the short term, market price fluctuations appear to be driven by data and news events. Almost invariably however, large-scale price events unfold as trends that can span many months and even years.
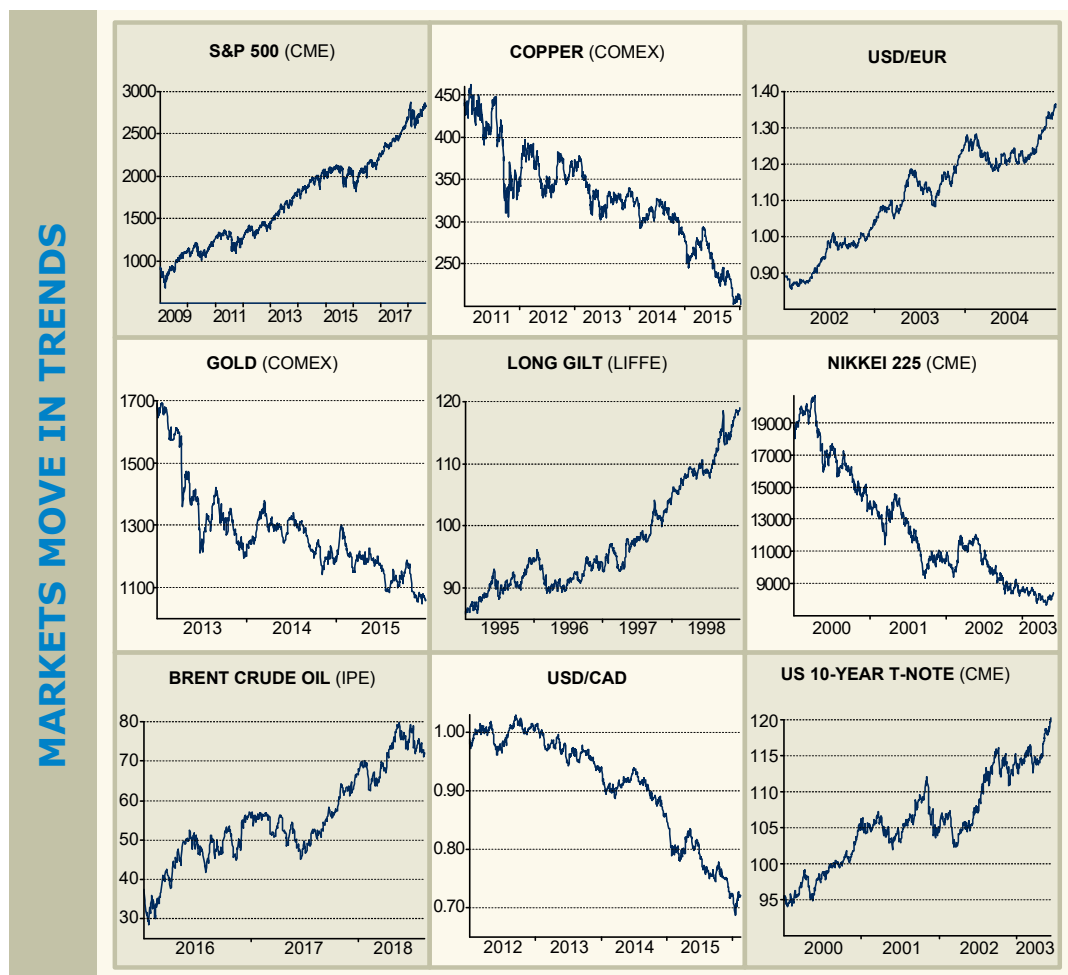
Trends provide the opportunity for us to capture value from price fluctuations. The most effective way of achieving this is by using systematic trend-following strategies which help us gauge our directional exposure to markets. We developed the I-System, our proprietary model, in order to pursue this opportunity in a sustained and robust way over long time periods.

I-System – a dependable trends auto-pilot
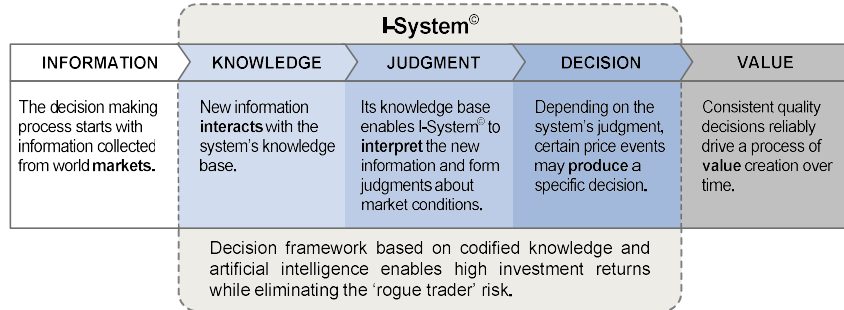
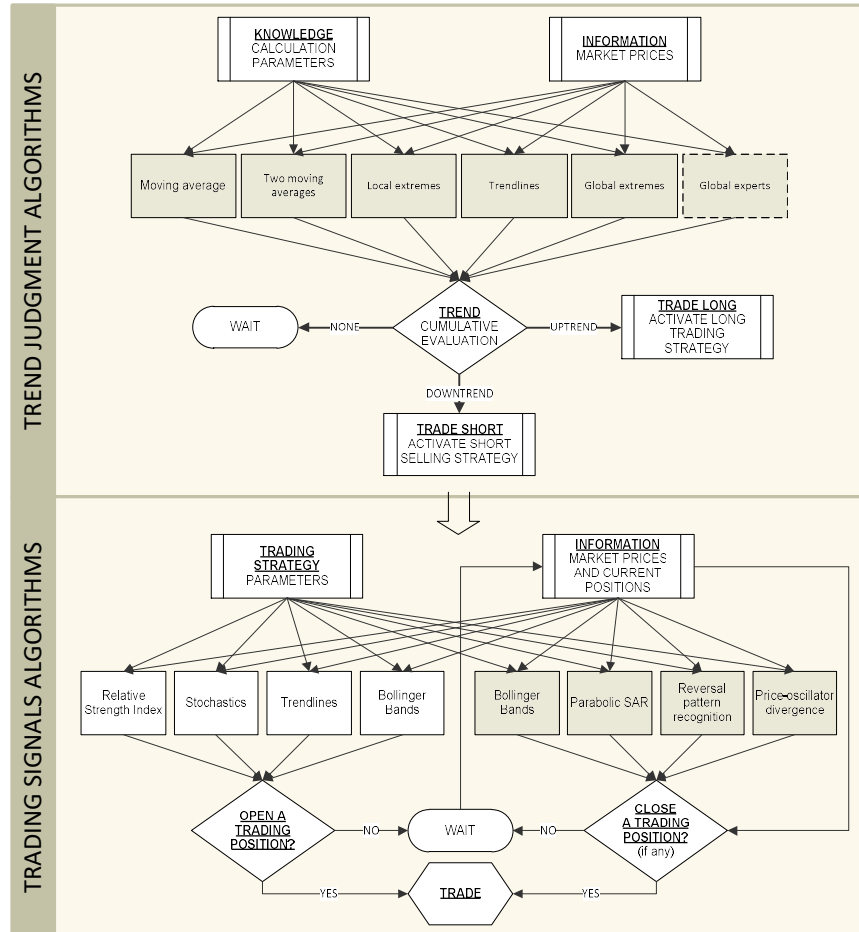Quite simply, I-System is a dependable, time-tested trends auto pilot. It comprises a dual neural network of mathematical algorithms that codify a body of knowledge in market analysis and trading.

I-System's algorithms are driven by some 70 different calculation parameters, enabling us to formulate, test and implement a large variety of intelligent trading strategies. I-System's versatility enables us to define price trends as long-term, medium-term, or short-term events as the following three charts illustrate:

LONG CYCLE TREND

S&P eMini futures (CME) with I-System© long-cycle trend judgment function

← UPTREND

← DOWNTREND

Strategy performance (Jun 2011 = 100)

MEDIUM CYCLE TREND

S&P eMini futures (CME) with I-System© medium-cycle trend judgment function

← UPTREND

← DOWNTREND

Strategy performance (Jun 2011 = 100)

SHORT CYCLE TREND

S&P eMini futures (CME) with I-System© short-cycle trend judgment function

← UPTREND

← DOWNTREND

Strategy performance (Jun 2011 = 100)

Furthermore, we can formulate I-System strategies either to be always in the market, or to trade more selectively, passing more time waiting for the right signals. For every trading day

and any given market, I-System strategies calculate a numerically exact measure of trend in any given market and generate buy or sell signals.

Each strategy's simple objective is to capture value from price trends while limiting losses from adverse fluctuations. Once implemented, the strategies perform their function autonomously, reducing the complex work of daily market analysis to its final product: simple, actionable decisions. This provides investors vital decision support to navigate the market cycles confidently and profitably.

After fifteen years of continuous use without alterations, I-System has proven reliable, versatile, effective and cost-efficient.

1. I-System is reliable

We have designed I-System prototype in 1999 and have not altered its core decision-making algorithms since 2003. The model is capable of following thousands of trading strategies in hundreds of markets daily. After fifteen years of continuous use with no interruptions, code tinkering or maintenance issues, we are entirely confident that our technology is effectively model-risk proof.

2. I-System is versatile

I-System can deploy multiple trading strategies in each market allowing us to offer a uniquely *incremental* approach to managing market exposure as the following chart illustrates:
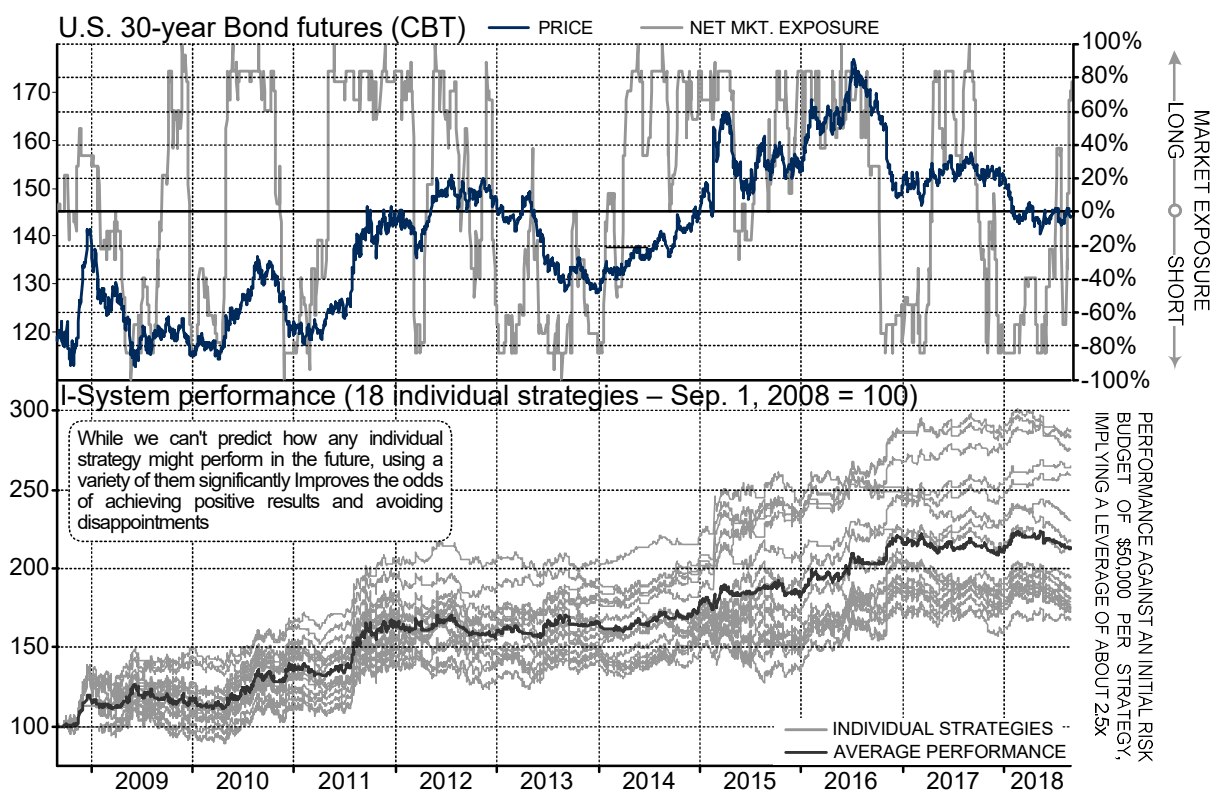
In the top chart, we see the price of the 30-year U.S. Treasury Bond (left axis) overlaid with market exposure as a percentage of full position limit, determined by 18 individual I-System strategies (right axis). Stronger trends warrant heavier exposure, but as momentum weakens, we gradually reduce risk in accordance with specific signals generated by our strategies.

3. I-System is effective (our track record)

I-System's effectiveness has been tested and proven in the most rigorous way possible: by comparing its performance to many of the world's leading trend followers - the "managed futures" funds or Commodity Trade Advisors (CTAs).

In 2007 we set up Galstar Derivatives Trading (GDT) to manage a diversified futures trading portfolio similar to that of many typical CTAs. GDT's trading was based exclusively on a set of some 120 I-System strategies. Between 2007 and 2013, we outperformed the index of world's top rated CTAs, Dow Jones Credit Suisse (DJCS) Managed Futures Blue Chip index.[1]

I-System vs. Dow Jones Credit Suisse Blue Chip Managed Futures Index
Value added monthly index net of 2% management fees and 20% performance fees
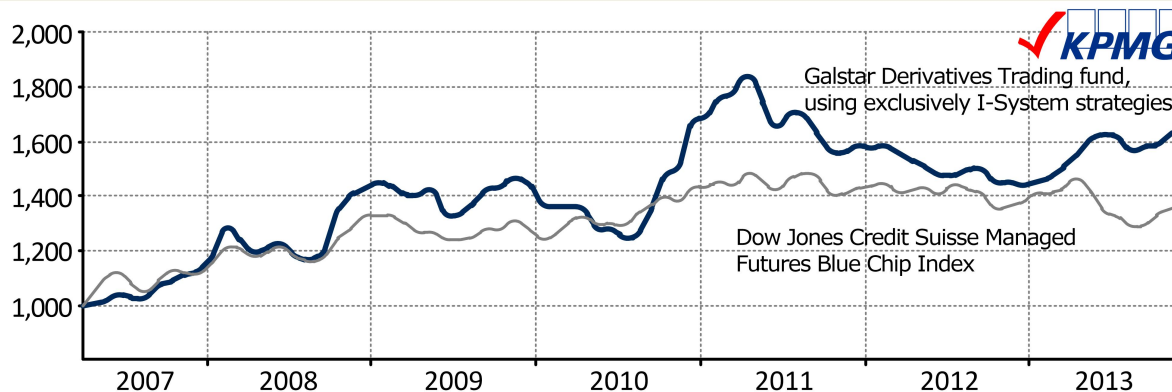
Between 2007 and 2013 our diversified commodities portfolio, Galstar Derivatives Trading outperformed the index of world's top ranked commodity hedge funds. The authenticity of our performance has been audited by KPMG

No lucky fluke: six years, 38 markets, 120 strategies, nearly ten thousand trades…
While the "correctness" of any single trading decision cannot be measured, Galstar track record spanned a period of six years, used 120 I-System strategies in 38 different financial and commodity markets and included close to ten thousand individual trades. This is a robust reflection of the model's quality and effectiveness in generating profits from market trends. Our more recent results in crisis periods are detailed below.

Outperforming tail-risk funds with Altana Inflation Trends Fund
From 2011 to 2019 we used the I-System to manage a tail-risk[2] portfolio under Altana Inflation Trends Fund (AITF). During this time, AITF outperformed the EurekaHedge Tail Risk index.

How we navigated through various episodes of market turmoil…
Although we could enumerate dozens of similar examples, the following examples are indicative of I-System's performance through unpredictable and unforeseen market events.

- **The 2008 financial crisis:** most investors sustained severe losses in 2008. With I-System strategies we shorted the market and generated a 27% positive net return.

- **Late 2015/early 2016 stock market correction**: at the time, equity markets shed about 15%. At that decline's trough, Altana Inflation Trends Fund gained 19.6% net.

- **December 2018 stock market correction:** when the S&P 500 dropped 9.03% AITF rose 9.98% net of fees. This episode is summarized below.

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[1] DJCS Blue Chip Managed Futures index comprised the following hedge funds: Aspect Diversified Fund Ltd (USD), BlueTrend Fund Ltd (USD - Class B), Boronia Diversified Fund Limited, Campbell Global Assets Fund Ltd (Class A) Lynx (Bermuda) Ltd., Quantitative Global Fund, Ltd (Class D 1X), Roy G. Niederhoffer Fund (Ireland) Plc, Winton Futures Fund Ltd (Class B). **DJCS stopped tracking the Blue Chip Hedge Fund indices as of 31 March 2014**.
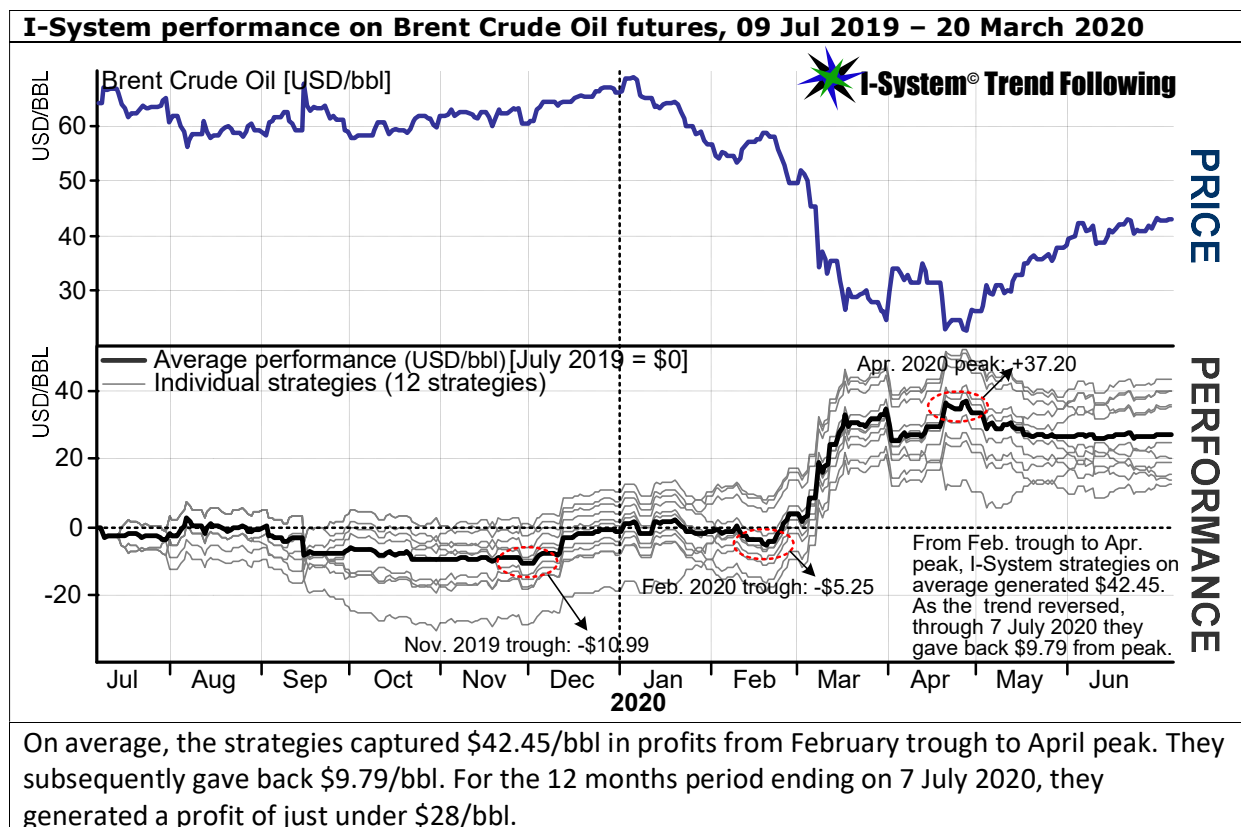[2] A **tail-risk portfolio** is normally used to hedge a much larger investment exposure. For example, if an investor with a $10 million exposure to stocks were concerned about the risk of a stock market crash, he might set up a smaller, perhaps $1 million tail risk portfolio structured to deliver outsize returns if the stock market indeed crashes.

Navigating market trends: a few more examples

Over the years the markets have put I-System through rigorous testing. A few episodes are summarized below.

The 2020 oil price roller-coaster

In July 2019 one of our prospective customers asked us to put together a portfolio of strategies trading crude oil and oil derivatives. This experience proved once more the reliability and effectiveness of the I-System as the following chart illustrates:
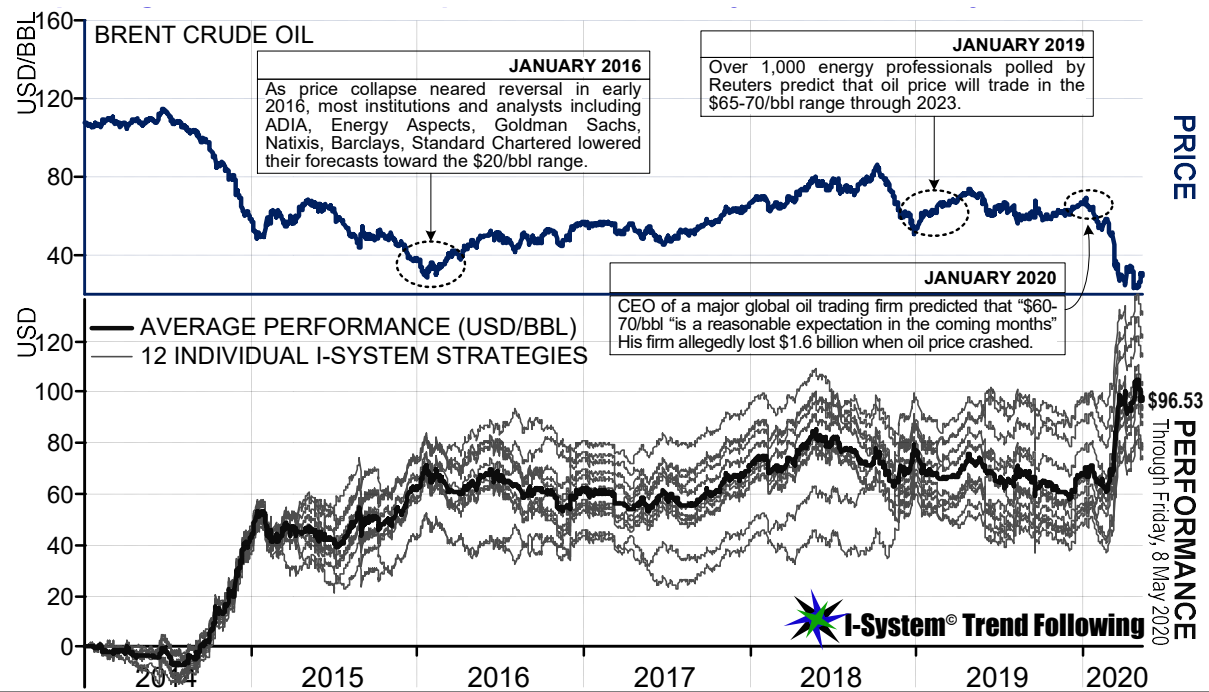

I-System performance on Brent Crude Oil futures, 09 Jul 2019 – 20 March 2020

On average, the strategies captured $42.45/bbl in profits from February trough to April peak. They subsequently gave back $9.79/bbl. For the 12 months period ending on 7 July 2020, they generated a profit of just under $28/bbl.

Yes but, how can your model 'know' if XYZ happens?

This is the most commonly voiced misgiving about quantitative strategies. The perfect case in point is the largest recorded 1-day oil price jump in history. It's the small spike that occurred on Monday, 16 September 2020. On the previous Saturday (14 Sep.), a missile attack in Saudi Arabia caused substantial damage to Aramco's Abqaiq oil production facilities. The following Monday, oil price closed $8.42/bbl above previous Friday's price. Of course, I-System strategies didn't 'know' this would happen and held 60% short exposure at the time. As a result, the portfolio sustained a $5.80/bbl average loss (4 out of 20 strategies had long exposure). Events like this easily induce traders to react emotionally. But impulsive trading around on-going events can make things worse. By contrast, **disciplined adherence to predefined and time-tested decision-making rules enable traders to resist getting caught up in the commotion of the moment**. In this sense, I-System guidance is not a weakness but an important strength. Over longer time-horizons, its consistency in the face of uncertainty pays off, as the chart above clearly shows.

Consistent performance when it matters most!

In the oil market, extreme price events have been increasingly frequent in the recent years, but market experts have invariably failed to predict them. By contrast, I-System has successfully navigated these events, consistently and reliably capturing value from them. The next chart illustrates the performance of 12 I-System strategies included in our Major Markets portfolio since 2014, showing a few forecasts by various market analysts over this time.

I-System: capturing value from extreme price events – reliably and consistently!

> **JANUARY 2016**
> As price collapse neared reversal in early 2016, most institutions and analysts including ADIA, Energy Aspects, Goldman Sachs, Natixis, Barclays, Standard Chartered lowered their forecasts toward the $20/bbl range.

> **JANUARY 2019**
> Over 1,000 energy professionals polled by Reuters predict that oil price will trade in the $65-70/bbl range through 2023.

> **JANUARY 2020**
> CEO of a major global oil trading firm predicted that "$60-70/bbl "is a reasonable expectation in the coming months" His firm allegedly lost $1.6 billion when oil price crashed.

I-System successfully navigated the volatile price fluctuations, reliably capturing profits from large-scale price events – without needing to know the future or to have the 'right' price forecasts.

I-System and COMEX Copper

Copper is an important indicator of the overall economic activity. Given the pervasive uncertainty through much of 2019 and 2020, the price of Copper has staged two major trend reversals – never a good environment for trend followers. Nonetheless, as the prices rallied through the summer of 2020, I-System strategies have again proven their worth.
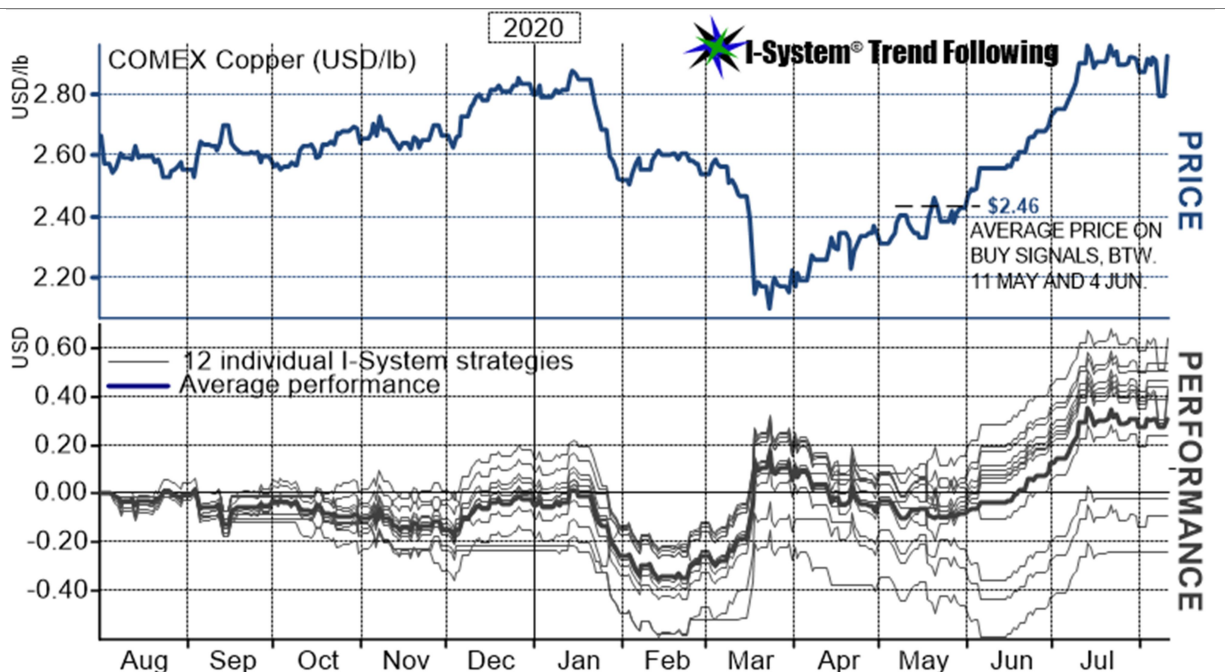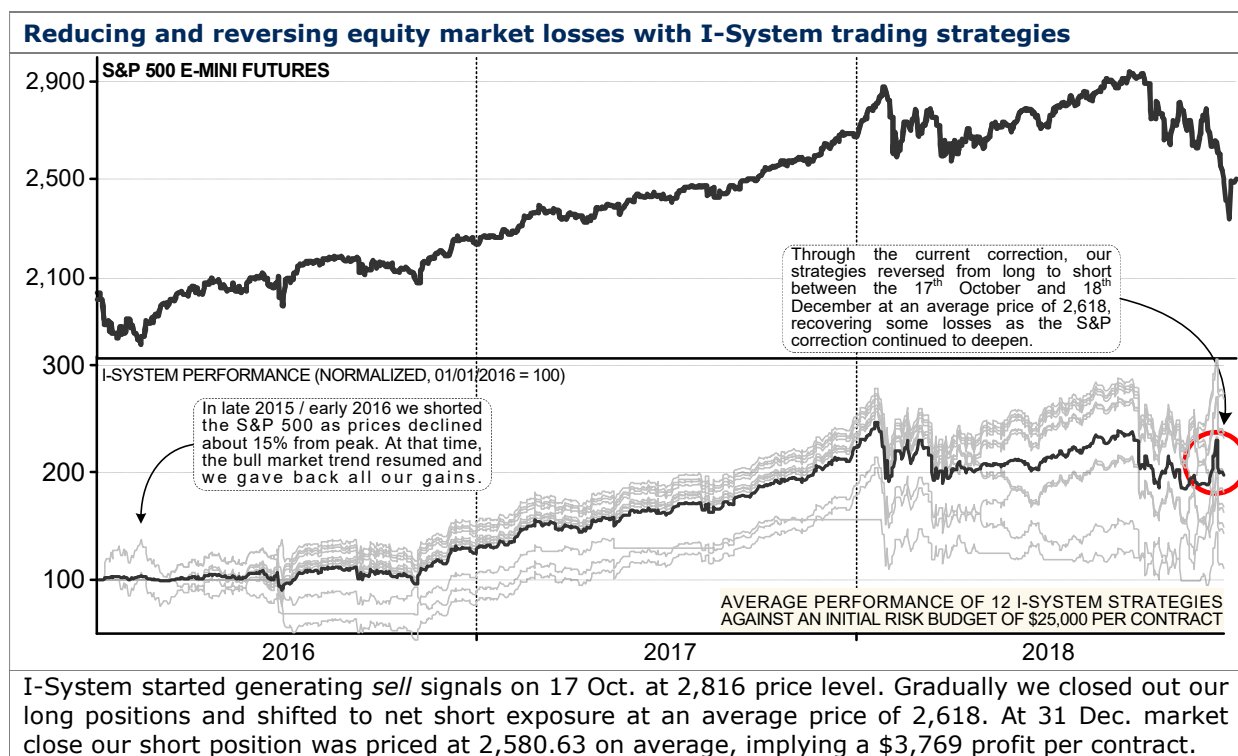

Three of the strategies had negative performance over the 12 months covered in the above chart. But the remaining nine have done superbly well, bringing the average performance for the year to $0.31/lb. – equivalent to $7,750 per contract.

How we navigated the stock market turmoil at the end of 2018

I-System strategies can help investors avoid losses (and profit from) sharp equity market corrections and bear markets. As our track-record shows, we generated positive +27% net return through the last bear market in 2008.

In this sense, I-System proved its worth again when, at the end of 2018 major equity indexes declined by almost 20%. Our strategies performed as expected, generating profits in equity index futures and generating a +9.98% positive net performance for December 2018. The chart below illustrates of our trading in S&P 500 Mini futures contract:

Reducing and reversing equity market losses with I-System trading strategies

Through the current correction, our strategies reversed from long to short between the 17th October and 18th December at an average price of 2,618, recovering some losses as the S&P correction continued to deepen.

In late 2015 / early 2016 we shorted the S&P 500 as prices declined about 15% from peak. At that time, the bull market trend resumed and we gave back all our gains.

AVERAGE PERFORMANCE OF 12 I-SYSTEM STRATEGIES AGAINST AN INITIAL RISK BUDGET OF $25,000 PER CONTRACT

I-System started generating sell *signals on 17 Oct. at 2,816 price level. Gradually we closed out our long positions and shifted to net short exposure at an average price of 2,618. At 31 Dec. market close our short position was priced at 2,580.63 on average, implying a $3,769 profit per contract.*

These results testify to the quality of the I-System as a model and to the effectiveness of its strategies in capturing value from market trends. When a major economic crisis begins to impact securities prices – whether in financial, currency or commodities markets, I-System strategies have proven their ability to pick up the emerging trends and trade them profitably.

The above chart incidentally also conveys a fair illustration of the way typical trend-following strategies perform over time: they generate strong trading gains while markets trend, but tend to stall or generate losses when trends correct, reverse, or when price fluctuations remain confined in a horizontal range. With S&P 500, this took place through 2018. Visibly, some of our strategies performed negatively in this environment. But even at that, the strength and reliability of the I-System performance may remain stable until a new trend cycle gathers momentum.

Profit through bull and bear markets!

Screen-grab from I-System's interface shows **up-trend periods** in blue and **down-trend periods** in red. Onset of a down-trend is a signal to reduce or hedge your market exposure. <u>It is equally important to know when to start adding to your exposure again</u>. During the 2008 bear market, we achieved a 27% positive net thanks to I-System Trend Following.

Systematic trend following entails disciplined adherence to predefined and time-tested rules. It helps traders keep composure through the commotion of volatile market moments so they can navigate market trends **profitably**, **with confidence and peace of mind**!

THE I-SYSTEM EDGE

CUTS THE INFORMATION OVERLOAD	Information overload and complexity of market analysis are reduced to simple, executable decisions: *buy* or *sell*. No need to know the future.
MEASURABLE QUALITY DECISIONS	Consistency and method in trading allows us to objectively measure the quality of our trading decisions.
DISCIPLINE	Trading algorithms exclude human error like distraction and emotion.
NO ROGUE TRADER RISK	Rogue traders are the main cause of major trading misadventures. This risk is a strong deterrent for managers to explore more active approaches to investing. I-System elegantly removes this risk, replacing the human element with quantitative strategies free of human shortcomings. Like industrial robots, I-System strategies perform their tasks without mistakes.
WORK ETHIC	I-System strategies never lose focus and take no days off. They also don't demand bonus for their performance.
THE COST ADVANTAGE	An entry level analyst can cost upwards of $60,000 per year. More experienced professionals can cost multiple times that. Worse, their performance can be very irregular. I-System delivers consistently high quality decision support at a fraction of this cost.

I-System©
Trend Following