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Imports graphics

Description Stock, Options and Futures Trading Strategies for Traders and Investors with Bullish Outlook are represented here through their Graphs. The graphic indicators, strategies, calculations, functions and all the discussions are for academic, research, and educational purposes only and should not be construed as investment advice and come with absolutely no Liability. Guy Cohen (“The Bible of Options Strategies (2nd ed.)”, 2015, ISBN: 9780133964028). Zura Kakushadze, Juan A. Serur (“151 Trading Strategies”, 2018, ISBN: 9783030027919). John C. Hull (“Options, Futures, and Other Derivatives (11th ed.)”, 2022, ISBN: 9780136939979).

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aBullCallSpread	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for Bull Call Spread and draws its graph in the Plots tab.</i>
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Description

The trading strategy that is implemented with an expectation that the price of the stock or the underlying will rise in future is called a bullish strategy. As explained by Chance (2019), an option is a derivative contract in which one party, the buyer, pays a sum of money to the other party, the seller or writer, and receives the right to either buy (known as call option) or right to sell (known as put option) an underlying asset at a fixed price either on a specific expiration date (European option) or at any time prior to the expiration date (American Option). So the right to buy is one type of option, referred to as a call or call option, whereas the right to sell is another type of option, referred to as a put or put option.

Further, it is explained by Chance (2019) that a derivative is a financial instrument that derives its performance from the performance of an underlying asset. Derivatives can be used as insurance that allows for the transfer of risk from one party to another. As everyone knows, insurance is a financial contract that provides protection against loss. The party bearing the risk purchases an insurance policy, which transfers the risk to the other party, the insurer, for a specified period of time. The risk itself does not change, but the party bearing it does. Derivatives allow for this same type of transfer of risk.

Derivatives are associated with an underlying asset. As such, the underlying asset is often simply referred to as the underlying, whose value is the source of risk. Derivatives are created in the form of legal contracts. They involve two parties: the buyer and the seller (sometimes known as the writer); each of whom agrees to do something for the other, either now or later. The buyer, who purchases the derivative, is referred to as the long or the holder because he owns (or holds) the derivative and holds a long position. The seller is referred to as the short because he holds a short

position (Chance, 2019).

Usage

```
aBullCallSpread(
  ST,
  XH,
  XL,
  CL,
  CH,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Bull Call Spread ",
  sub = " bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
XH	Higher Strike Price or eXercise price.
XL	Lower Strike Price or eXercise price.
CL	Call Premium paid for the bought Call at Lower Strike.
CH	Call Premium received for the sold Call at Higher Strike.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

This is a vertical spread consisting of a long position in a close to ATM (at the money) call option with a strike price XL, and a short position in an OTM (out of the money) call option with a higher strike price XH. This is a net debit (V0Dr) trade as option premium or option price (CH) received on call shorted at higher strike price (XH) is less than premium or price (CL) paid for the call bought at lower strike price (XL). So, V0Dr is equal to CL minus CH. The outlook of the trader (or investor) is bullish and the strategy profits if the stock price rises (Kakushadze & Serur, 2018).

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and Breakeven(BE) point for Bull Call Spread and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Bull Call Spread.

Author(s)

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References

Chance,D.M.(2019). Basics of Derivative Pricing and Valuation. In CFA Program Curriculum 2020 Level I Volumes 1-6. (Vol. 5, pp. 385-453). Wiley Professional Development (P&T). ISBN 9781119593577, <https://bookshelf.vitalsource.com/books/9781119593577>
 Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
aBullCallSpread(17, 17, 15, 1.64, 0.51)
aBullCallSpread(50, 50, 47, 5, 3.2, h1=0.7, hu=1.2)
aBullCallSpread(1000, 1000, 998, 14.5, 13.25, h1=0.98, hu=1.02)
```

aBullPutSpread	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point at expiration for Bull Put Spread and draws its graph in the Plots tab.</i>
----------------	---

Description

This is a vertical spread consisting of a long position in an OTM (out of the money) put option with a strike price XL, and a short position in another OTM (out of the money) put option with a higher strike price XH. This is a net credit (V0Cr) trade as option premium or option price (PH) received on put shorted at higher strike price (XH) is more than premium (PL) paid on the put bought at lower strike price (XL). So, V0Cr is equal to PH minus PL. The outlook of trader or investor is bullish (Kakushadze & Serur, 2018).

Usage

```
aBullPutSpread(
  ST,
  XH,
  XL,
  PH,
  PL,
  h1 = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
```

```
ylab = "Profit / Loss [ PnL ] at Expiration ($)",  
main = "Bull Put Spread ",  
sub = "bullishTrader / MaheshP Kumar"  
)
```

Arguments

ST	Spot Price at time T.
XH	Higher Strike Price or eXercise price.
XL	Lower Strike Price or eXercise price.
PH	Option premium or option price received on put shorted at higher strike price (XH).
PL	Option premium or option price paid on the put bought at lower strike price (XL).
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for Bull Put Spread and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Bull Put Spread.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). *The Bible of Options Strategies* (2nd ed.). Pearson Technology Group.
Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
aBullPutSpread(17, 17, 15, 1.50, 0.50)  
aBullPutSpread(50, 50, 48, 4, 2.6, hl=0.7, hu=1.2)  
aBullPutSpread(1000, 1000, 995, 40, 37, hl=0.98, hu=1.02)
```

aLongCall	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for European Long Call and draws its graph in the Plots tab.</i>
-----------	---

Description

A long call gives trader or investor the right to buy in return of the call premium or call price paid to secure this right from the call seller. The call buyer hopes that the underlying share price will rise that would result in profits (Kakushadze & Serur, 2018).

Usage

```
aLongCall(
  ST,
  X,
  C,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Long Call ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium paid on bought call.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

This method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for a long call and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Long Call.

Author(s)

MaheshP Kumar, <maheshparamjitekumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
aLongCall(17,17,1.44)
aLongCall(50,50,4,h1=0.7,hu=1.2)
aLongCall(1000,1000,10,h1=0.97,hu=1.02)
```

aLongStock	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point of a long position in a stock, at the time of sale of the held stock, and draws its graph in the Plots tab.</i>
------------	---

Description

Long stock is owning and holding the stock on the expectation that its price will rise (Hull, 2022).

Usage

```
aLongStock(
  ST,
  S0,
  C = 0,
  h1 = 0,
  hu = 1.8,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Realized Profit / Loss [ PnL ] upon Sale ($)",
  main = "Long Stock ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
S0	Initial Stock Price
C	Transaction Cost.
h1	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.

ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

This method is developed, and the given examples are created, to compute per share Profit and Loss at the time of the sale of a held stock and also the Breakeven (BE) point for a long stock position and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Covered Call.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Hull, J. C. (2022). Options, Futures, and Other Derivatives (11th ed.). Pearson Education (US). <https://bookshelf.vitalsource.com/books/9780136940043>.

Examples

```
aLongStock(20,18)
aLongStock(90,85,h1=0.7,hu=1.2)
aLongStock(1000,990,h1=0.97,hu=1.02)
aLongStock(1000,990,5,h1=0.97,hu=1.02)
```

callRatioBackspread	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for Call Ratio Backspread and draws its graph in the Plots tab.</i>
---------------------	--

Description

This strategy consists of a short position one (or two) call options with a strike price X1L, and and buying two (or three) call options with a strike price X2H. The outlook of trader or investor is strongly bullish (Kakushadze & Serur, 2018) .

Usage

```
callRatioBackspread(
  ST,
  X2H,
  X1L,
  CX2H,
  CX1L,
  hl = 0,
  hu = 1.7,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Call Ratio Backspread ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X2H	Higher Strike Price or eXercise price.
X1L	Lower Strike Price or eXercise price.
CX2H	Call Premium received for the sold Calls at higher Strike.
CX1L	Call Premium paid for the bought Calls at Lower Strike.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for Call Ratio Backspread and draws its graph in the Plots tab. EXAMPLE, Buying two HypoERP December 30 calls at \$2.50 and shorting HypoERP December 25 put at \$4.90

Value

returns a profit and loss graph of Call ratio backspread.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). *The Bible of Options Strategies* (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
callRatioBackspread(25,30,25,2.50,4.90)
callRatioBackspread(25,30,25,2.20,4.90)
```

collarStrategy	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point (BE) at expiration for Collar Strategy and draws its graph in the Plots tab.</i>
----------------	--

Description

This strategy is a covered call augmented by a long put option as insurance against the stock price falling. It amounts to buying stock, buying an OTM put option with a strike price XL, and selling an OTM call option with a higher strike price XH. The outlook of trader or investor is moderately bullish (Kakushadze & Serur, 2018).

Usage

```
collarStrategy(  
  ST,  
  S0,  
  XL,  
  XH,  
  PXL,  
  CXH,  
  hl = 0,  
  hu = 1.5,  
  xlab = "Spot Price ($) on Expiration",  
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",  
  main = "Collar Strategy",  
  sub = "bullishTrader / MaheshP Kumar"  
)
```

Arguments

ST	Spot Price at time T.
S0	Initial Stock Price.
XL	Lower Strike Price or eXercise price.
XH	Higher Strike Price or eXercise price.
PXL	Call Premium paid for the bought Calls at Lower Strike.

CXH	Call Premium received for the sold Calls at higher Strike.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed-form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for Collar Strategy and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Collar Strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
collarStrategy(30,19,20,35,6.50,5)
collarStrategy(800,770,750,790,80,70,hl=0.92,hu=1.02)
```

coveredCall	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for Covered Call and draws its graph in the Plots tab.</i>
-------------	---

Description

This strategy is also known as buy-write strategy that results from buying stock and writing a call option with a strike price X against the stock position. The outlook of trader or investor on the stock price is neutral to bullish. The covered call strategy has the same payoff as writing a put option (short/naked put). While maintaining the long stock position, the trader can generate income by periodically selling OTM call options (Kakushadze & Serur, 2018).

Usage

```
coveredCall(
  ST,
  X,
  C,
  S0,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Covered Call ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium received on shorted call.
S0	Initial Stock Price
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and Breakeven (BE) point for Covered Call and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Covered Call.

Author(s)

MaheshP Kumar, <maheshparamjtkumar@gmail.com>

References

Cohen, G. (2015). *The Bible of Options Strategies* (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). *151 Trading Strategies*. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
coveredCall(17,17,1.44,15.84)
coveredCall(50,50,4,48,h1=0.7,hu=1.2)
coveredCall(1000,1000,10,990,h1=0.97,hu=1.02)
```

coveredShortStraddle *Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point at expiration for Covered Short Straddle and draws its graph in the Plots tab.*

Description

This strategy amounts to augmenting a covered call by writing a put option with the same strike price(X) and time-to-maturity (TTM) as the sold call option and thereby increasing the income (Kakushadze & Serur, 2018).

Usage

```
coveredShortStraddle(
  ST,
  X,
  C,
  P,
  S0,
  h1 = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Covered Short Straddle ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium received on shorted call.
P	Put Premium received on shorted Put.
S0	Initial Stock Price
h1	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and Breakeven (BE) point for Covered Short Straddle and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Covered Short Straddle.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
coveredShortStraddle(17, 17, 1.44, 3.56, 15.84)
coveredShortStraddle(50, 50, 4, 11, 48, hl=0.7, hu=1.2)
coveredShortStraddle(1000, 1000, 10, 33, 990, hl=0.97, hu=1.015)
```

coveredShortStrangle *Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for Covered Short Strangle and draws its graph in the Plots tab.*

Description

This strategy amounts to augmenting a covered call by writing an OTM put option with a higher strike price (XL) and the same time to maturity (TTM) as the sold call option (whose strike price is XH) and thereby increasing the income. Breakeven (BE) point of Covered Short Strangle varies depending on the relationship between the stock price, premiums received, and the strikes (Kakushadze & Serur, 2018).

Usage

```
coveredShortStrangle(
  ST,
  XH,
  XL,
  CXH,
  PXL,
```

```

S0,
hl = 0,
hu = 1.6,
xlab = "Spot Price ($) on Expiration",
ylab = "Profit / Loss [ PnL ] at Expiration ($)",
main = "Covered Short Strangle ",
sub = "bullishTrader / MaheshP Kumar"
)

```

Arguments

ST	Spot Price at time T.
XH	Higher Strike Price or eXercise price.
XL	Lower Strike Price or eXercise price.
CXH	Call Premium received on shorted higher Strike call.
PXL	Put Premium received on shorted lower Strike Put.
S0	Initial Stock Price
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Sub title of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration for Covered Short Strangle and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Covered Short Strangle.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). *The Bible of Options Strategies* (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
coveredShortStrangle(17,21,12,1.44,3.56,15.84)
coveredShortStrangle(50,55,45,4,11,48,h1=0.7,hu=1.2)
coveredShortStrangle(1000,1010,990,10,24,990,h1=0.97,hu=1.02)
```

longCombo	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for Long Combo and draws its graph in the Plots tab.</i>
-----------	---

Description

This strategy results from buying an OTM call option with a strike price X2H and selling an OTM put option with a strike price X1L, where X2H is greater than X1L (Kakushadze & Serur, 2018).

Usage

```
longCombo(
  ST,
  X1L,
  X2H,
  PX1L,
  CX2H,
  h1 = 0,
  hu = 1.9,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Long Combo ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.
X2H	Higher Strike Price or eXercise price.
PX1L	Put Premium received for the sold Put at Lower Strike.
CX2H	Call Premium paid for the bought Call at higher Strike .
h1	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed-form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and Breakeven (BE) point for Long Combo and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Long Combo Strangle.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
longCombo(19, 15, 25, 1.50, 2.00)
longCombo(19, 15, 25, 1.50, 1.50)
longCombo(19, 15, 25, 1.80, 1.50)
longCombo(60, 47, 57, 5, 4, h1=0.4, hu=1.4)
longCombo(1000, 980, 1010, 80, 80, h1=0.965, hu=1.025)
longCombo(1000, 980, 1010, 80, 78, h1=0.965, hu=1.025)
longCombo(1000, 980, 1010, 76, 78, h1=0.965, hu=1.025)
```

modifiedCallButterfly *Calculates Profit and Loss (PnL) per share (or unit of the underlying) at expiration and Breakeven (BE) point for Modified Call Butterfly and draws its graph in the Plots tab.*

Description

This is a variation of the long call butterfly strategy and the strikes are no longer equidistant; instead we have X3H minus X2M is less than X2M minus X1L. This results in a sideways strategy with a bullish bias (Kakushadze & Serur, 2018).

Usage

```
modifiedCallButterfly(
  ST,
  X1L,
  X2M,
  X3H,
```

```

CX1L,
CX2M,
CX3H,
hl = 0.8,
hu = 1.3,
xlab = "Spot Price ($) at Expiration",
ylab = " Profit / Loss [ PnL ] at Expiration ($)",
main = "Modified Call Butterfly ",
sub = "bullishTrader / MaheshP Kumar"
)

```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.
X2M	Medium Strike Price or eXercise price.
X3H	Higher Strike Price or eXercise price.
CX1L	Call Premium Paid for the bought Call at Lower Strike.
CX2M	Call Premium received from the sold Call at Medium Strike.
CX3H	Call Premium paid for the bought Call at higher Strike .
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss and Breakeven (BE) point at expiration for Modified Call Butterfly and draw its graph in the Plots tab.

Value

Returns a graph Modified Call Butterfly.

Author(s)

MaheshP Kumar, <maheshparamjitikumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group. <https://bookshelf.vitalsource.com/b>
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
modifiedCallButterfly(50,45,55,60,6.12,1.30,0.50)
modifiedCallButterfly(1000,980,1020,1030,60,20,7,h1=0.97,hu=1.05)
```

modifiedPutButterfly *Calculates Profit and Loss (PnL) per share (or unit of the underlying) at expiration and Breakeven (BE) point for Modified Put Butterfly and draws its graph in the Plots tab.*

Description

This is a variation of the long put butterfly strategy and the strikes are no longer equidistant; instead we have X3H minus X2M is less than X2M minus X1L. This results in a sideways strategy with a bullish bias (Cohen,2015).

Usage

```
modifiedPutButterfly(
  ST,
  X1L,
  X2M,
  X3H,
  P1XL,
  PX2M,
  PX3H,
  h1 = 0.8,
  hu = 1.3,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [ PnL ] at Expiration ($)",
  main = "Modified Put Butterfly ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.

X2M	Medium Strike Price or eXercise price.
X3H	Higher Strike Price or eXercise price.
P1XL	Put Premium Paid for the bought Put at Lower Strike.
PX2M	Put Premium received from the sold Put at Medium Strike.
PX3H	Put Premium paid for the bought Put at higher Strike .
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details and formula given by Cohen (2015), this method is developed, and the given examples are created, to compute per share Profit and Loss and Breakeven (BE) point at expiration for Modified Put Butterfly and draw its graph in the Plots tab.

Value

Returns a graph Modified Put Butterfly.

Author(s)

MaheshP Kumar, <maheshparamj itkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
modifiedPutButterfly(50,45,55,60,0.98,6.12,10.28)
modifiedPutButterfly(1000,980,1020,1030,10,60,100,hl=0.97,hu=1.05)
```

ratioPutSpread	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point at expiration for Ratio Put Spread and draws its graph in the Plots tab.</i>
----------------	--

Description

This strategy consists of a short position in NS close to ATM put options with a strike price X1L, and a long position in NL ITM put options with a strike price X2H, where NL is less than NS. Typically, NL is equal to 1 and NS is equal to 2, or NL is 2 and NS is 3. This is an income strategy if it is structured as a net credit trade. The trader's outlook is neutral to bullish (Kakushadze & Serur, 2018).

Usage

```
ratioPutSpread(
  ST,
  X2H,
  X1L,
  PX2H,
  PX1L,
  h1 = 0,
  hu = 1.7,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Ratio Put Spread ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X2H	Higher Strike Price or eXercise price.
X1L	Lower Strike Price or eXercise price.
PX2H	Premium received for the sold s at higher Strike.
PX1L	Premium paid for the bought s at Lower Strike.
h1	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for Ratio Put Spread and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Ratio Put Spread.

Author(s)

MaheshP Kumar, <maheshparamjtkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
ratioPutSpread(25,30,25,1.33,0.42)
```

shortPut

Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven (BE) point at expiration for European Short Put and draws its graph in the Plots tab.

Description

Selling a put is a simple, short-term income strategy. When you sell a put, you have sold you receive a put premium or put price and obligation to buy from put buyer. Trader or investors outlook is bullish and the expectation is that price will rise and will never be exercised (Kakushadze & Serur, 2018).

Usage

```
shortPut(  
  ST,  
  X,  
  P,  
  hl = 0,  
  hu = 1.5,  
  xlab = "Spot Price ($) on Expiration",  
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",  
  main = "Short Put ",  
  sub = "bullishTrader / MaheshP Kumar"  
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
P	Put Premium received on sold Put.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

This method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for a Short Put and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Short Put.

Author(s)

MaheshP Kumar, <maheshparamjitektumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
shortPut(17,18,1.44)
shortPut(50,55,8,hl=0.7,hu=1.2)
shortPut(1000,1000,10,hl=0.97,hu=1.02)
```

strapStrategy	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point at expiration for Strap Strategy and draws its graph in the Plots tab.</i>
---------------	--

Description

This is a volatility strategy consisting of a long position in two ATM call options, and a long position in an ATM put option with a strike price K. This is a net debit trade. The trader or investor has bullish outlook (Kakushadze & Serur, 2018) .

Usage

```
strapStrategy(
  ST,
  X,
  C1,
  C2,
  P1,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Strap Strategy ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C1	Call Premium paid on bought first call.
C2	Call Premium paid on bought second call.
P1	Put Premium paid on bought Put.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

This method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and also the Breakeven (BE) point for a Strap Strategy and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Strap Strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
strapStrategy(25,25,2.40,2.40,1.70)
strapStrategy(40,40,3,3,2,h1=0.7,hu=1.2)
strapStrategy(1000,1010,18,18,10,h1=0.955,hu=1.055)
```

syntheticCall	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) and Breakeven point at expiration for Synthetic Call and draws its graph in the Plots tab.</i>
---------------	--

Description

This strategy is also known as married put or protective put and results from buying stock and an ATM or OTM put option with a strike price X is less than or equal to S_0 . The trader or investor has bullish outlook. This is a hedging strategy, the put option hedges the risk of the stock price falling (Kakushadze & Serur, 2018).

Usage

```
syntheticCall(
  ST,
  X,
  P,
  S0,
  h1 = 0,
  hu = 1.5,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = "Synthetic Call/ Married put/ Protective put ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
P	Put Premium paid on bought Put.
S0	Initial Stock Price
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xLab	X axis label.
yLab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss at expiration and Breakeven (BE) point for Synthetic Call and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Synthetic Call.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
syntheticCall(35,35,2.55,35.50)
syntheticCall(15,15,1.46,15.84,hl=0.6,hu=1.4)
syntheticCall(1000,1000,20,990,hl=0.98,hu=1.035)
```

zBearCallLadder	<i>Calculates Profit and Loss (PnL) per share (or unit of the underlying) at expiration and Breakeven point for Bear Call Ladder and draws its graph in the Plots tab.</i>
-----------------	--

Description

This is a vertical spread consisting of a short position in (usually) a close to ATM (at the money) call option with a strike price X1L, a long position in an OTM (out of the money) call option with a strike price X2M, and a long position in another OTM call option with a higher strike price X3H. A bear call ladder typically arises when a bear call spread (a bearish strategy) goes wrong (the stock trades higher), so the trader buys another OTM call option (with the strike price X1L) to reverse from the initial bearish outlook to emerging bullish trends. On initiation, this is a net credit Strategy and results in net cash inflow as premium received on shorting a call (at lower strike) is more than premium paid on buying two calls (buying one call at somewhat middle priced strike X2M and then buying one more call at higher strike X3H) (Kakushadze & Serur, 2018).

Usage

```
zBearCallLadder(
  ST,
  X1L,
  X2M,
  X3H,
  CX1L,
  CX2M,
  CX3H,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [ PnL ] at Expiration ($)",
  main = "Bear Call Ladder ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.
X2M	Medium Strike Price or eXercise price.
X3H	Higher Strike Price or eXercise price.
CX1L	Call Premium received for the sold Call at Lower Strike.
CX2M	Call Premium paid for the bought Call at Medium Strike.
CX3H	Call Premium paid for the bought Call at higher Strike .
hl	lower bound value for setting lower limit of X axis displaying spot price.

hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss and Breakeven (BE) point at expiration for Bear Call Ladder and draw its graph in the Plots tab.

Value

Returns a graph Bear Call Ladder.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

Cohen, G. (2015). The Bible of Options Strategies (2nd ed.). Pearson Technology Group.
 Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
zBearCallLadder(19,19,20,24,4.20,2.40,0.80)
zBearCallLadder(50,50,52,56,8.1,3.70,2.50,h1=0.8,hu=1.2)
zBearCallLadder(1000,1000,1005,1010,20,11,4,h1=0.995,hu=1.025)
```

zBuyingStockIndexFutureAtFairValue

Calculates Profit and Loss at closeout of a bought Stock Index Future (like Micro E mini) and draws its graph in the Plots tab.

Description

On initiation, this is a net debit Strategy and results in net cash outflow in the form of paying the amount of bought Stock Index Future. If the bullish outlook of the trader emerges as expected and the Stock Index Future (like Micro E mini) rises then the trader makes the profit as shown in the graph (TD Ameritrade, 2019).

Usage

```
zBuyingStockIndexFutureAtFairValue(
  SIT,
  SI0,
  R,
  d,
  n,
  hl = 0.9995,
  hu = 1.006,
  xlab = "Stock Index at position closing",
  ylab = "Profit / Loss [PnL] at position closing ($)",
  main = "Long on Stock Index like Micro E mini S & P 500 ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

SIT	Stock Index at time T.
SI0	Stock Index Initial Value.
R	annualized financing rate
d	dividend yield of the index.
n	represents days in Future like 90day Stock Index Future.
hl	lower bound value for setting lower limit of X axis displaying spot price.
hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to the information provided by TD Ameritrade (2019) and Hull (2022), this method is developed, and the given examples are created, to compute Profit and Loss at closing of the position in Stock Index Future (like Micro E mini) and draw its graph in the Plots tab.

Value

returns a profit and loss graph of Covered Call.

Author(s)

MaheshP Kumar, <maheshparamjitektumar@gmail.com>

References

TD Ameritrade. (2019, July 26). Micro E-Mini Futures Contracts. YouTube.<https://youtu.be/SShGjJepCdA>
 Hull, J. C. (2022). Options, Futures, and Other Derivatives (11th ed.). Pearson Education (US).
<https://bookshelf.vitalsource.com/books/9780136940043>.

Examples

```
zBuyingStockIndexFutureAtFairValue(3700,3709,0.0275,0.02,90)
zBuyingStockIndexFutureAtFairValue(2900,2910,0.025,0.03,90,h1=0.9995,hu=1.005)
```

`zLongSyntheticFuture` *Calculates Profit and Loss (PnL) per unit of the underlying and Breakeven point at expiration for Long Synthetic Future and draws its graph in the Plots tab.*

Description

This strategy results from buying a call of the option on Future and selling a put of the option on the Future of the same strike price with the same expiration. On initiation, this is a net debit Strategy and results in net cash inflow as premium received on shorting a put of the option on Future is less than premium paid on buying a call of the option on Future (Kakushadze & Serur, 2018). This Strategy precisely mimics the long future position (Cohen, 2015).

Usage

```
zLongSyntheticFuture(
  STF,
  XF,
  COF,
  POF,
  h1 = 0,
  hu = 2,
  xlab = "Spot Price ($) on Expiration",
  ylab = "Profit / Loss [ PnL ] at Expiration ($)",
  main = " Long Synthetic Future ",
  sub = "bullishTrader / MaheshP Kumar"
)
```

Arguments

STF	Future contract price at time T.
XF	Strike Price of Option on Future.
COF	Call Premium paid on buying an Option on Future .
POF	Put premium received on shorting an Option on Future.
h1	lower bound value for setting lower limit of X axis displaying spot price.

hu	upper bound value for setting upper limit of X axis displaying spot price.
xlab	X axis label.
ylab	Y axis label.
main	Title of the Graph.
sub	Subtitle of the Graph.

Details

According to conceptual details given by Cohen (2015), and a closed form solution provided by Kakushadze and Serur (2018), this method is developed, and the given examples are created, to compute per share Profit and Loss (per unit of the underlying) at expiration and Breakeven (BE) point for Long Synthetic Future and draws its graph in the Plots tab.

Value

returns a profit and loss graph of Long Synthetic Future.

Author(s)

MaheshP Kumar, <maheshparamjitektumar@gmail.com>

References

Cohen, G. (2015). *The Bible of Options Strategies* (2nd ed.). Pearson Technology Group.
Kakushadze, Z., & Serur, J. A. (2018, August 17). 151 Trading Strategies. Palgrave Macmillan.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247865

Examples

```
zLongSyntheticFuture(12,14,4,2)  
zLongSyntheticFuture(200,205,7,2,h1=0.95,hu=1.15)
```

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