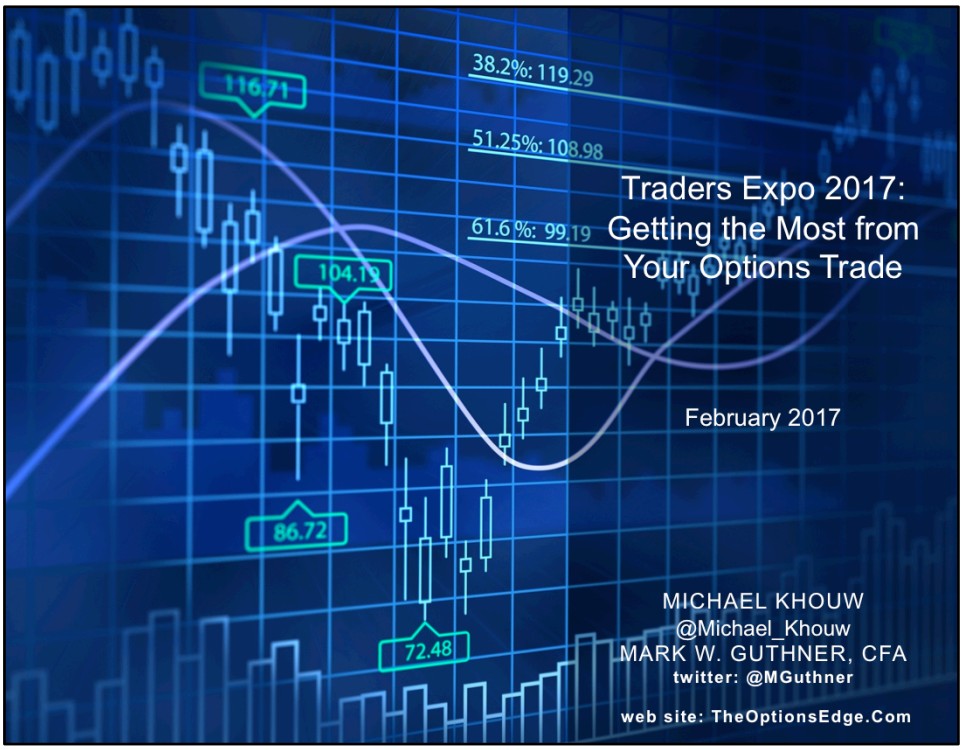

Traders Expo 2017: Getting the Most from Your Options Trade

February 2017

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$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

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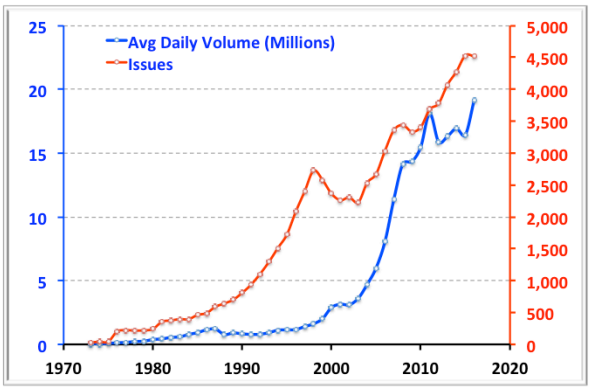
$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Growth in US Exchange Listed Equity Options



COMPOUNDED GROWTH RATES

Volume: 20.4%

Issues: 12.2%

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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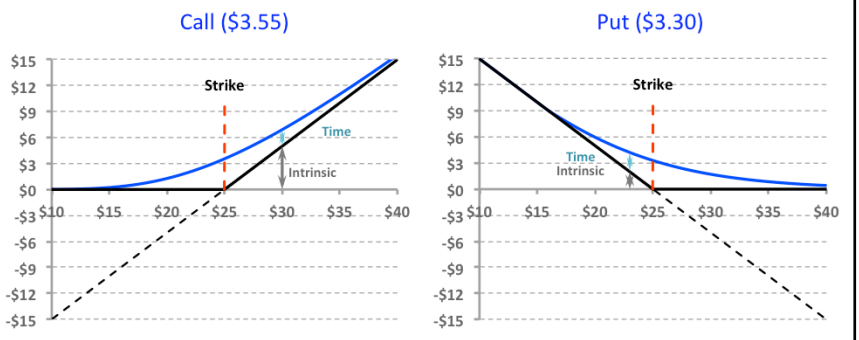
- Listed options are the fastest growing financial product in the market place today.

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Price of an Option vs. Price of the Underlying



Terms of Options on Company ABC

Price = $25.00
Strike = $25.00
Time to Expiration = 1.0 Year
Volatility = 35%

Dividend Yield = 1%
RFR = 2%

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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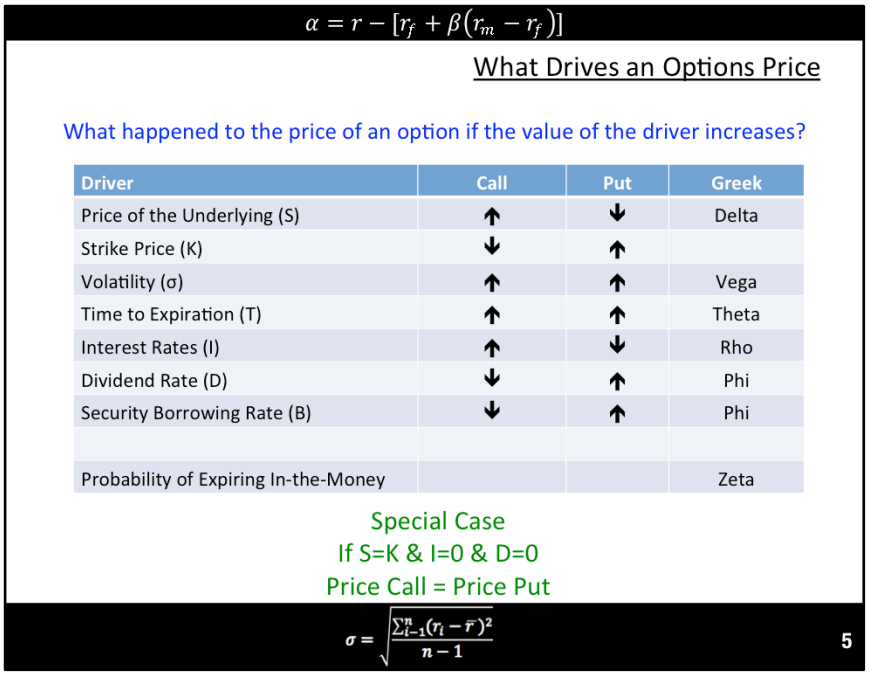
- The greatest feature of an option is “limited risk”
  - Payoff for a call
    - If you bought a stock, your gain and loss would follow the dotted line in the found on the left hand side of the slide above.
    - If you bought a call options, your gain and loss would follow the blue line.
  - Payoff for a put
    - If you sold short a stock, your gain and loss would follow the dotted line in the found on the right hand side of the slide above.
    - If you bought a call options, your gain and loss would follow the blue line.



- There are a number of factors that drive the value of an option
- The chart above shows what happens to the price of put & call options given a change in a valuation factor
- The most important factors to keep an eye on are delta, vega and theta
    - Delta
        - The price of a call rises if the price of the underlying rises (delta positive)
        - The price of a put rises if the price of the underlying falls (delta negative)
    - Vega
        - The price of both a put and call rises when implied volatility rises
    - Theta
        - The price of both a put and call rises as the time to expirations increases

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Relationship Between Puts & Calls

Put – Call Parity

Assume K & T are the same:

Cash + Call = Stock + Put
Cash = Strike x $e^{-(r-d)t}$
$24.75 = $25.00 x $e^{-(2\%-1\%)1}$

Cash	=	$24.75
Call	=	3.55
Total	=	$28.30
Stock	=	$25.00
Put	=	3.30
Total	=	$28.30

If Cash + Call < Stock + Put,
Then There is a Cost to Borrow the Underlying Asset

- Decreases value of a Call
- Increases the Value of a Put

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- Put call Parity
- Cash plus a call will give you the same return as owning the stock along with a protective put
  - Assumptions
  - Time to expiration is the same
  - Strike price is the same.

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Traditional Approach
to
Directional Options Trading

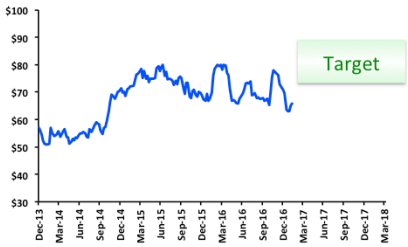
$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Most Investors Try to Predict an Assets Future Price

Typical Bullish Strategy

Target Corp (TGT) $65.79 on Feb 17, 2017



Buy 70/75 Call Spread, 5.0 Months to Expiration
Future price must exceed $71.19 to earn a profit

	Buy	Sell	Net	BreakEven
RFR	0.70%			
Div Yld	3.65%			
Strike	70	75		$71.19
Expiration	7/21/17	0.42 yrs		
Volatility	22.9%	21.7%		
Price	$1.97	$0.78	$1.19	
Probability Going Above	28%	14%		25%

Stats assuming a random walk

- ❑ 25% Chance of a Gain
- ❑ 14% Chance of Maximum Gain
- ❑ 75% (1-25%) Chance of a Loss
- ❑ 72% (1-28%) Chance of Maximum Loss

Structure meets typical option investor's gain/loss criteria.
(i.e. Potential gain is 3.2 times capital placed at risk)
Risk $1.19 with the chance of earning $3.81.

Is this really the best way to structure a bullish trade?

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- When an options investor is bullish, they typically buy an at or more typically an out of the money call or call spread
  - Risk is limited to the premium paid
  - Potential returns is a multiple of money put at risk
  - The probability of success is less than 50%
- Is this the best way to go.

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Are options fairly priced?

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

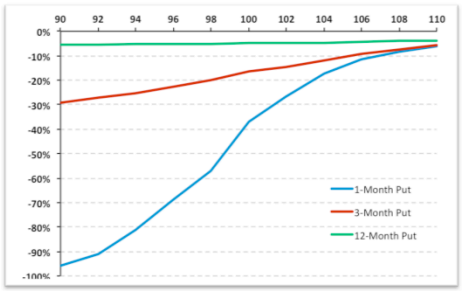
$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Are Options Fairly Priced?

Test Theory: Put Options Should Generate a Negative Rate of Return

Returns/Mo for Put Options on the S&P500

Out of the Money <----------> In the Money



Data Source: Bloomberg, Time Period Studied: Jan 2005 to Oct 2016

Being a negative Beta Asset, Put Options Should Generate Negative Rates of Return. History bears this out.

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- Longer dated options outperform shorter dated options
- In the money options outperform out of the money options

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Theory:

For the buy & hold investor, returns are driven in part, by path dependency

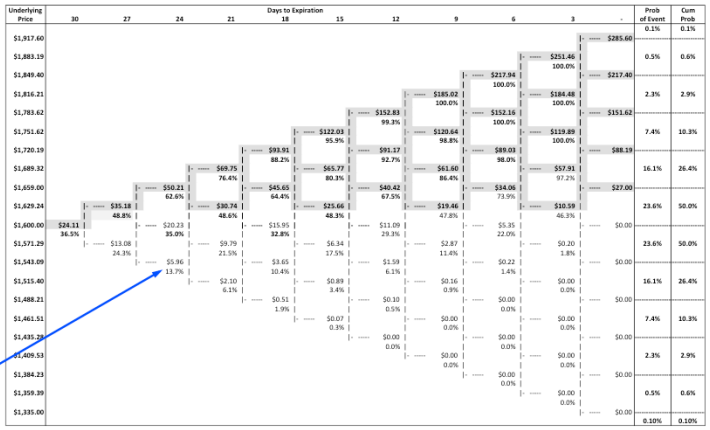
Take S&P500 for Example
S = $1,600

Call Assumptions:

K= $1,632
Vol. = 20%

Price = $24.11
Zeta = 36.5%

Option Price & Probability of expiring in the money



The buy & hold option investor needs the appropriate directional move (autocorrelation) of sufficient magnitude to capture value.

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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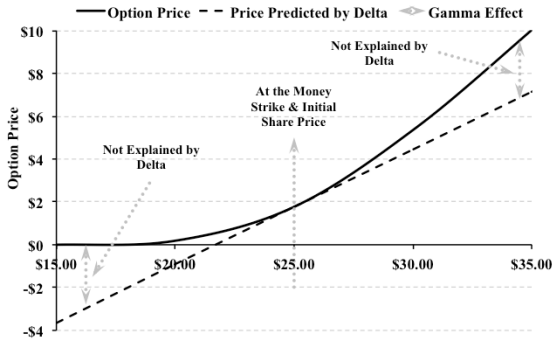
- Most people trade options with a directional objective in mind
- To be successful, the investor must get the timing and direction right

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

How Options are Priced and How they are Traded Usually Differs

Volatility Trading (Gamma Scalping, 3 Month ATM Option)



In a fairly priced option, what is gained by "Gamma," the bend in the curve, is lost by "Theta", the rate of time decay

If one does not continuously hedge, one needs autocorrelation (i.e. continuous price drift) to earn a return

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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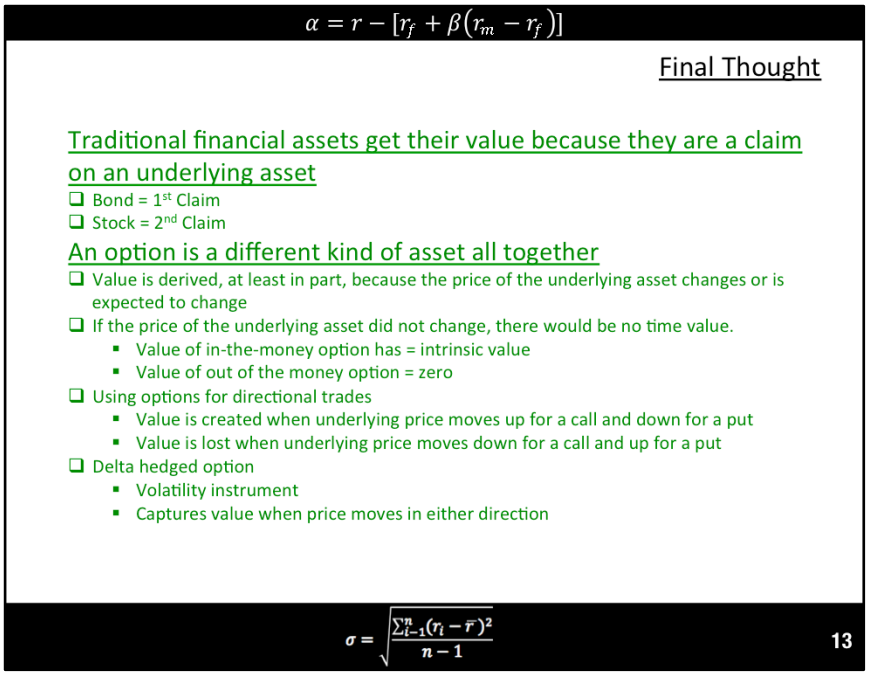
- Options are priced assuming the are continuously hedged against the underlying instrument
- The value of an options is dependent on volatility, not the expected return of the underlying asset
- How the typical investor uses an option is inconsistent with how they are priced



- The typical asset has value because it exists.
- An option has value because the price of the underlying is expected to change

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Implications:
Alternative Approach
to
Directional Options Trading

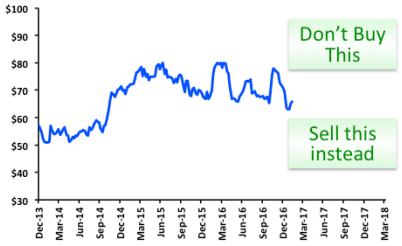
$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Don't trade to where you think price is going

Trade to where it is not going

Target Corp (TGT) $65.79 on Feb 17, 2017



Sell 55/60 Put Spread, 5.0 Mo. to Exp.

	Buy	Sell	Net	BreakEven
RFR	0.70%			
Div Yld	3.65%			
Strike	60	55		$59.04
Expiration	7/21/17	0.42 yrs		
Volatility	29%	33%		
Price	$1.84	$0.88	$0.96	
Probability Going Below	37%	21%		34%

Short Puts Spread vs. Long Call Spread

- Higher Probability of Success
- Higher Probability of a Max Gain
- Higher Expected Value of a Max Gain
- Smaller Maximum Gain
- Smaller Expected Value of Max Loss
- Less dependent on getting timing right

	Long Call Spread	Short Put Spread
Probability of a Gain	25%	71%
Probability of Max Gain	14%	67%
Max Gain	$3.81	$0.96
Expected Value of Max Gain	$0.52	$0.64
Probability of a Loss	75%	29%
Probability of Max Loss	72%	16%
Max Loss	$1.19	$4.04
Expected Value of Max Loss	$0.85	$0.63

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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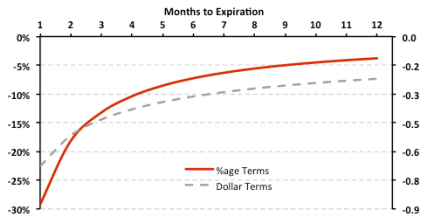
- Instead of buying a call spread when you are bullish, sell a put spread instead
- You put more capital at risk than a call spread, but
- The probability of success is much higher
-

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Theta: Time Decay



- Time Decay *Increases* as Time to Expiration *Decreases*
  - ✓ Percentage Basis
  - ✓ Dollar basis
- Similar Shape to Alpha Curves
- Manage Theta as a Proxy for Managing Alpha

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- The rate of price decay increases as the time to expiration falls.
- When buying options, buy longer dated ones
- When selling options, sell shorter dated ones

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Security Selection
&
Trade Structuring

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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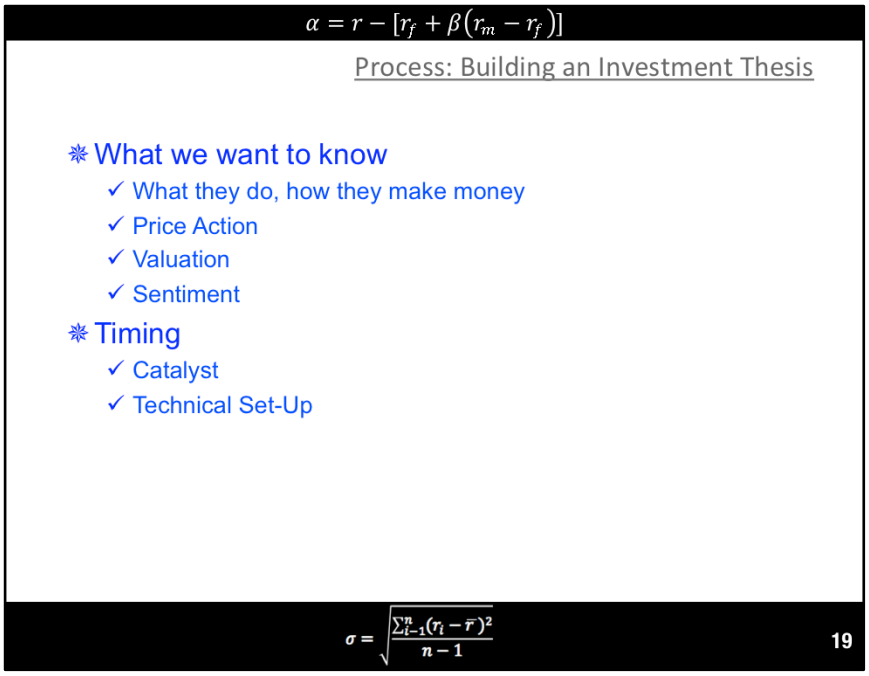
- Most investors look for stocks they believe are under priced
  - Buy and wait for the price to rise
  - The downside is that cheap stocks cheaper
- Our approach starts with running our "Expert System" over a universe of stocks (typically large cap stocks with liquid options)
  - Divide those stock into 3 categories
    - Those like to rise
    - Those like to fall
    - Those likely to trade sideways
  - Select the opportunities that with those categories
    - Buy those with highest probability of rising
    - Sell those with highest probability of rising
    - Sell volatility of those most like to trade sideways



- We look for price action, valuation and sentiment to come together to find the opportunities with the highest probability of success

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Example: United Rentals, Inc.

What They Do

- United Rentals, Inc. (URI) is an equipment rental company organized into two operating Segments.
  - ✓ General Rentals Segment: rents and leases construction and industrial equipment, such as backhoes, skid-steer loaders, forklifts, earthmoving equipment, and material handling equipment; aerial work platforms, such as boom lifts and scissor lifts. They also rent general tools and light equipment such as pressure washers, water pumps, and power tools. ***This segment serves construction and industrial companies, manufacturers, utilities, municipalities, and homeowners.***
  - ✓ The Trench, Power, and Pump Segment: rents specialty construction products, such as trench safety equipment, line testing equipment for underground work, power and HVAC equipment, electrical distribution equipment, and temperature control equipment; and pumps primarily used by energy and petrochemical customers. This division serves construction companies involved in infrastructure projects, municipalities, and industrial companies. The company also sells some of the same equipment is rents as well.
- Thesis: URI is in the sweet spot of the federal government's infrastructure building program.

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- We start our reports with a company description so our readers will understand what the company does and how it makes money

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Example: United Rentals, Inc.

Price Action as of 25-Jan-2017

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- We then analyze who the stock is trading

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Example: United Rentals, Inc.
Valuation

- Trailing PE = 18 (median stock in S&P500 = 22)
- Forward PE = 13
- EV/EBITDA = 9.3
- 20% EPS Growth

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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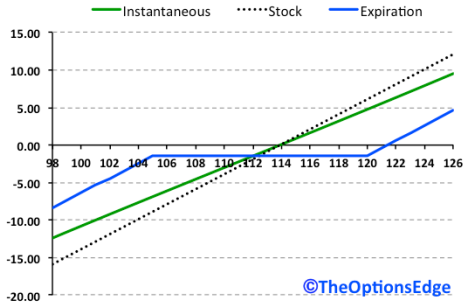
- Next step is to understand valuation

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Example: United Rentals, Inc.

Structure a Risk Reversal

Type	#	Expiration	Strike	Net
Call	1	6/16/17	$120.00	$7.90
Put	-1	6/16/17	$105.00	-$6.70
				$1.20



Starting Price = $113.61

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- We then match a strategy that is consistent with the fundamentals, technicals and investor sentiment.
- In this case, since we were looking for a big move, we chose a stock replacement strategy

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Example: United Rentals, Inc.

Price Action as of 25-Jan-2017

- Starting Price = $113.61
- Sold Price = $126.03
- Stock Peaked at $129.89
- Risk Reversal
  - ✓ Purchased at $1.20
  - ✓ Sold at $10.67
  - ✓ Profit = $9.47

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- The stock traded higher as the company reported good earnings which drew peoples attention to a company that will benefit from a growth in construction and infrastructure investing

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Security Selection Method: Results

Documented Trade Recommendations
TheStreet.Com & TheOptionsEdge.Com

01-Jan to 25-Feb-2017				% Underlying Price			% Capital At Risk	
	Count	% Winners	Sum Gain (Loss)	Avg. Gain (Loss)	Avg. Annualized Gain (Loss)	Avg. Holding Time	Avg. Gain (Loss)	Avg. Annualized Gain (Loss)
TOE Open Trades	13	76.9%	$846.70	1.5%	14.4%	0.09	1.7%	15.6%
TOE Trades Closed 2017	3	66.7%	$1,537.00	2.8%	27.3%	0.11	5.8%	67.2%
AAO Open Trades	19	73.7%	$958.50	1.0%	7.7%	0.13	2.6%	17.8%
AAO Trades Closed in 2017	20	60.0%	$651.00	0.6%	2.3%	0.27	2.3%	11.0%
AAO Trades Closed in 2016	74	73.0%	$7,633.00	1.9%	8.2%	0.25	6.4%	36.9%
Total	129	71.3%	$11,626.20	1.5%	8.3%	0.22	4.7%	28.6%

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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- Our track record shows that this process works
- Since inception, our ideas have generated a 28.6% annualized return on capital placed at risk

$$\alpha = r - [r_f + \beta(r_m - r_f)]$$

Mark W. Guthner, CFA

Executive Editor and Senior Contributor Mark W. Guthner is a veteran of the financial services industry. His skills and experience stretch across multiple disciplines including trading, portfolio and risk management, securities analysis and valuation, investment banking and financial technology as well.

Mark served as a Principal, Portfolio Manager, Proprietary Trader and Equity Derivative Strategist at Banc of America Securities, CRT Capital Group LLC and Dash Financial LLC. In these roles, Mark advised institutional investors on the use of options to express market views and to hedge or eliminate unwanted risks from institutional portfolios. In his proprietary trading activities, Mark generated returns on capital in excess of 35% per year.

Options Edge Executive Editor and Senior Contributor Michael Khouw is a veteran of the financial services industry whose derivatives trading experience began in the 1990s as a member and floor trader in the open-outcry pits of the Philadelphia Stock Exchange, the American Stock Exchange and the New York Mercantile Exchange. Since then Mike has broad experience working as a strategist, analyst, portfolio manager and proprietary trader of equities, commodities and equity and index derivatives.

Mike has shared his insights as a contributor on CNBC's Fast Money and Options Action, the first television show educating self-directed investors on the proper use of listed options. He also publishes articles and frequently speaks on a broad array of topics including trading strategy, market structure and regulation at investment conferences

$$\sigma = \sqrt{\frac{\sum_{i-1}^{n}(r_i - \bar{r})^2}{n-1}}$$

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