KDS Global LLC

SDF

Structured Derivatives Fund

Investor Package: Trading Platform, Strategies, and Investment Guidelines

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Introduction

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- The purpose of this document is to give investors a detailed description of the Equity Derivative On-Demand （EOD）Trading Platform and Strategies, while also discussing the applications of the trading strategies onto the SDF fund where there is refined risk allocation
- US Patent Application Number 621351877777 (QED Option Pricing Model)

  The document also covers the key investment guidelines, risk management processes, and portfolio management process to satisfy investor management requirements, as well as those of any dealer providing leverage structure.
- KDS can provide the trading platform and analytics for Equity Options, Futures, Commodities, and other Derivatives Securities, Traded within the US – operated CBOE, CME and NYSE exchanges, as well as ability to trade in global exchanges.

KDS Quantum Option Model

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- **KDS's Latest Options Pricing Model**
  - ✓ Based on the Quantum ElectroDynamics (QED)
  - ✓ Brownian motion extended to quantum propagation
  - ✓ Classical Heat diffusion extended to quantum wave diffusion
- **Major Key Feature**
  - ✓ Introduction of asymmetric quantum diffusion to account for investor psychology of asymmetric biases for positive and negative outcomes
- **The Best Model in the Market**
  - ✓ Based on our industry-wide comparison and benchmarking of models, none of the existing options pricing models in the market can match our proprietary methods in terms of the accuracy and speed, to track and trade the market data.

Quantum Option Model

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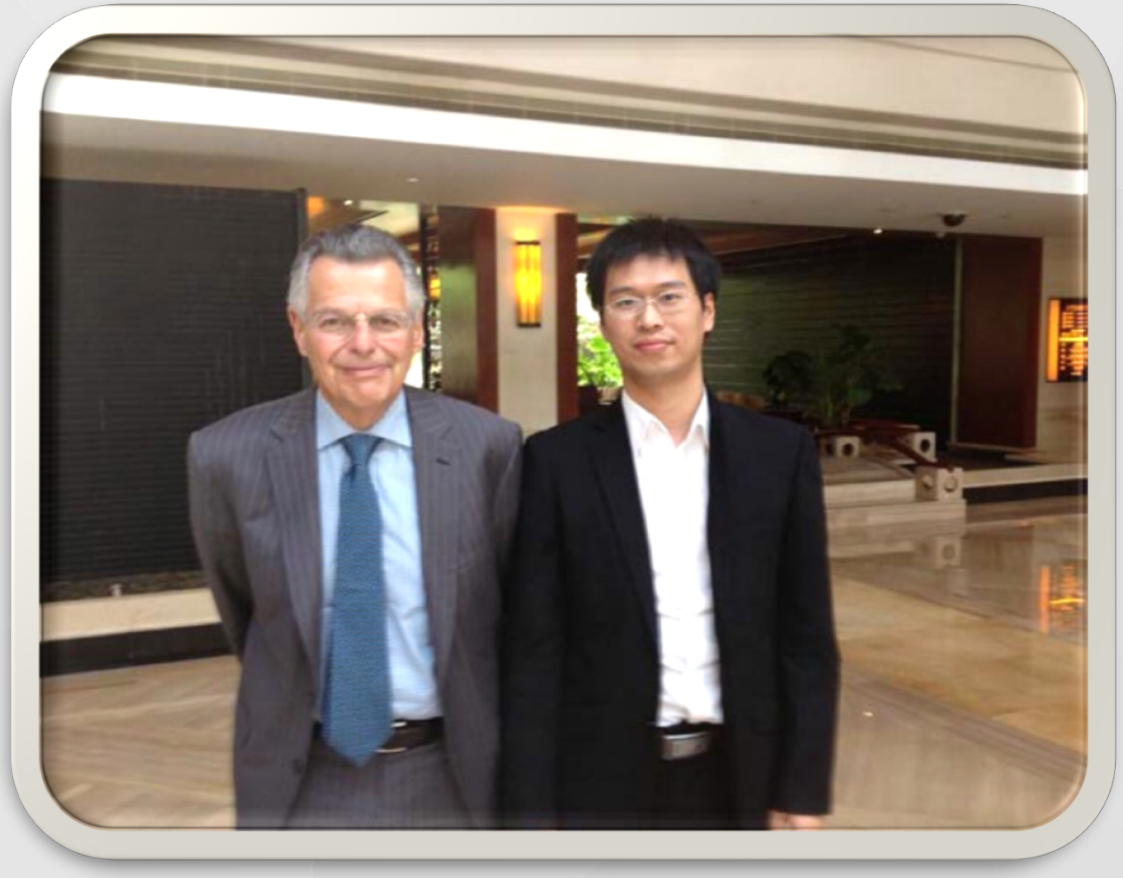
- **Endorsed by Dr.Scholes**
  - ✓ **On September 15,2013, our model was presented in "The 6th International Conference on WTO & Financial Engineering-The 1st Global Forum of Zhejiang Enterprises Innovation"**



QED versus Black-Scholes Option Model

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QED Model

$$C = Ke^{-r\tau}p_0\rho\nu\left[e^{-x_*}\sum_{n=0}^{\infty}\frac{\rho^n}{n!}\Gamma(\nu+n\nu,y)-\Gamma(\nu,y)\right]-\left(Ke^{-r\tau}-Se^{-q\tau-\delta}\right)\theta(-x_*)$$

$$P = Ke^{-r\tau}p_0\rho\nu\left[e^{-x_*}\sum_{n=0}^{\infty}\frac{\rho^n}{n!}\Gamma(\nu+n\nu,y)-\Gamma(\nu,y)\right]+\left(Ke^{-r\tau}-Se^{-q\tau-\delta}\right)\theta(+x_*)$$

$$x_* = \ln(K/S)-(r-q)\tau+\delta+\ln R$$
$$\sigma = [f_+\sigma_+^2+f_-\sigma_-^2+2g_+g_-\sigma_+\sigma_-]^{1/2}$$

BS Model

$$C = Se^{-q\tau}N(+D_1)-Ke^{-r\tau}N(+D_2)$$
$$P = Ke^{-r\tau}N(-D_2)-Se^{-q\tau}N(-D_1)$$

$$D_1 = \frac{\ln(S/K)+(r-q+\sigma^2/2)\tau}{\sigma\sqrt{\tau}}$$
$$D_2 = \frac{\ln(S/K)+(r-q-\sigma^2/2)\tau}{\sigma\sqrt{\tau}}$$

History of Options Pricing Model

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- 1900 Bachelier
  - ✓ The theory of speculation (Brownian motion ）
- 1905 Einstein
  - ✓ Thought experiment on diffusion of Brownian particles and the Avagadro costant
- 1973 Black-Scholes
  - ✓ Assumption 1: People are rational
  - ✓ Assumption 2: All investors are alike
  - ✓ Assumption 3: Price movement is continuous
  - ✓ Assumption 4: Price changes follow a Brownian motion
- A lot of models followed but couldn’t explain all market data
  - ✓ Stochastic volatility（1976）
  - ✓ Volatility clustering model（1982）
  - ✓ Fractional Brownian motion（1982）
  - ✓ Variance gamma model（1998）

Value Added Paradigm

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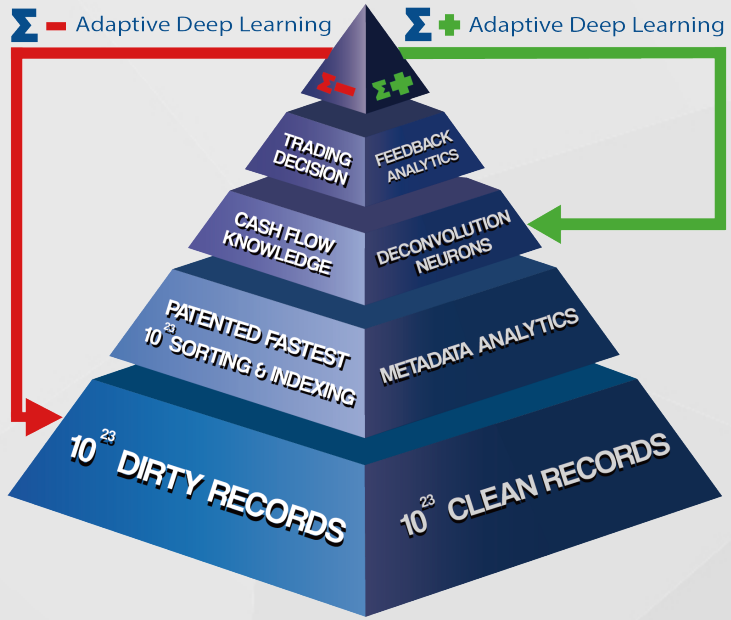
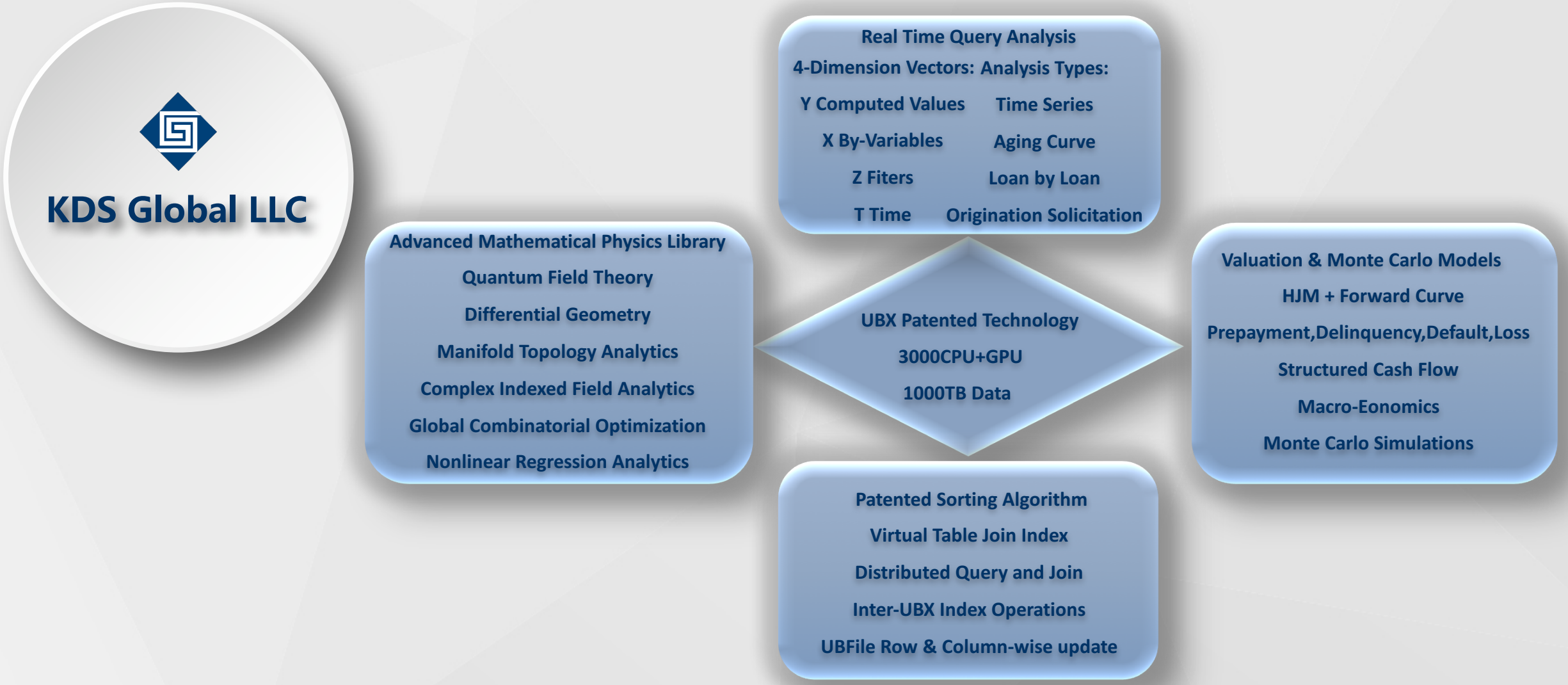
- KDS's solution is built on 5 pillars-profit, Decision, Knowledge, Information, and Data. The positive and negative feedback will be incorporated and fed back to the workflow process so the real-time decision is accurate and timely. This is the foundation of a real-time trading and risk management system that ultimately results in competitive advantage for any fund manager.



UBX™ AI ENGINE

Structured Derivatives Fund(SDF)-UBX Core Technology



KDS Real Time Trading Platform

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- Our primary Equity Derivatives and Futures trading platform is streamlined directly into the CBOE market exchange, and the Greeks/Risk analytics are calculated in real-time based on instantaneous pricing data from the CBOE exchange.
- Using the KDS platform provides direct access to market level and dark pool derivatives trading, and the execution costs can therefore be optimized since the back-end of the EOD system runs all of the trading and pricing analytics and connects directly with the exchange, brokerage and /or market marker.
- The overall flowchart of the KDS trading platform I shown in the next slide, which illustrates how all the technology, science, risk management and reading components interact together.
- 使用专利期权模型做看涨和看跌期权的空头交易。

KDS Real Time UBX Trading Platform

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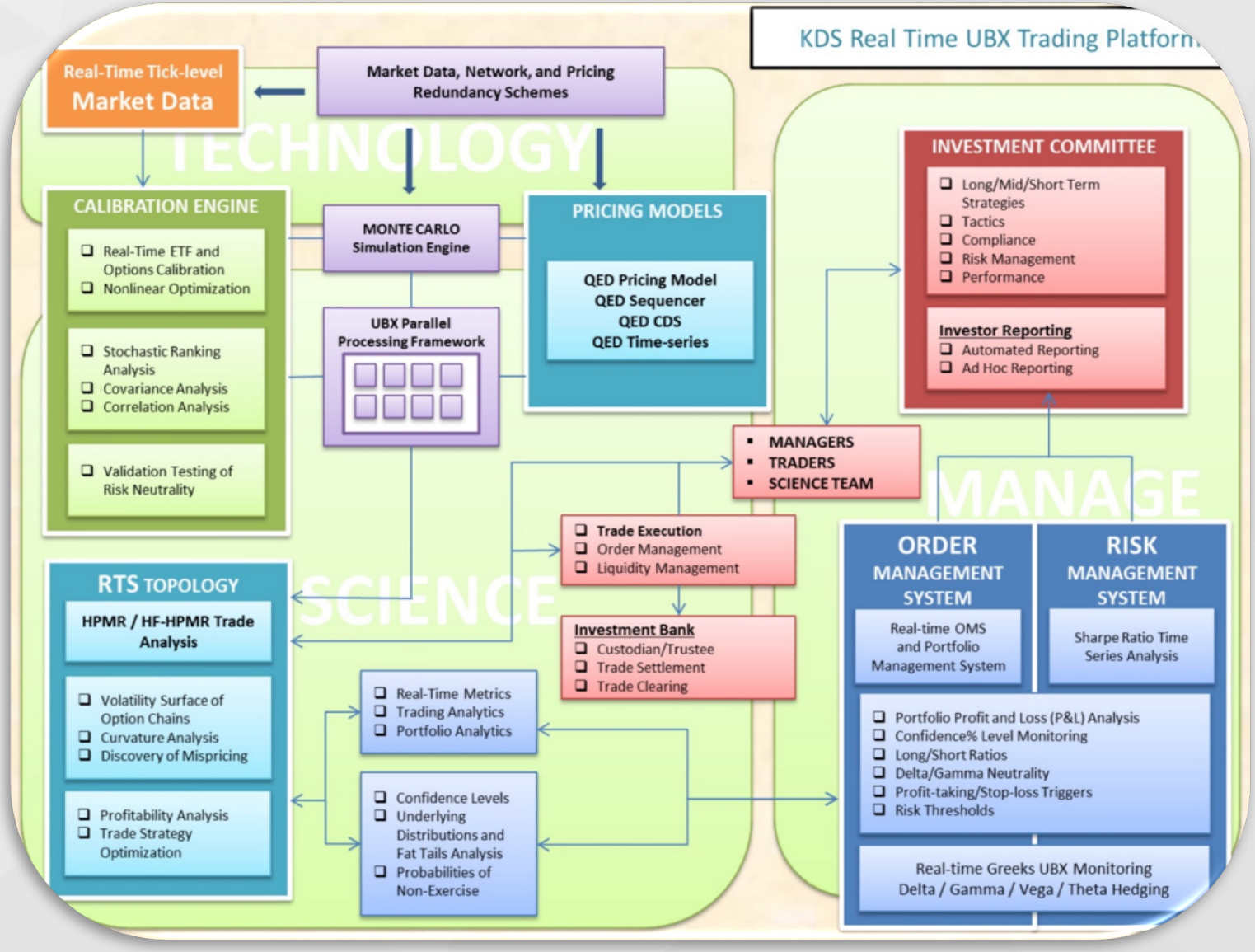

KDS Goal in Risk Management

- We know more information
  - ✓ Accurate （typically within the traded bid-ask spread)
  - ✓ Fast (real time minute by minute resolution)
  - ✓ Good or bad volatility(upward or downward movement)
  - ✓ High or low speed （ upward or downward movement)
  - ✓ Dynamics or equilibrium (deviation of risk neutrality)
- More information & Monte Carlos simulation lead to
  - ✓ Better understanding of price movement
  - ✓ Better risk control(hedging and /or transfer)
  - ✓ Better selection and strategy
  - ✓ Sustainable profit
- Our goal:taking calculated risk, making sustainable profit

SDF 2013 performance

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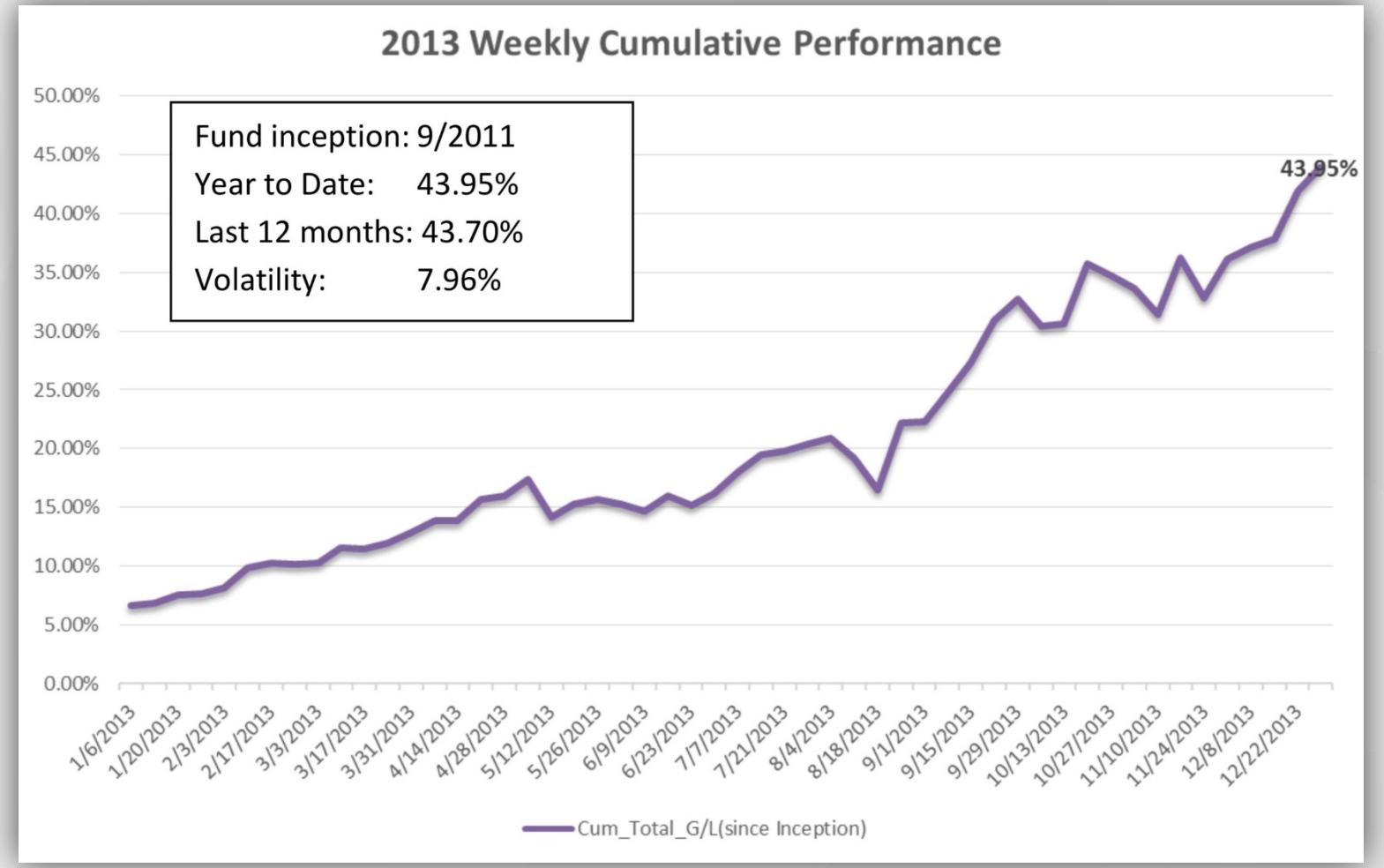

2015-2016 Performance

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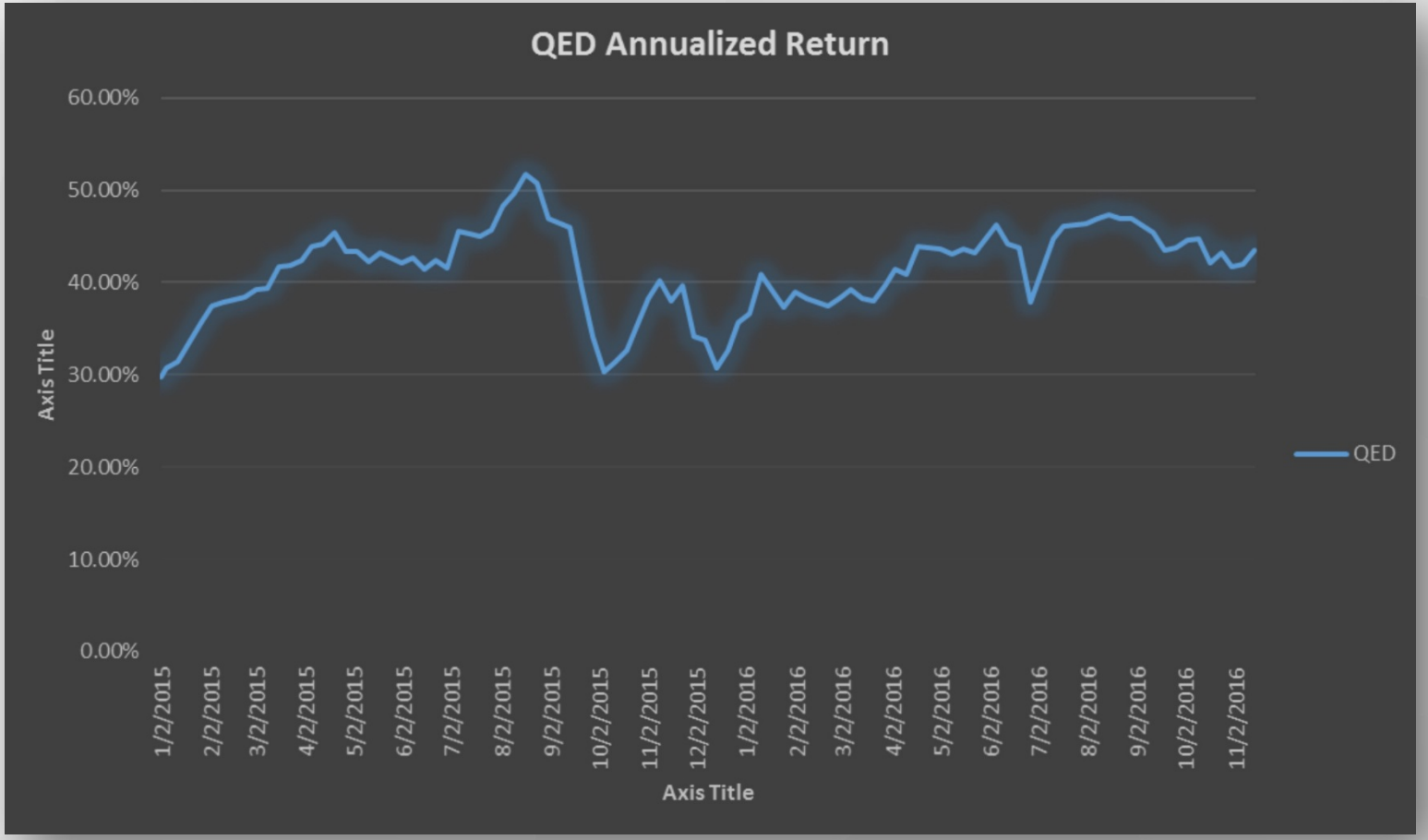

2017 Performance

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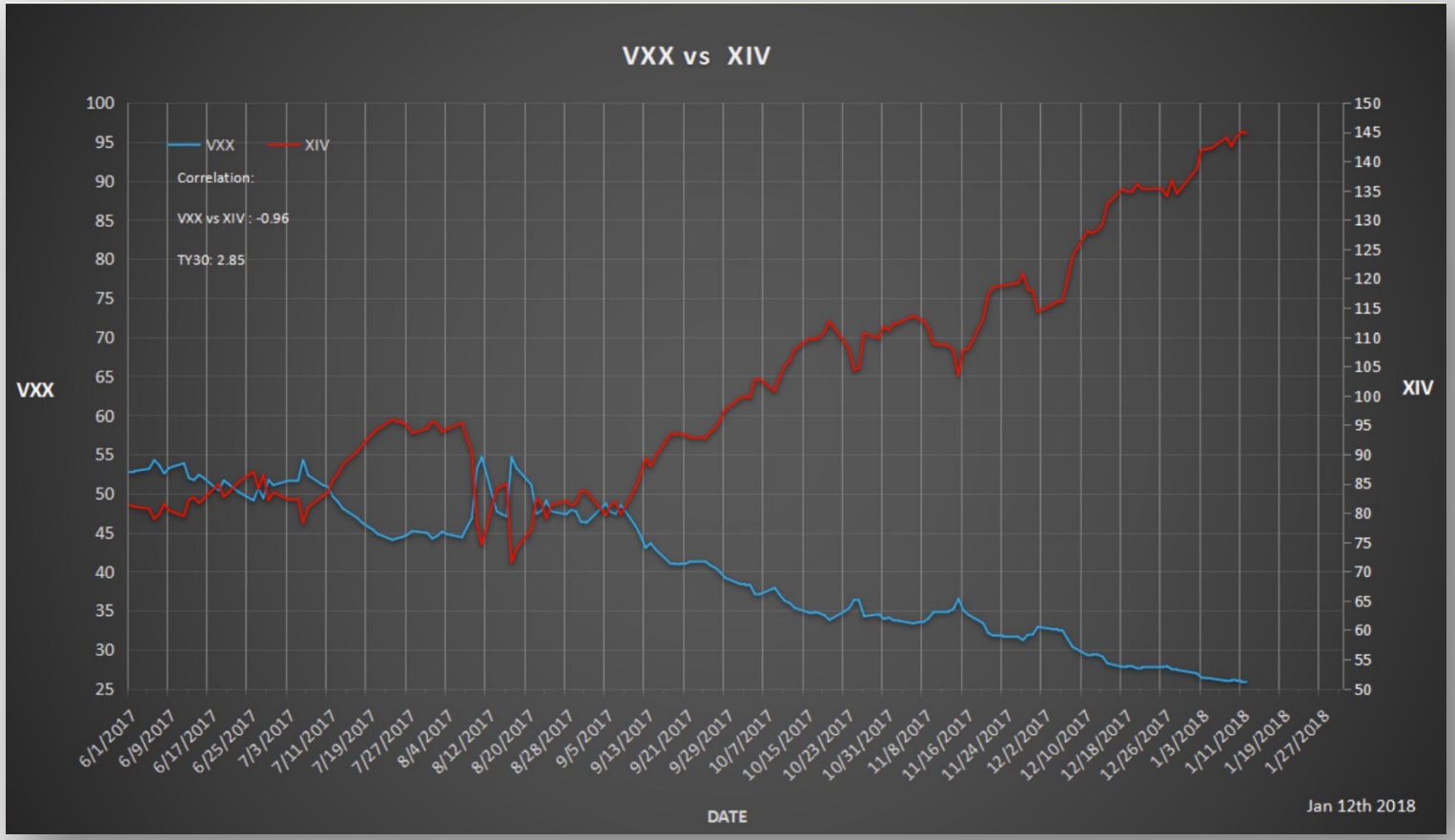
- **Most Profitable Trade to-date:Sell VXX Call, Buy XIV**



QED Option Model Offers Powerful Predictive Power

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- Trade Log–

AAPL Spot 2016-11-18 16:00:00 110.01 Maturity 2016-12-16 P95 p2.33% C120 p5.02% Added 2016-11-17

AMZN Spot 2016-11-18 15:58:00 760.68 Maturity 2016-11-18 P705 p0.00% C925 p0.00% Added 2016-10-21

AMZN Spot 2016-11-18 16:00:00 760.29 Maturity 2016-12-16 P680 p5.77% C870 p1.70% Added 2016-11-08

FB Spot 2016-11-18 16:00:00 116.98 Maturity 2016-12-16 P100 p2.11% C130 p3.37% Added 2016-11-18

NFLX Spot 2016-11-18 16:00:00 115.17 Maturity 2016-12-16 P100 p5.99% C130 p6.03% Added 2016-11-18

TSLA Spot 2016-11-18 16:00:00 185.02 Maturity 2016-12-16 P150 p3.69% C225 p1.99% Added 2016-11-17

- **Position created on 10-21-2016 selling 705 put and 925 call, both position realized 100% premium on 11-18-2016**

Addressable and Served Option Tickers

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- Steady cashflow generation to improve KDS P&L
- Satisfy liquidity and volatility requirement, constant roll-over 3 mo. Expiration contracts
- Capable of handling $10-15 MM portfolio
- Add more tickers when trading capital increased without additional operation cost

Option
AAPL
AMZN
DIA
FB
GILD
GOOGL
NFLX
QQQ
SPY
TSLA
UVXY
VXX
TNA

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AMZN  Spot 2016-11-18 15:58:00 760.68 Maturity 2016-11-18   P705 p0.00%   C925 p0.00% Added 2016-10-21
AMZN  Spot 2016-11-18 16:00:00 760.29 Maturity 2016-12-16   P680 p5.77%   C870 p1.70% Added 2016-11-08
FB    Spot 2016-11-18 16:00:00 116.98 Maturity 2016-12-16   P100 p2.11%   C130 p3.37% Added 2016-11-18
NFLX  Spot 2016-11-18 16:00:00 115.17 Maturity 2016-12-16   P100 p5.99%   C130 p6.03% Added 2016-11-18
TSLA  Spot 2016-11-18 16:00:00 185.02 Maturity 2016-12-16   P150 p3.69%   C225 p1.99% Added 2016-11-17
                  --- HV IV VF PC Summary --- 2016-11-18 16:00:00 ---
   SYM  HV(5d)  IV(5d) HV(10d) IV(10d) HV(20d) IV(20d) HV(30d) IV(30d)  VF(1d)  VF(5d) VF(10d) VF(20d) VF(30d)  P/C(B)  P/C(A)  P/C(O)
  AAPL   26.34   20.30   23.72   20.63   46.65   21.74   53.90   20.88    6.58    2.38    1.37    0.74    0.57    0.95    1.26    0.65
  AMZN   29.94   24.32   42.29   24.78   66.48   24.41   71.31   24.77   -2.52   -1.20   -0.72   -1.12   -1.88    1.79    0.42    1.11
   DIA    2.21    9.14   21.49   11.25   31.06   13.82   27.63   14.92   -5.96    0.06    3.00    1.80    0.57   13.97    3.89    1.00
    FB   11.94   20.38   35.85   21.42   78.93   23.00   71.09   23.70   -5.31   -0.39    0.06   -0.97   -0.35    1.13    0.22    0.70
  GILD   16.98   21.58   31.21   22.55   35.26   24.09   32.86   24.37   -4.07   -3.38   -2.28   -1.53   -1.18    0.79    0.26    0.37
 GOOGL   23.53   17.67   33.51   18.87   44.11   19.28   40.45   19.97   -2.87   -0.64   -1.37   -1.33   -1.34    1.25    0.90    1.11
  NFLX   15.90   30.47   56.59   30.25   68.31   31.89  126.20   32.64   -1.88   -0.93   -2.29   -2.02    0.96    0.89    0.32    1.23
   QQQ   14.10   11.64   12.66   13.84   19.80   16.56   18.26   17.68    1.10   -0.51   -0.83   -1.05   -1.53    3.32    1.79    1.91
   SPY    6.33    9.83   14.52   11.63   21.01   14.34   17.83   15.75   -1.98    1.64    2.80    1.25    0.47    2.87    1.85    2.31
   TNA   26.94   44.65  166.58   49.07  197.61   55.13  164.47   57.51    8.04    5.56    7.77    2.73    1.65    2.00    7.01    5.45
  TSLA   19.65   32.10   35.03   34.47   62.06   36.98   58.45   38.57   -4.04   -1.81   -0.55   -1.46   -0.98    1.49    0.45    1.18
  UVXY  100.51  113.93  158.46  115.99  248.07  117.35  219.42  121.44   -1.65   -3.86   -3.11   -0.63   -0.69    0.07    0.22    0.31
   VXX   48.84   77.08   74.43   67.18  113.74   64.01  101.35   64.08    2.41   -2.84   -2.03    0.18    0.15    0.09    0.04    0.81
```

Hitorical Volatility
Used to track historical volatility

Implied Volatility
Used to track current implied vol.

Volume Flow
Used to track volume flow in major strikes

Put/Call Ratio
Used to track put versus call on major traded strikes

VXX Real-Time Strategy Tracking

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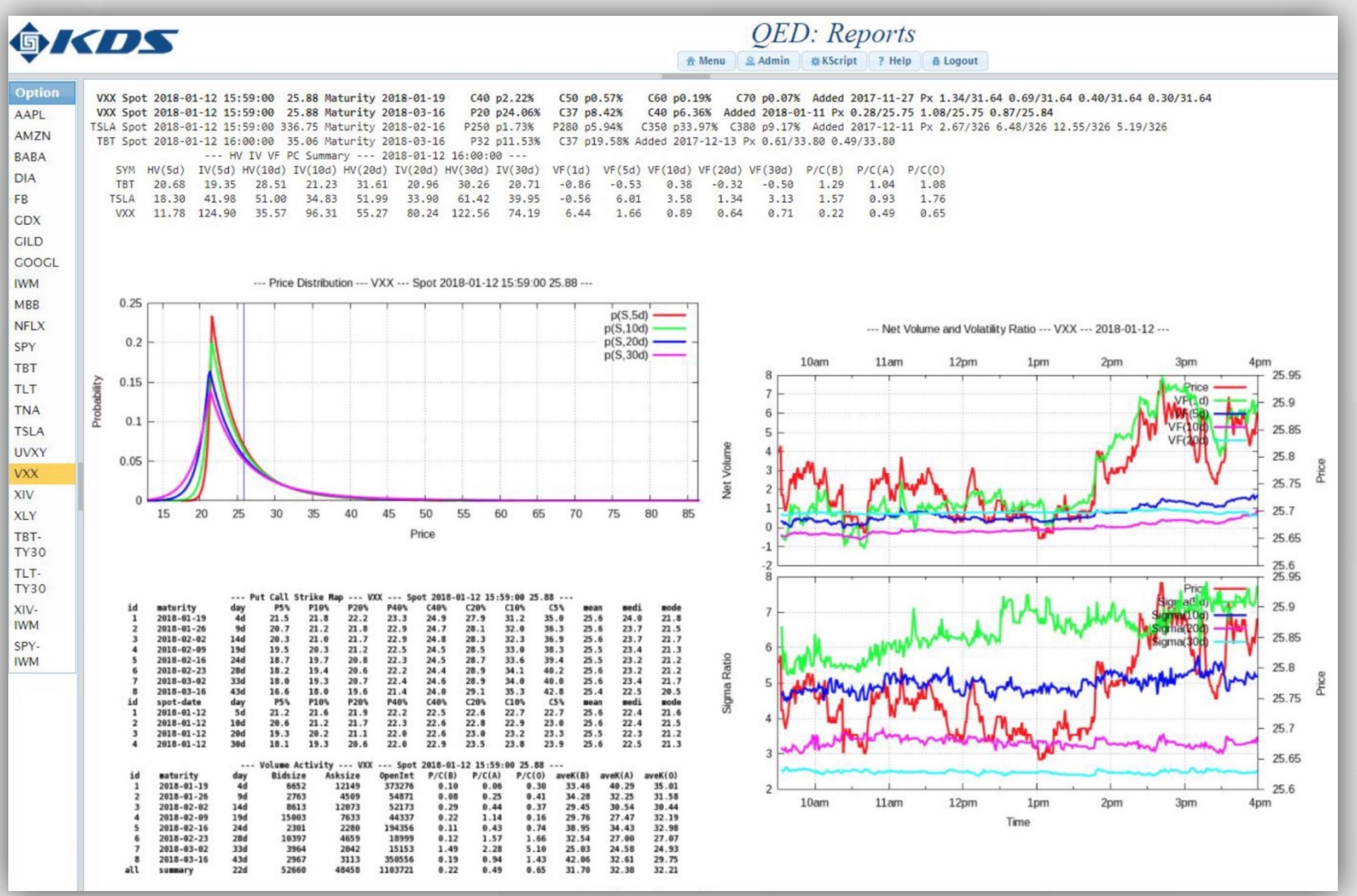

Most Profitable Trades

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trade-date	ticker	unit price	extend price	maturity	days-to-maturity
17/6/16	SPY:2017-07-21:P218	0.22	2,200.00	17/7/21	35
17/6/16	SPY:2017-07-21:C258	0.03	300.00	17/7/21	35
17/6/16	TLT:2017-07-21:P120	0.07	700.00	17/7/21	35
17/6/16	TLT:2017-07-21:C132	0.15	1,500.00	17/7/21	35
17/7/3	VXX:2017-08-18:P10	0.04	400.00	17/8/18	46
17/7/3	VXX:2017-08-18:C20	0.39	3,900.00	17/8/18	46
17/7/17	VXX:2017-09-15:P9	0.03	300.00	17/9/15	60
17/7/17	VXX:2017-09-15:C19	0.31	3,100.00	17/9/15	60
17/7/22	SPY:2017-08-18:P225	0.14	1,400.00	17/8/18	27
17/7/22	SPY:2017-08-18:C250	0.58	5,800.00	17/8/18	27
17/7/24	TLT:2017-08-18:P122	0.22	2,200.00	17/8/18	25
17/7/24	TLT:2017-08-18:C128	0.41	4,100.00	17/8/18	25
17/8/21	TLT:2017-09-15:P124	0.35	3,500.00	17/9/15	25
17/8/21	TLT:2017-09-15:C130	0.36	3,600.00	17/9/15	25
17/8/21	SPY:2017-09-15:P230	0.65	6,500.00	17/9/15	25
17/8/21	SPY:2017-09-15:C247	0.65	6,500.00	17/9/15	25
17/8/21	VXX:2017-09-15:P12	0.50	5,000.00	17/9/15	25
17/8/21	VXX:2017-09-15:C16	0.42	4,200.00	17/9/15	25
17/9/18	SPY:2017-10-20:P240	0.75	7,500.00	17/10/20	32
17/9/18	SPY:2017-10-20:C260	0.05	500.00	17/10/20	32
17/9/19	TLT:2017-10-20:P122	0.21	2,100.00	17/10/20	31
17/9/19	TLT:2017-10-20:C130	0.34	3,400.00	17/10/20	31
17/9/20	IWM:2017-10-20:P138	0.45	4,500.00	17/10/20	30
17/9/20	IWM:2017-10-20:C149	0.18	1,800.00	17/10/20	30
17/10/17	UVXY:2017-12-15:C40	1.29	12,900.00	17/12/15	59
17/10/17	UVXY:2018-01-19:C50	1.69	16,900.00	18/1/19	94
17/10/17	UVXY:2018-03-16:C60	2.43	24,300.00	18/1/19	94
17/10/17	UVXY:2019-01-18:C75	5.26	52,600.00	19/1/18	458
17/10/19	VXX:2017-12-15:C60	1.00	10,000.00	17/12/15	57
17/10/20	VXX:2017-11-17:C65	0.29	2,900.00	17/11/17	28
17/10/20	SPY:2017-11-17:P232	0.17	1,700.00	17/11/17	28
17/10/20	SPY:2017-11-17:C270	0.04	400.00	17/11/17	28
17/10/20	TLT:2017-11-17:P118	0.10	1,000.00	17/11/17	28
17/10/20	TLT:2017-11-17:C130	0.10	1,000.00	17/11/17	28
17/10/31	TBT:2017-12-15:P32	0.11	1,100.00	17/12/15	45
17/10/31	TBT:2017-12-15:C38	0.29	2,900.00	17/12/15	45
17/11/20	GDX:2017-12-15:P21	0.08	800.00	17/12/15	25
17/11/20	GDX:2017-12-15:C24	0.09	900.00	17/12/15	25
17/11/20	TLT:2017-12-15:P122	0.19	1,900.00	17/12/15	25
17/11/20	TLT:2017-12-15:C130	0.22	2,200.00	17/12/15	25
17/11/20	XLY:2017-12-15:P90	0.23	2,300.00	17/12/15	25
17/11/20	XLY:2017-12-15:C97	0.07	700.00	17/12/15	25
17/11/21	BABA:2018-01-19:P160	0.57	5,700.00	18/1/19	59
17/11/21	BABA:2018-01-19:C220	0.81	8,100.00	18/1/19	59
17/11/21	FB:2018-01-19:P160	0.58	5,800.00	18/1/19	59
17/11/21	FB:2018-01-19:C200	0.63	6,300.00	18/1/19	59
17/11/27	VXX:2018-01-19:C40	1.34	13,400.00	18/1/19	53
17/11/27	VXX:2018-01-19:C50	0.69	6,900.00	18/1/19	53
17/11/27	VXX:2018-01-19:C60	0.40	4,000.00	18/1/19	53
17/11/27	VXX:2018-01-19:C70	0.30	3,000.00	18/1/19	53
17/12/11	TSLA:2018-02-16:P250	2.67	26,700.00	18/2/16	67
17/12/11	TSLA:2018-02-16:P280	6.48	64,800.00	18/2/16	67
17/12/11	TSLA:2018-02-16:C350	12.55	125,500.00	18/2/16	67
17/12/11	TSLA:2018-02-16:C380	5.19	51,900.00	18/2/16	67
17/12/13	TBT:2018-03-16:P32	0.61	6,100.00	18/3/16	93
17/12/13	TBT:2018-03-16:C37	0.49	4,900.00	18/3/16	93
		TOTAL PRICE	544,600.00		

Quantum Electrodynamics(QED)Path Integral Pricing Framework

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- The QED pricing utilizes the Feynman – Kac Quantum ElectroDynamics (QED) Path Integral methodology, which goes beyond the classical Brownian motion methods that do not accurately capture the short and long range duality that is actually exhibited in market prices and dynamics.
- The asymmetric nature of jumps up and jumps down, occurring both intra – day and at market open (e.g. during the accumulation of potential energy), was modeled using strong and weak “nuclear” forces to properly characterize and quantify the jump behaviors exhibited in the option chains and underlying indexes. This allows us to model a linked structure between particularly in highly unstable market onditions.
- In addition, the KDS Real – time Order Management System (OMS) system which offers a front – end that links into all trade – level, portfolio – level, and market – level strategy and risk especially given the massively parallel – processing framework to capture instantaneous real- time calibration and pricing action.

Quantum Electrodynamics(QED)Path Integral Pricing Framework

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- **Monte–Carlo Simulation Calibration for all derivatives secruities:**
  - ✓ **Pricing model is continuously calibrated using real–time market data.**
  - ✓ **Monte–Carlo Simulation Based : Monte–Carlo simulations of 100,000 paths in tick by tick time steps are performed in our massive parallel computing environment to generate option prices on the fly.**
  - ✓ **Option trading volume and bid–ask spread data are taken into account in the calibration process.**
  - ✓ **Using the entire spectrum of ATM to far OTM strikes within the calibration process to account for the entire Full Volatility Skew exhibited in the market prices and bid- ask data, and thereby allow accurate modeling of stochastic volatility.**
  - ✓ **Advanced nonlinear techniques and maximum-likelihood optimization are used to estimate model parameters to ensure Global Minimum Solution.**
- **Lepokrutic P&L Concentration**
  - ✓ **The lepokurtic P&L Concentration functions and graph within the OMS are fully integrated and provide traders the real-time distribution on an asset-and portfolio-level in order to better gauge skewness of how much or little a given trade is affecting overall portfolio probability.**

Quantum ElectroDynamics(QED)-Volatility Evolution

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- The QED model describes the quantum behavior of volatility evolution, unlike what has ever been done in the market before, as given the proprietary QED equations below. This gives us the ability to accurately predict when short-term volatility inefficiencies occur in the market and thereby profit form the high-probability mean reversion strategy on volatility-based trades. This method of volatility modeling truly transcends what has previously been done in volatility trading as is evident by the extremely successful rate of return achieved by the model-based trading strategies thus far (see “Strategy Back Test” section below).

Volatility Evolution

$$\rho_{\pm} = \sqrt{\tau}\,\sigma_{\pm}\tau_{\pm}[\Gamma(\nu_{\pm})/\Gamma(3\nu_{\pm})]^{1/2}$$

$$\tau = T - t$$

$$\tau_{\pm} = \exp\{\alpha_{\pm}\, ln\,\tau + \epsilon_{\pm} ln[\gamma(0.75,100\tau)/\gamma(0.75,100)]\}$$

$$\gamma(\nu, y) = \Gamma(\nu) - \Gamma(\nu, y)$$

Implied Volatility

$$\sigma = [f_{+}\sigma_{+}^{2} + f_{-}\sigma_{-}^{2} + 2g_{+}g_{-}\sigma_{+}\sigma_{-}]^{1/2}$$

$$p_{\pm} = p_0\rho_{\pm}\Gamma(1 + \nu_{\pm})$$
$$w_{\pm} = \Gamma(2\nu_{\pm})[\Gamma(\nu_{\pm})\Gamma(3\nu_{\pm})]^{-1/2}$$

$$f_{\pm} = p_{\pm}\tau_{\pm}^{2}[1 - p_{\pm}w_{\pm}^{2}]$$
$$g_{\pm} = p_{\pm}\tau_{\pm}w_{\pm}$$

QED Results-SPY (Quarterly Options)

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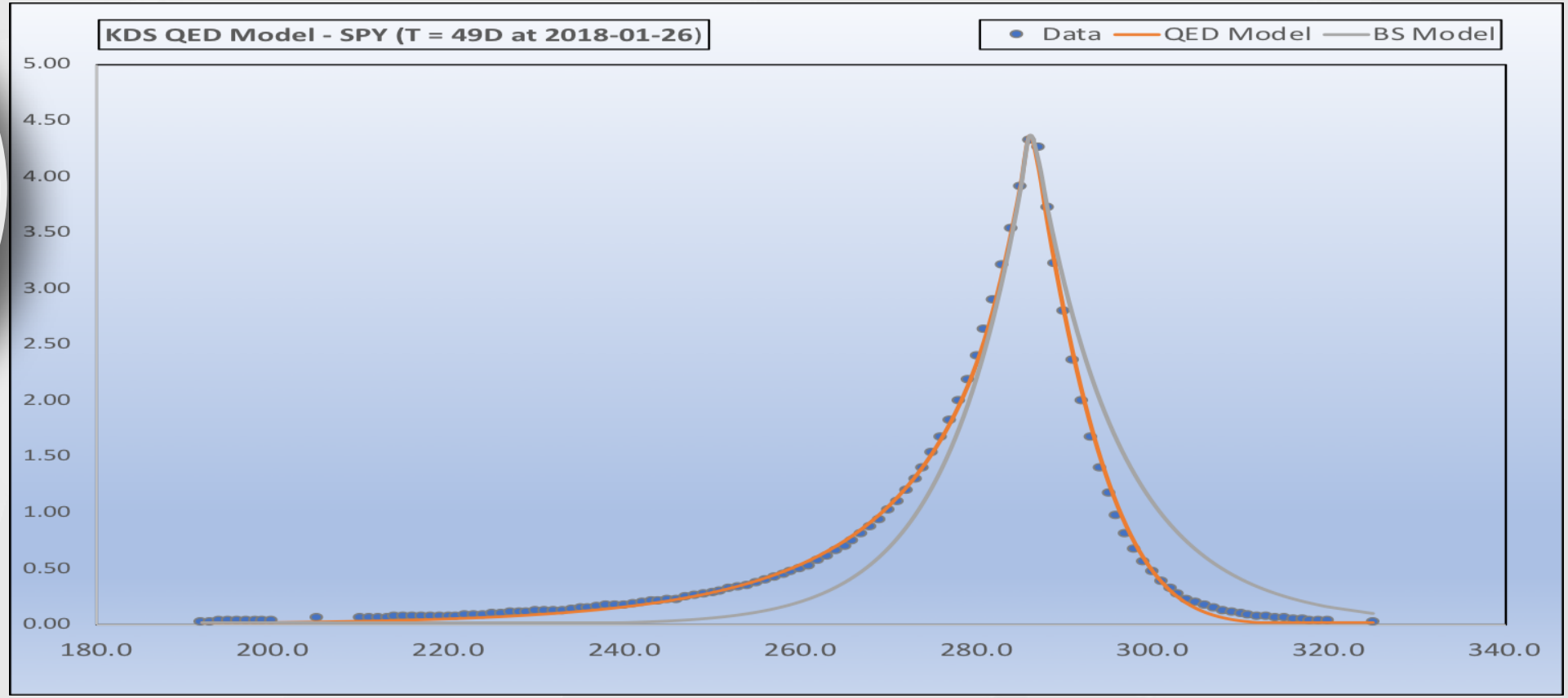

- The chart shows the out-of –money(OTM) option price as a function of strike for the SPY exchange traded fund. The solid lines represent the models (QED in red and BS I blue) and the circles are the market data on Jan 26, 2018 for SPY options with 49 days of maturity.

QED Results-SPY (Monthly Options)

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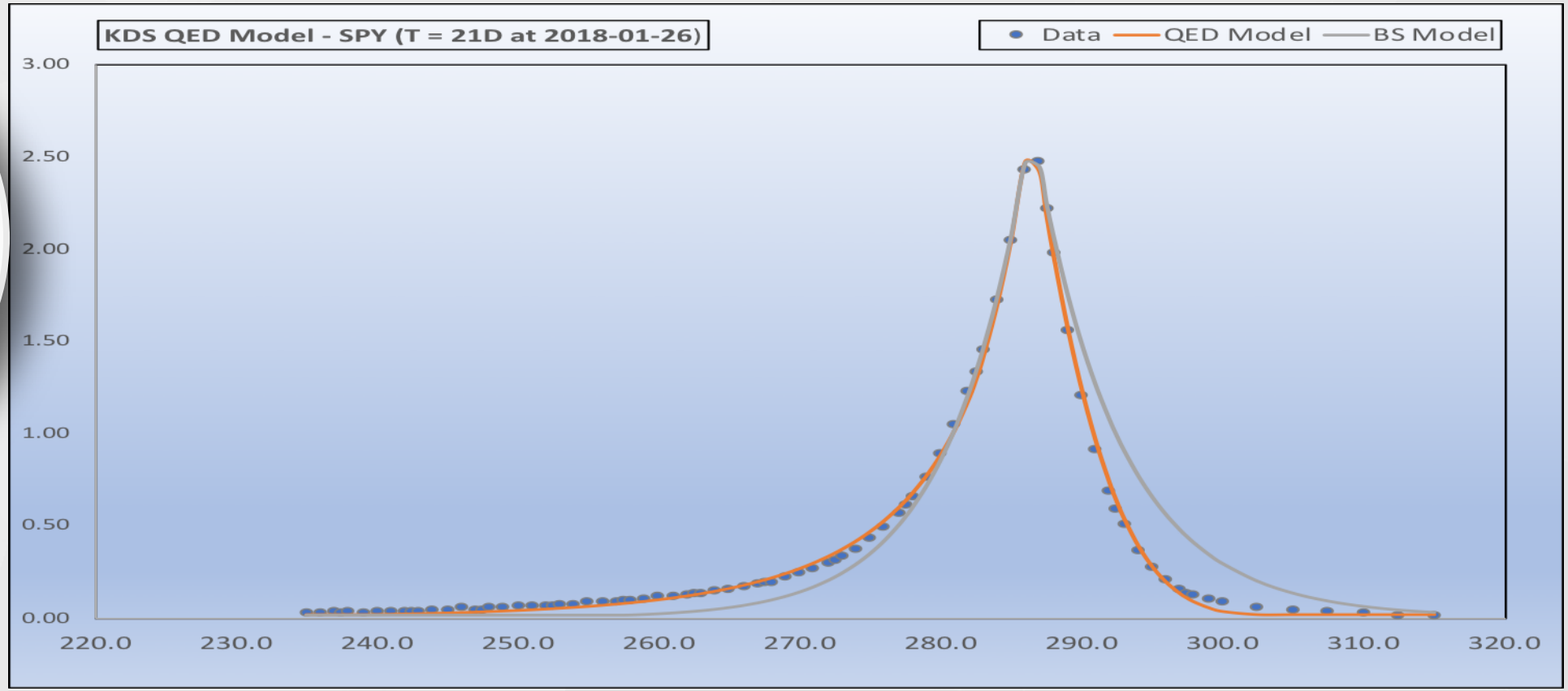

- The chart shows the out-of-money (OTM) option price as a function of strike for the SPY exchange traded fund. The solid lines represent the models (QED in red and BS in blue) and the circles are the market data on Jan 26, 2012 for SPY options with 21 days of maturity.

QED Results-SPY (Weekly Options)

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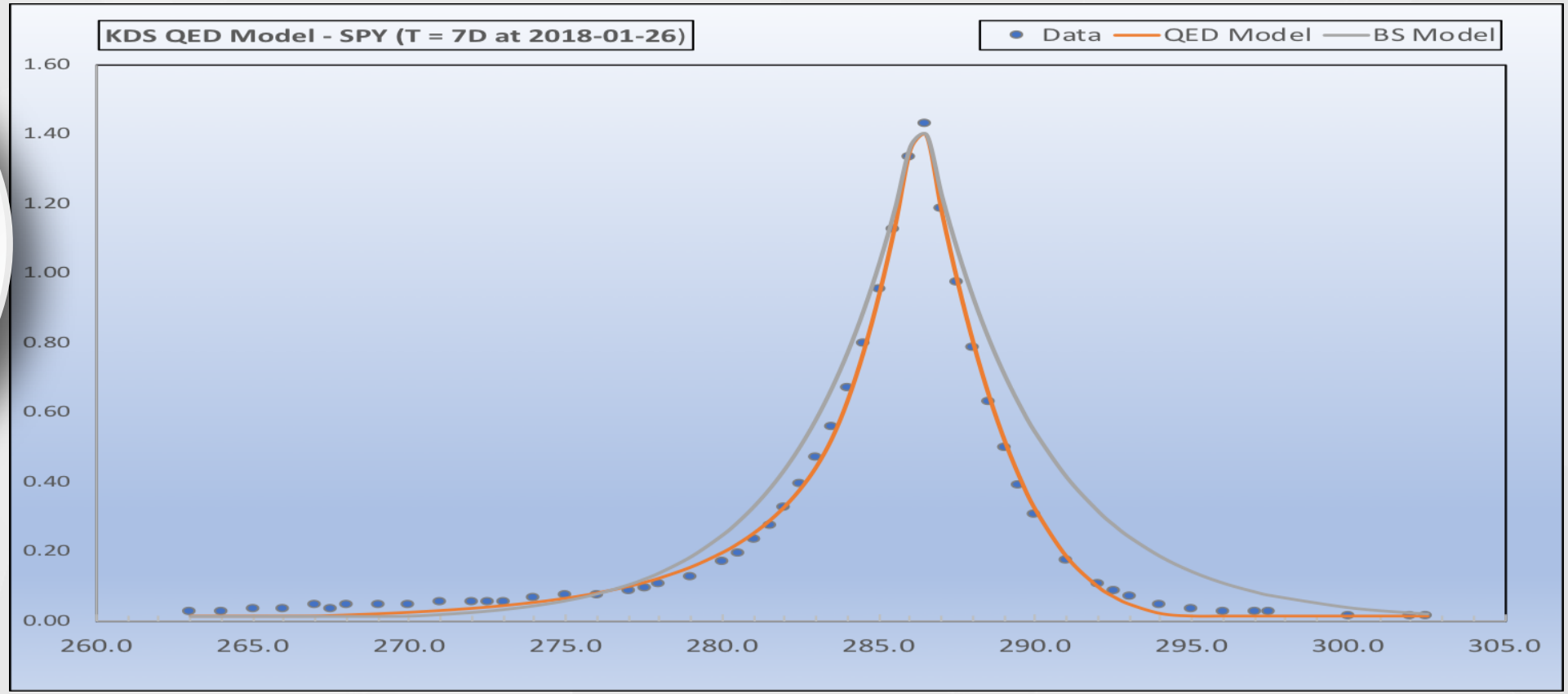

- The chart shows the out-of-money (OTM) option price as a function of strike for the SPY exchange traded fund. The solid lines represent the models (QED in red and BS in blue) and the circles are the market data on Jan 26, 2012 for SPY options with 7 days of maturity.

Information on Price Movement

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- The BS model provides only one piece of information
  - ✓ Implied volatility
  - ✓ Don’t know if it is good (upward)or bad (downward)
- The QED model provides five pieces of information
  - ✓ Positive implied volatility (good)
  - ✓ Negative implied volatility (bad）
  - ✓ Upward movement speed
  - ✓ Downward Movement speed
  - ✓ Deviation of risk neutral condition
- The BS model is a special case of the QED model
  - ✓ Many option traders are still replying on the BS model because of its simplicity

Strategy Back Test

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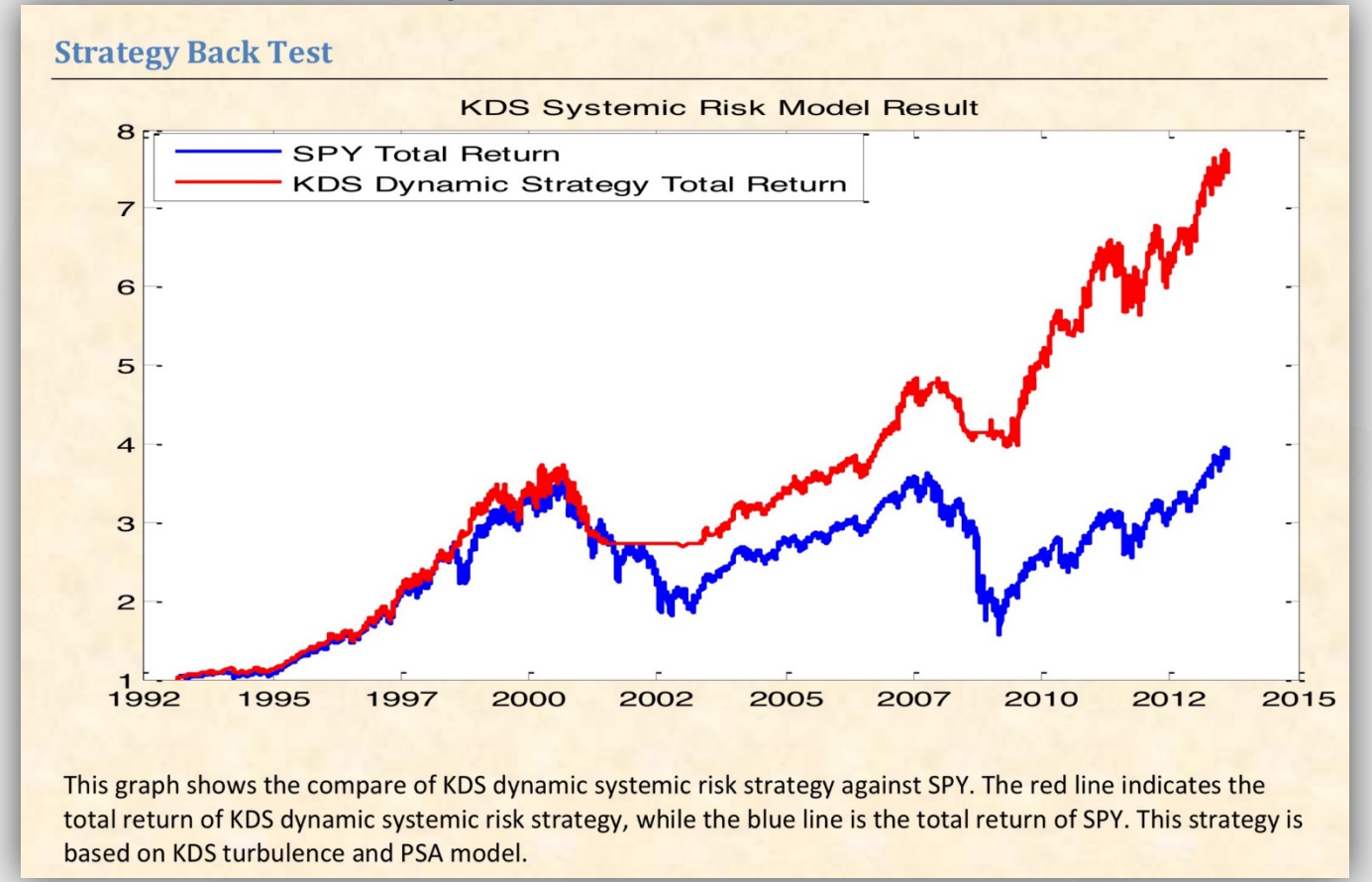
KDS Systemic Risk Model Result



- This graph shows the compare of KDS dynamic systemic risk strategy against SPY. The red line indicates the total return of KDS dynamic systemic risk strategy, while the blue line is the total return of SPY. This strategy is based on KDS turbulence and PSA model.

Trading Signal via CDS Model

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- The trading strategies and mispricing signals are amplified when combined with set of signal based models such as our proprietary Credit Default Swap (CDS) Model
- The CDS model uses stochastic credit risk framework which leverages the power of our interest rate model, real-time CDS market quotes, and correlation analysis of CDS against other asset classes.
- The CDS trading and modeling provides extremely valuable signals integrated within the equity derivatives and futures trading system.
- We use the CDS signals, along with N-dimensional layers of economic data, to do the “Slice and Dice” data analysis (discussed next slide)and advanced querying to achieve in-depth trade analysis, correlation analysis, leading/lagging indictors, and trade idea generation.

Structured Derivatives Fund (SDF)-Structured Capital Allocation

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- The Structured Derivative Fund utilizes global optimization techniques to allocate capital in such a structure that achieves the best yield targets, as per the investor's risk/return profile.Furthermore,the allocation utilizes 10% of the capotal as Reserve(for liquidity and capital reserve requirements),30% for Fixed-Income strategies, and 60% for Equities and Derivatives based trading strategies, as per the table below.

Table: Capital Structure per every $ 10MM

Tranche	Size ($)	Size (%)	Credit Support*	Example Leverage Ratio	Risk-Adjusted Return Targets
Equity Trading	3,000,000	30.0%	50.0%	3.0x	9.75%
Derivatives Trading	3,000,000	30.0%	30.0%	3.5x	11.25%
Fixed-Income	3,000,000	30.0%	10.0%	2.0x	13.50%
Reserve Account	1,000,000	10.0%	0.0%	N/A	2.50%
Total	10,000,000				

- Credit supports are based on a dynamically optimized subordination methodology to give senior investors senior position while giving subordinate investors access to higher risk-adjusted returns.

Structured Derivatives Fund(SDF)-Allocation Details

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- As described in the table above, the trade capital allocation is a dynamic process as shown below(with remaining 10% allocated towards capital reserve account):

Equity Trading(30%)- This allocation utilizes trading strategies on direct equities, indexes, and exchange-traded funds(ETFs)traded across multiple exchanges and Dark Pools. The trading strategies are based on delta-neutrality,leveraged ETF arvitrage,and high-probability mean reversion using high-speed data which is sliced & deced using a massivelyparallel UBX indexing system(details shown next slide).

Derivatives Trading (30%)-This allocation utilizes trading strategies on equity index derivatives, options, and index-futures contracts (such as on CSI-300 index). These trades are based on highly calibrated and globally optimized volatility surface analysis, Mont Carlo simulation, and Brownian Motion/Diffusion methods as modeled in the QED framework.

Fixed-Income Trading(30%)-This allocation utilizes trading strategies on fixed-income securities such as CMBS and RMBS bonds. The strategies also cover Credit Derivatives such as CDS on loans and /or securitized bonds, IOS indices, IO and Inverse-IO bonds, and other structured cashflow products. These trades are based on Monte Carlo cashflow engines, with underlying interest-rate and forward curve models feeding high-resolution data.

Structured Derivatives Fund(SDF)-UBX Core Technology

KDS Global LLC

- All of the above strategies rely upon a common mathematical and quantum/physical framework,which is based on Quantum ElectroDynamics, Brownian motion,and diffusion which can occur based on any number market stimuli(i.e.scattering).

  Furthermore, the success of the strategies above are heavily due to the data analysis and “slice&dice” which is provided by the UBX Core Technology in 3 levels. This framework allows extensive indexing on extremely large number of variable fields (examples shown below).
- Furthermore, the level 1 input data is based on high-resolution intervals such as millisecond and /or second-level data, depending on the field, and therefore all of the data indexed within the UBX has the millisecond and /or second-level accuracy.

TableID	fits	bid	asksize	Theta	Historical Vol	epsilon-
DTN-Symbol	series	ask	maturity	Rho	Nu+	Delta
Resolution	r	type	ModelPx	Sigma	Nu-	R
calib-time	q	last	Conf	Sigma+	method	f+
spot	T-year	volume	Delta	Sigma-	alpha+	f-
time	spot	OpenInt	Gamma	Implied Vol	alpha-	g+
last-time	strike	bidsize	Vega	Instantaneous Vol	epsilon+	g-.

Structured Derivatives(SDF)-Risk Management Workflow

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- As evident above, the SDF is structured in the way that it provides multiple layers of risk management for the protection of investors while providing extremely lucrative return on investment as per the dynamic capital allocation.
  - ✓ Option Portfolio is invested in major US and Global Index Options and Futures with high liquidity hence performance is improved with tight bid-ask spreads.
  - ✓ Option Portfolio Risk Management Workflow is deployed in monitoring real-time P&L ,Confidence %, Long/Short Ratios, Greeks, Loss Triggers and Threshold, with ability to do real-time “slice and dice” of all trading, performance, and risk metrics.
  - ✓ Option portfolio only places hedged positions, in addition to the structure’s built in credit support, to cover the market risk, including strategies in covering the potential “Black-Swan” events.
  - ✓ Structure Cashflow Waterfall is designed to provide credit enhancement of the issued allocation structure. The bearing return rates reflects the risk premium positioned in the waterfall, and the risk-adjusted return reflects the expected return the investor should expect after taking into consideration all possible market scenarios, including extremely negative “ Black-Swan” events, and that in all the possible market scenarios, there is expected ZERO LOSS for the debt classes.

Risk and Portfolio Management System within the KDS Trading Platform

- The EOD Risk and Portfolio Management System tracks risk and P&L changes on the portfolio level on a real-time basis.

✓ Traders are immediately alerted when risk-levels breach optimal thesholds.

✓ Additionally, the corresponding hedges are automatically constructed by the risk management system to get the portfolio back into the optimal risk state.

✓ The system identifies trades that become inefficient with respect to the real-time market, so that traders are aware which trades are not meeting the optimal risk profiles.

✓ This is analogous to ensuring that the trades on the optimized “Efficient frontier” in Modern Portfolio Theory as formalized by Harry Markowitz.

✓ For each confidence level, the models assess the corresponding available prmiums (e.g. returns) and then determine the set of optimal trades for those confidence levels. This is equivalent to the efficient frontier for equity derivatives.

SDF“Sub-Structure”Flowchart

Monte Carlo Framework

KDS Global LLC

- To model the SDF dynamics, we utilized a Monte Carlo engine which uses capital structure tranching in order to develop a risk versus return relationship among the various investors.
- This type of Monte Carlo based structured model allows us to accurately describes the true risk and return profiles of the various investors.
- The SDF waterfall flows provides credit enhancement through structured allocation and optimized subordination structure, and provides additional risk management using built in reserve and loss triggers.
- The waterfall logic creates cashflows which are hooked up to a Monte Carlo framework that allows us to see the outcome of the capital structure pricing over thousands of scenarios, including Black Swan events which allow us to provide sufficient amount of credit protection to all “risk averse”debt holders so that they should never expect to see a single dollar of loss.

Investment Strategy Underlying the Fund

KDS Global LLC

- The Concept of Manifolds in out Derivatives Trading Strategies:
  - ✓ The concept of manifolds is indispensable to the understanding of advanced mathematical physics,from
  - ➢ Elementary particle physics,
  - ➢ Quantum Electrodynamics,
  - ➢ Cosmological universe,
  - ➢ To the grand unification of the fundamental laws of nature
- Manifolds allow physical processes in both the infinitesimally small and infinitely large scales to be expressed in a unified differential geometry, with more clarity in understanding and greater accuracy in modeling.
- With respect to the unification of the fundamental laws of nature, manifolds serve as the smooth phase spaces in both infinitesimal and infinite structures of the universe, in which our views of space、time、momentum、and energy in general relativity have been transformed from the classical Euclidean space to the four-dimensional Lorentzian manifolds.
- In the context of options trading subject to the risk neutrality constrains function, a manifold represents the differentiable short range structures in a stochastic diffusion processes.

Visualization of Volatility Manifolds in Option Pricing

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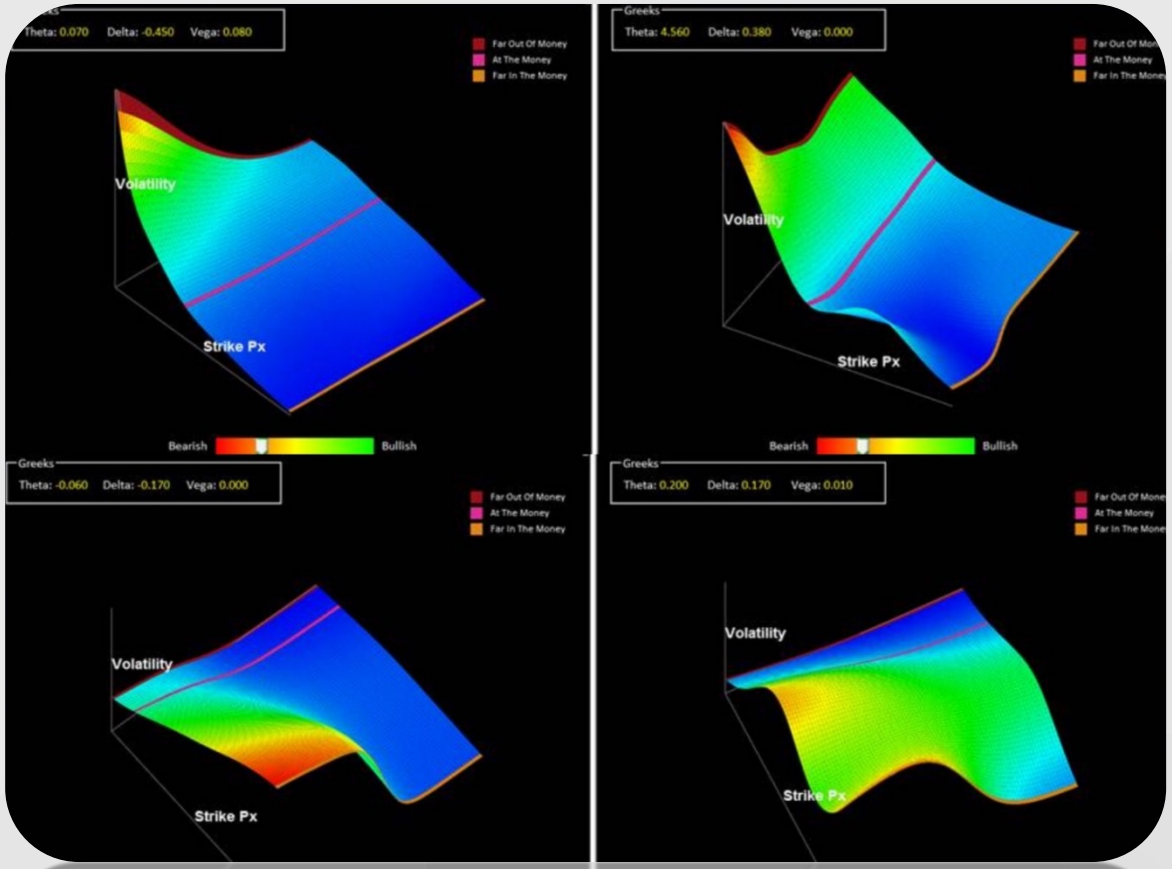
- The two diagrams below illustrate how manifolds can be visualized from the QED RTS topology for TNA and VXX.



Trading Strategies

KDS Global LLC

- The fund utilizes the KDS Euity Derivatives Trading System and Real-Time Pricing Models,which are based on American Short-Range Jump Quantum ElectroDynamics （QED）techniques which bypass the classical Brownian Motion-based options pricing approach.
  - ✓ QED platform utilizes advanced option pricing models using Monte Carlo framework
  - ✓ High Probability Mean Reversion(HPMR)strategies
  - ✓ Time decay(Theta)strategies
  - ✓ Spread based strategies(vertical/calendar spreads)
  - ✓ Underlying ETF buy/sell strategies
- The above strategies utilize elements from the traditional fund categories including:
  - ✓ Volatility Arbitrage
  - ✓ Statistical Arbitrage
  - ✓ Algorithmic Trading
  - ✓ Long/Short Equity Growth

Theta(Time Decay)Trades

KDS Global LLC

Theta(Time Decay)Trades

- ✓ In the Theta(Time Decay)trades, we isolate the theta risk by trading in the 60%-70% confidence range(at maturity).
- ✓ This trade strategy is leveraging a much shorter time period for option prices to converage.
- ✓ Thereby we can construct premium-based trading strategies(i.e.Sell Put/Call trades) to take advantage of not only the probability of nonexercise, but also the speed of decay.
- ✓ Timing of entry is critical as confidence levels can quickly shift when market experiences short range jumps. This is why the QED outputs REAL-TIME pricing results using the so-called “Movie” of histograms.

Spread Trade Strategy

- ✓ Spread strategy utilizes the HPMR strategy at lower probabilities, and in exchange for higher premium received, the trader can then buy-back risk at even further OTM strikes.
- ✓ This selling and buying back of different strikes results in a “spread”which can be done vertically(i.e. same maturity) or calendar style(i.e. various maturity).
- ✓ Thereby allowing traders to utilize theta and vega combinations in these trades, as well as creating various limited downside scenarios for risk management.

Equity Derivatives “Greeks”

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- Theta： Time decay.Option strategies based on theta leverage the fact that option trades across various maturities have quantifiable behavor properties.
- Vega： Volatility. Option strategies based on vega leverage the fact that volatility can be isolated when certain spread trades(such as calendar spread) are utilized.
- Delta： Price impact.The underlying ETF’s price changes obviously have a fundamental relationship to option prices, however that relatioanship is not intuitive and can behave in a highly nonlinear fashion, especially due to the fact that it is very difficult to isolate delta impact from vega and theta.
- Gamma： Second order price impact,which is the rate of change the Delta will change for a $1 move in the stock. This is a measure of the curvature of the delta.

Delta/Gamma Hedging-MTM Risk Management

KDS Global LLC

- Using our Risk Management system integrated into the OMS,traders are able to select a “Delta Neutral”and “Gamma Neutral”hedge which was identified by the system.
- The exact dollar amount of Delta and Gamma hedges give traders definite MTM risk management solution,while also giving traders flexibility to tailor the hedge corresponding to the fund’s required hedge ratio.
- The Gamma risk is the second-order effect（similar to bond convexity)which is quite noticeable hedges no longer “neutralize”the MTM risk.
- To avoid this Gamma risk, we employ the Gamma neutral strategy which in our OMD is derived as an exact dollar amount which the trader needs to adjust in order to keep the portfolio neutral.
- “Black Swan” Events
  - ✓ Using the real-time OMS to monitor the multi-dimensional variables and signals, we can very quickly and clearly determine when abnormal activity leading to “black swan events” can happen.
  - ✓ Not only are we monitoring multi-dimensional signals in real-time in order to detect the market abnormal signals (and hence black swan events), we are also applying and triggering business logics that mitigate risks while setting up strategies to further profit from the detected risk signals.

Black Swan Protection Hedge

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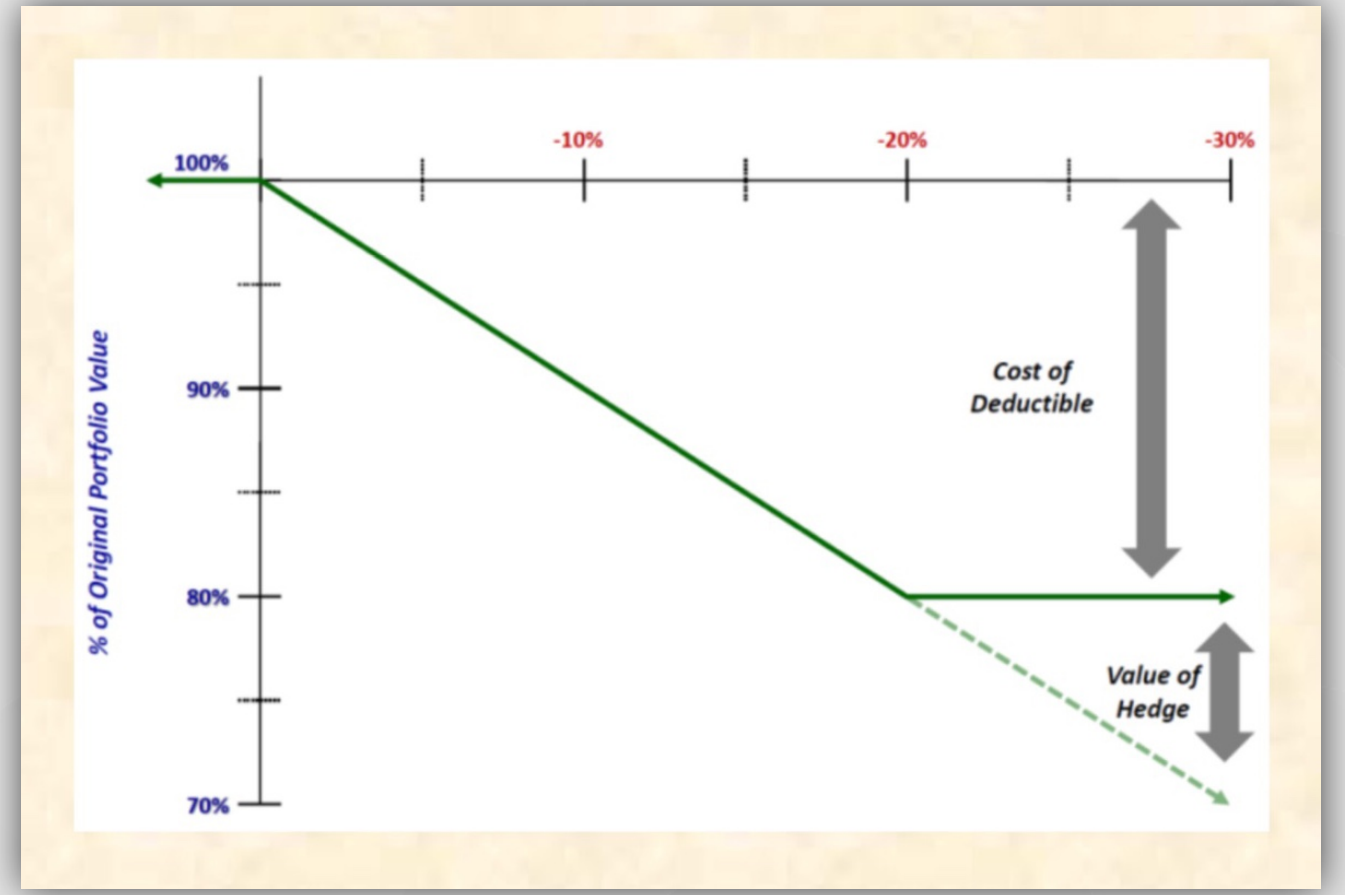
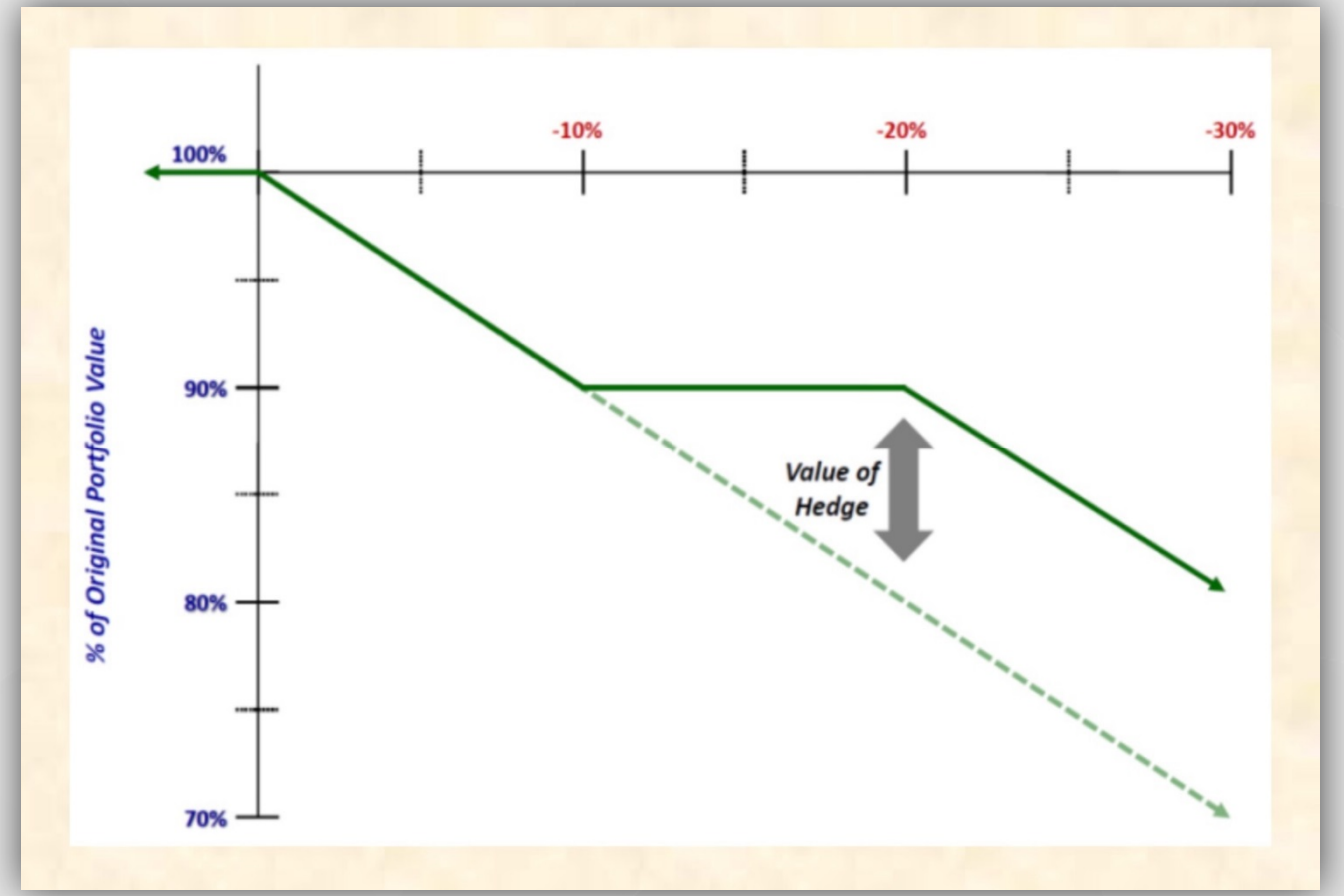
- A tail-event hedge that only pays off after a specified low-probability drawdown threshold is exceeded. This concept is very similar to an insurance contract with a “large deductible”.



Gap Protection Hedge

KDS Global LLC

- Gap Protection Hedge-This hedge incorporates similar features as the Black Swan protection hedge,but also includes a cap, with the result that the hedge pays off only in a specified range,such as from a 10%-20% drawdown, as shown below. In insurance terms, the maximum cap is similar to a “co-pay”.



Proportional Protection hedge

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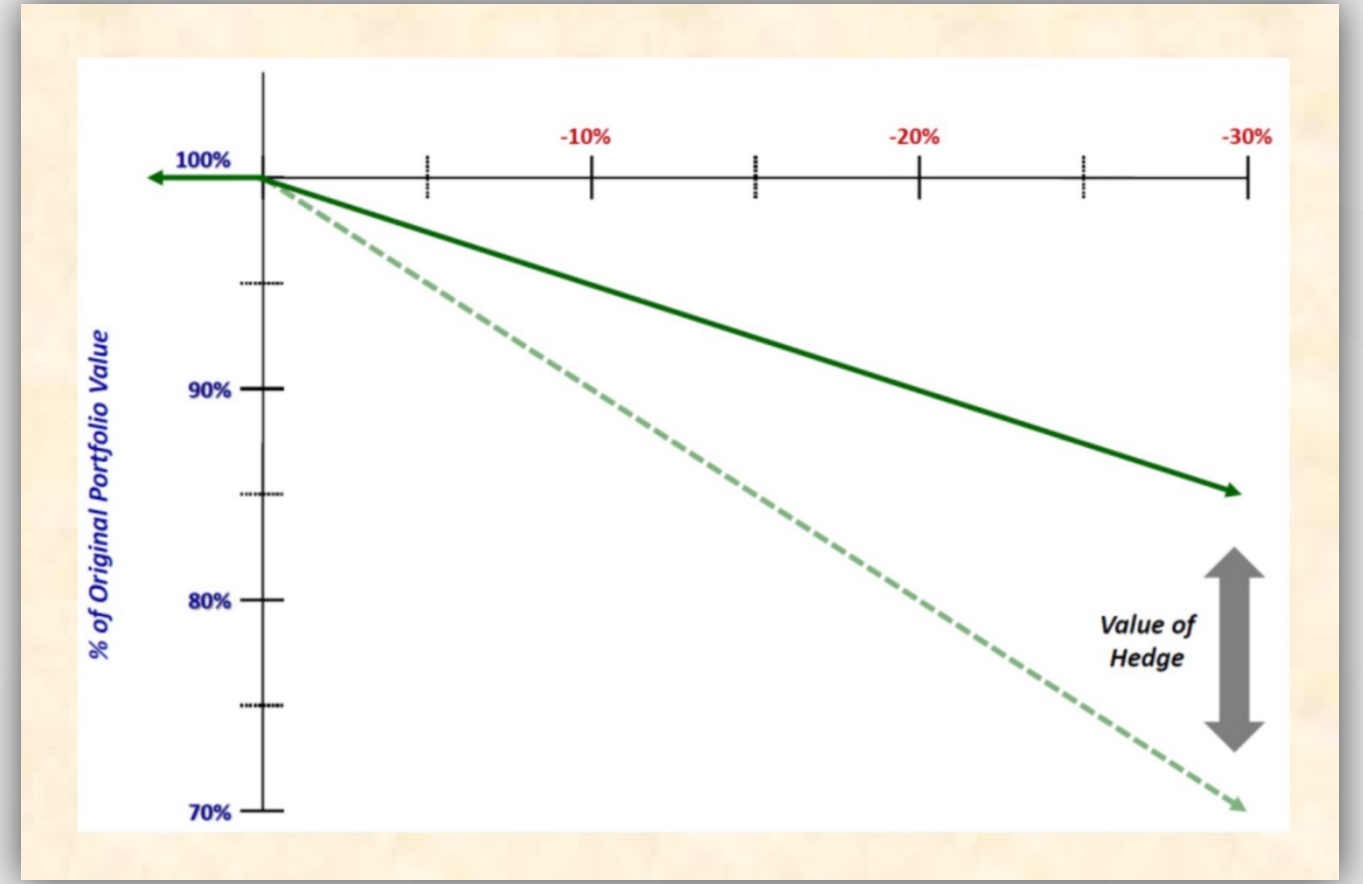
- Proportional Protection Hedge-Instead of using thresholds and caps,proportional protection provides insurance against losses for a fixed percentage of each dollar lost.The Proportional Protaction begins at the onset of the trade, but only covers a limited percentage of losses(similar to a “50% Co-Pay”).



Market Correlation Matrix

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- The underlying securities of the equity derivatives have an intrinsic correlation among the trades within the portfolio. Instead of simply applying a basic long vs.short metric to distinguish between underlying ETFs,our QED model utilizes a Market Correlation Matrix which calculates on a daily basis the true correlation R-squared value of every trade against the true market movements.

Using the Market Correlation Matrix,the output of the Greeks,portfolio P&L, and performance ratios(described below)are accurately capturing the complex relationship and interactions between all the trades in the portfolio. Traders thus can know exactly what a n-% move within the market S&P 500 would uniquely relate to for every position in the portfolio-a knowledge that sets apart the EOD framework from every competitor because the intrinsic correlation relationship between all trades in the portfolio are known and therefore stressing the portfolios in new scenarios can further show how this correlation/relationship evolves with respect to a given shock.

Trading Strategies Criteria

KDS Global LLC

- With respect to the portfolio,we have been executing quantitative strategies which are utilizing the models and OMS to achieve the managing and executing complex options and futures strategies as well as trade purely on streamlined derivatives mispricings in higher frequency.
- Upon securing leverage structure,trading objective is to ramp new positions with corresponding hedge to take advantage of short-range signals for options as well as long-range signals for futures, while continuing offloading converged positions such that the hedge ratio is optimized. Primary trading objective upon securing of the 6-1 leverage structure is for SDF t maintain and improve profitability and risk neutrality while maximizing trade volume and optimizing capital allocation.

✓ The strategies utilize the RTS to find both left and right side intra –day price and volatility anomalies with respect to high probability of non-exercise, and trades are executed such that the Theta decay is selected to be as short as possible while Delta risk is continuously hedged, such that the portfolio maintains Delta neutrality.

Trading Strategies Criteria

KDS Global LLC

- The advanced real-time Order Management System(OMS)incorporates a robust embedded trade linking to RTS P&L profiles based on all TRADE ID's over extremely large and scalable portfolios,and OMS back-end tracks the close dates of all transaction for better trade accounting.
- Within the OMS, the profit and loss concentration metrics and the leptokurtic distributions are monitored in real-time in order to accurately optimize the trade-level portfolio-level position management,as well as continuing to monitor real-time MT ratios for Delta,Gamma, and Vega neutrality.
- These real-time leptokurtic P&L Concentration functions within the OMS provide traders,investment committee,and broker dealer access to the real-time distribution on an asset-and portfolio-level in order to better gauge skewness of how much or little a given trade's sensitivity to the overall portfolio profitability.

Trading Strategies Criteria

KDS Global LLC

- The capital allocation formula utilized in conjunction with the trade execution accounts for multi-leg trades such that capital is optimized in complex trade situations with corresponding hedging and offsetting legs, which greatly improves ability to ramp positions and maximize profitability without incurring unnecessarily large capital requirements.
- The “Slice and Dice”ability within trading system which leverages off the powerful UBX proprietary algorithms, allows advanced tracking and querying of market data, OMS real-time results, and model generated output.
- Advanced time series analysis such as the premium decay time-series of trades and portfolios, as well as additional Monte Carlo analytics and calibration data are all steamlined into the UBX so that extremely fast and accurate real-time slicing of data can be done for both trading and risk management purposes,including ad hoc requests for stress testing and margin call analysis.

Example of Double-Short ETF Strategy

KDS Global LLC

- As per the trading strategy criteria outlined above,the Double-Short ETF strategy capitalizes upon the leveraged inefficiencies found in the market on the simultaneous pricing of 3X ETFs, which profits off of the inconsistencies of the market prices which then converge to an arbitrage-free state over a short-term horizon:

✓ The strategy works on 3X ETFs, where the trader enters short position simultaneously on both the 3X long and the 3X short ETF legs(i.e.going long ong both legs will not work).

✓ Once this has been done,the trade must maintain delta neutral for both legs of the short position. However, delta-neutral hedging is optimized so that it does not need to be re-hedge everyday, thereby saving a lot in transaction costs. Our methods have been calibrated to rebalance approx. every 3-5days,when the delta mismatch is outside of the tolerance.

✓ The next requirement of this strategy is that the trades need to be applied on at least 3X or greater times leverage for the short positions in order to achieve double digit returns, as this is where the greatest price-inefficiencies in the ETF market are found.

Example of Double-Short ETF Strategy

KDS Global LLC

- ✓ The trade is capital-protected,in the sense that the process cannot lose money on the trades, such that the worse scenario that can happen is that the position ends up flat(zero loss).
- ✓ As the profitability of this trade relies upon the 3X leverage ETF,the capital reserve requirements can be large on these high-volatility securities and require a large upfront capital which can reduce returns. To mitigate this, the strategy must be paired with an investor margin account to fully take advantage of the potential profits. The margin account is not established through the brokerage, so that more flexibility is allowed on the re-balancing of the strategy,where the brokerage can perhaps be restrictive.
- ✓ Furthermore, the timing and sizing of the trade is a fundamental step that is heavily requires the QED calibration methods#1 and /or #2, which are to find the global minimum for ultimate optimization(the calibration is Not a local optimization, as our models aim to find the true global extrema). Both timing and sizing of the this trade are globally optimized, yielding the best return on investment.

Hedging and Portfolio Optimization

KDS Global LLC

- During the hedging process, he spread treads are based on optimizing the P&L while mitigating unneeded risk. These risks are assessed using the Greeks metrics, which are effectively the Theta、Vega、and Delta.
- The KDS trading system and strategies allow us to not only hedge the trading strategies such that the downside risks are minimgrized, but also that the profitability is maximized and unnecessary “Greek”risks are isolated.
- When hedging against the Theta,or Time decay, we ptimize option strategies that leverage the fact that option trades across various maturities have quantifiable behavior proberties.
- Similarly, when hedging against the Vega,or Volatility,we optimize option strategies that leverage the fact that volatility can be isolated when certain spread trades(such as calender spread)are utilized.

Hedging and Portfolio Optimization

KDS Global LLC

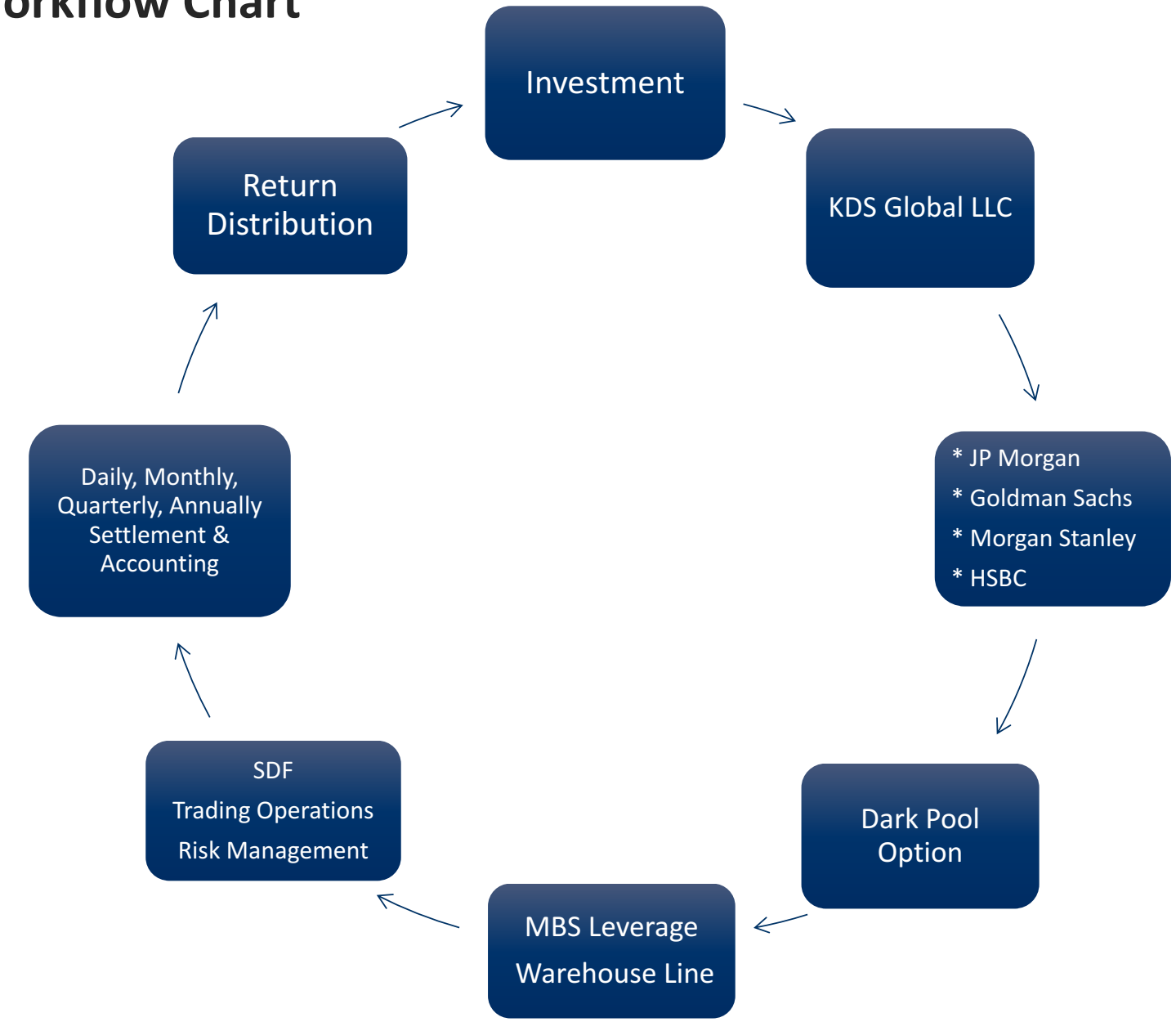
- When hedging Delta or price impact, we optimize trades such that strategy is defined based on the underlying index's price change's fundamental relationship to option prices. Such relationship is not necessarily intuitive and can behave in a highly nonlinear fashion, especially due to the fact that it is very difficult to isolate delta impact from vega and theta.
- Since the portfolio of derivatives trades, including futures and options, comprise basket of individual and unique risks, the optimization process combines such risks so that the combinations of trades collectively eliminate the "idiosyncratic" risk and thereby exhibit smoother convergence properties.
- Additionally, since the key to most of the options and futures trading strategies is liquidity and ability to trade and analyze OTM(out of the money)options, optimizing trades on a trade-based and portfolio-based level gives traders the ability to trade range of OTM securities, and not be limited to near-the-money(Mean-based)trades.

Delta Hedging and Market Neutrality

KDS Global LLC

- In addition to the risk management system producing portfolio risk metrics, there is also a real-time delta-hedging functionality that allows every trade to stay optimally hedged.
  - ✓ Using our Risk Management system, traders are able to select a “Delta Neutral” hedge which was identified by the system.
  - ✓ This hedge selection process finds the optimal option legs such that MTM risk is mitigated while trade decay and mean reversion occurs.
  - ✓ The list of applicable Delta-hedges give traders definite MTM risk management solution, while also giving traders flexibility to tailor the hedge corresponding to the fund’s required hedge ratio.
  - ✓ The risk management system utilizes the RTS as well as the nonlinear calibration and Monte Carlo pricing engine to analyze and identify all passible hedges, such that the optimal delta-hedges can be achieved.

SDF Workflow Chart



KDS Global LLC

Structured Derivatives Fund

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