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Author MaheshP Kumar [aut, cre]

Maintainer MaheshP Kumar <maheshparamjitkumar@gmail.com>

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Description Stock, Options and Futures Trading Strategies for Traders and Investors with Bearish Outlook. The indicators, strategies, calculations, functions and all other 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).
Juan A. Serur, Juan A. Serur ("151 Trading Strategies", 2018, ISBN: 9783030027919).
Chartered Financial Analyst Institute (``Chartered Financial Analyst Program Curriculum 2020 Level I Volumes 1-6. (Vol. 5, pp. 385-453)", 2019, ISBN: 9781119593577).
John C. Hull ("Options, Futures, and Other Derivatives (11th ed.)", 2022, ISBN: 9780136939979).

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`aShortCallExpirationValueVT`

Calculates Payoff (VT) at expiration per share or unit of the underlying for European Call Seller and draws its graph in the Plots tab.

Description

An implemented trading strategy with an expectation that the price of the stock or the underlying will decline in future is called a bearish 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 (call option) or sell (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 so-called

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

```
aShortCallExpirationValueVT(
  ST,
  X,
  C,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Value / Payoff [ VT ] at Expiration ($)",
  main = "Short Call / Call Seller [ VT ]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or call 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.

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 Payoff (VT) at expiration per share or unit of the underlying for European Call Seller and draw its graph in the Plots tab. EXAMPLE, Writing HypoCorp December 50 call at $3.00. Using the same notation, let ST be the price of the underlying at the time T, exp, and X are the exercise price (strike price) of the option. Remember that a call option requires the holder, or long, to pay amount X and receive the underlying upon exercise. It should be obvious that the long would exercise the option at expiration, if ST is greater than X, meaning that the underlying value is greater than what he would pay to obtain the underlying. Otherwise, the call option buyer would simply let the option expire. Thus, on the expiration date European call option buyer has a payoff amount which is Maximum of (0,ST minus X). This payoff is like a Gross Profit (or Gross Loss) as the price (also called premium) paid to buy the European call (denoted by C) has not yet been deducted by call option buyer. For call seller the payoff is minus Maximum of (0,ST minus X) (Chance, 2019). Here, X is the exercise price (strike price) of the option, ST is the price of the underlying at time T,

and C is the price (also called premium) paid by the European Call Buyer to the the Call Seller.par The graph gets displayed in the Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

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. 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

```
aShortCallExpirationValueVT(10,10,3)
aShortCallExpirationValueVT(50,50,3,0.8,1.2)
```

---

aShortCallinitialValueV0

Displays graph of the Initial Value as Net Credit (V0Cr) per share on initiation day for shorting the Call in the Plots tab.

Description

As we know that options 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 (pr holds) the derivative and holds a long position. The seller is referred to as the short because he holds a short position and has, upon exercise, an obligation to deliver (Chance, 2019).

Usage

```
aShortCallinitialValueV0(
  ST,
  X,
  C,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Initial Value [ V0] ($)",
```

```
  main = "Short Call / Call Seller V0 [Dr/Cr] "
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or call 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.

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 display the Initial Value as Net Credit (V0Cr) per share on initiation day for shorting the Call. EXAMPLE, Writing HypoInc December 10 call at $3.00. Here, X is the exercise price (strike price) of the option, ST is the price of the underlying at time T, and C is the price (also called premium) paid by the European Call Buyer to the the Call Seller. For a call Seller there is inflow of cash in the form of premium received for writing the call and hence it is a Net Credit Position that is represented by V0Cr. The graph gets displayed in Plots tab. Horizontal Straight Line on the graph represents that V0Cr is same irrespective of spot price at expiration.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

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. 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

```
aShortCallinitialValueV0(10,10,3)
aShortCallinitialValueV0(50,50,3,0.8,1.2)
```

aShortCallPnLatExpiration

Calculates Profit and Loss (PnL) per share or unit of the underlying at expiration for European Call Seller and draws its graph in the Plots tab.

Description

Using the payoff value and the price paid for the option, we can determine the profit (or loss) from the strategy, which is denoted with the PnL. Let us say the call option buyer paid C for the option at time 0. Then, the profit to the call buyer is Maximum of (0,ST minus X) minus C. For call seller the payoff is minus maximum of (0,ST minus X) plus net Credit that is represented by V0Cr. Further, it is explained that the fixed price at which the underlying asset can be purchased is called the exercise price (also called the strike price or the strike). This price at which the underlying will be purchased or sold if the option is exercised. The strike price of the option is chosen by the participants and is fixed at the predetermined amount. The actual price or value of the option is an altogether different concept and will differ from time-to-time. The option buyer pays the seller (writer) a sum of money called the option price (option premium, or just the premium). It represents a fair price of the option, and in a well-functioning market, it would be the value of the option. An option is also designated both as exercisable early (before expiration) or only at expiration. Options that can be exercised early are referred to as American-style. Options that can be exercised only at expiration are referred to as European-style. It is extremely important that you do not associate these terms with where these options are traded. Both types of options trade on all continents (Chance, 2019).

Usage

```
aShortCallPnLatExpiration(
  ST,
  X,
  C,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Short Call / Call Seller [ PnL]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or call 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.

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 Profit and Loss (PnL) per share or unit of the underlying at expiration for European Call Seller and draw its graph in the Plots tab. EXAMPLE, Writing HypoInc December 10 call at $3.00. Here, `X` is the exercise price (strike price) of the option, `ST` is the price of the underlying at time T, and `C` is the price (also called premium) paid by the European Call Buyer to the the Call Seller. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

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. 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

```
aShortCallPnLatExpiration(10,10,3)
aShortCallPnLatExpiration(50,50,3,hl=0.8,hu=1.2)
aShortCallPnLatExpiration(1000,1000,14,hl=0.995,hu=1.025)
```

---

aShortStock *Calculates per share Profit and Loss at covering of the shorted stock and draws its graph in the Plots tab.*

Description

On initiation, this is a net credit Strategy and results in net cash inflow in the form of receiving the unit price of shorted share. On the day of the covering the trader or investor has to buy the underlying stock at the price at the time of covering. If the bearish outlook of the trader is as expected and the stock price falls then the trader makes the profit as shown in the graph (Hull, 2022).

Usage

```
aShortStock(
  ST,
  S0,
  C = 0,
  hl = 0.8,
  hu = 1.1,
  xlab = "Share Price  @ covering",
  ylab = " Profit / Loss [PnL] at covering ($)",
  main = "Shorting a Stock [ PnL]"
)
```

Arguments

ST	a number.
S0	a number.
C	a number.
hl	a number.
hu	a number.
xlab	X-axis label.
ylab	Y-axis label.
main	Title of the Graph.

Details

According to the information provided by Hull (2019), this method is developed, and the given examples are created to compute per share Profit and Loss at covering of the shorted stock and draws its graph in the Plots tab.

Value

Returns a graph of the strategy.

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

```
aShortStock(51,52)
aShortStock(1000,1009,hl=0.995,hu=1.015)
```

`bearCallSpreadExpirationValueVT` *Calculates Value/Payoff (VT) at expiration per share or unit of the underlying for Bear Call Spread and draws its graph in the Plots tab.*

Description

The trader writes a call option at a lower strike price and purchases a call option at a higher strike price on the same underlying stock with the same expiration date. Since the lower-strike call trades at a higher price, the trader receives a net credit when the spread is established. The bear call spreader hopes the price of the underlying stock will drop below the strike price of the written option, in which case both options will expire worthless, and he or she can keep the net credit received when the position was initiated (Kakushadze & Serur, 2018).

Usage

```
bearCallSpreadExpirationValueVT(
  ST,
  XH,
  XL,
  CH,
  CL,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Value / Payoff [ VT ] at Expiration ($)",
  main = " Bear Spread using Calls [ VT ]"
)
```

Arguments

`ST`	Spot Price at time T.
`XH`	higher Strike Price or eXercise price.
`XL`	lower Strike Price or eXercise price.
`CH`	Call Premium on higher Strike.
`CL`	Call Premium on 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.

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 Value/Payoff (VT) at expiration per share or unit of the underlying for Bear Call Spread and draw its graph in the Plots tab. EXAMPLE, Buy HypoPharma December 19 call at $2.00, and Write HypoPharma December 16 call at $3.00. This is a vertical spread consisting of a long position call option with a strike price XH, and a short position in another OTM call option with a lower strike price XL. This is a net credit trade involving a net cash inflow. The outlook of Trader is bearish. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bearCallSpreadExpirationValueVT(19,19,16,2,3)
bearCallSpreadExpirationValueVT(45,45,40,0.50,2,hl=0.8,hu=1.2)
bearCallSpreadExpirationValueVT(500,500,492,3,8,hl=0.95,hu=1.02)
```

---

bearCallSpreadInitialValueV0

Displays graph of per share Initial Value Net Credit (V0Cr) on initiation day for Bear Call Spread in the Plots tab.

Description

The trader writes a call option at a lower strike price and purchases a call option at a higher strike price on the same underlying stock with the same expiration date. Since the lower-strike call trades at a higher price, the trader receives a net credit when the spread is established. The bear call spreader hopes the price of the underlying stock will drop below the strike price of the written option, in which case both options will expire worthless, and he or she can keep the net credit received when the position was initiated (Kakushadze & Serur, 2018).

Usage

```
bearCallSpreadInitialValueV0(
  ST,
  XH,
  XL,
  CH,
  CL,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Initial Value [ V0] ($)",
  main = "Bear Spread using Calls V0 [Dr/Cr]"
)
```

Arguments

ST	Spot Price at time T.
XH	higher Strike Price or eXercise price.
XL	lower Strike Price or eXercise price.
CH	Call Premium on higher Strike.
CL	Call Premium on 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.

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 display per share Initial Value Net Credit (V0Cr) on initiation day for Bear Call Spread. EXAMPLE, Buy HypoPharma December 19 call at $2.00 and Write HypoPharma December 16 call at $3.00. So, a trader paid a call premium of $2 per share on bought call at $19 (XH) and received a Call Premium of $3 per share sold call at $16 (lower strike represented by XL). This is a vertical spread consisting of a long position call option with a strike price XH, and a short position in another OTM call option with a lower strike price XL. This is a net credit trade involving a net cash inflow. The outlook of the trader is bearish. The graph gets displayed in Plots tab. Horizontal Straight Line on the graph represents that V0Cr is same irrespective of spot price at expiration.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bearCallSpreadInitialValueV0(19,19,16,2,3)
bearCallSpreadInitialValueV0(45,45,40,0.50,2,hl=0.8,hu=1.2)
bearCallSpreadInitialValueV0(500,500,492,3,8,hl=0.95,hu=1.02)
```

---

bearCallSpreadPnLatExpiration

Calculates Profit and Loss (pnL) at expiration per share or unit of the underlying for Bear Call Spread and draws its graph in the Plots tab.

Description

The trader writes a call option at a lower strike price and purchases a call option at a higher strike price on the same underlying stock with the same expiration date. So the options are identical in all aspects except for the strike price. Since the lower-strike call trades at a higher price, the trader receives a net credit when the spread is established. The bear call spreader hopes the price of the underlying stock will drop below the strike price of the written option, in which case both options will expire worthless, and he or she can keep the net credit received when the position was initiated (Kakushadze & Serur, 2018).

Usage

```
bearCallSpreadPnLatExpiration(
  ST,
  XH,
  XL,
  CH,
  CL,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Bear Spread using Calls [ PnL ]"
)
```

Arguments

ST	Spot Price at time T.
XH	higher Strike Price or eXercise price.
XL	lower Strike Price or eXercise price.

CH	Call Premium on higher Strike.
CL	Call Premium on 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.

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 Profit and Loss (pnL) at expiration per share or unit of the underlying for Bear Call Spread and draw its graph in the Plots tab. EXAMPLE, Buy HypoPharma December 19 call at $2.00 (outflow) and Write HypoPharma December 16 call at $3.00 (inflow). So, the trader paid a call premium of $2 per share on bought call at $19 (XH) and received a Call Premium of $3 per share sold call at $16 (lower strike represented by XL). This results in net cash inflow and hence a net credit. This is a vertical spread consisting of a long position call option with a strike price XH, and a short position in another OTM call option with a lower strike price XL. This is a net credit trade involving a net cash inflow. The outlook of trader is bearish. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bearCallSpreadPnLatExpiration(19,19,16,2,3)
bearCallSpreadPnLatExpiration(45,45,40,0.50,2,hl=0.8,hu=1.2)
bearCallSpreadPnLatExpiration(500,500,492,3,8,hl=0.95,hu=1.02)
```

`bearPutSpreadExpirationValueVT` *Calculates Value/Payoff (VT) at expiration per share or unit of the underlying for Bear Put Spread and draws its graph in the Plots tab.*

Description

This is a vertical spread consisting of a long position in a put option (close to at-the-) with a strike price XH, and a short position in an put option (out-of-the-money) with a lower strike price XL. This is a net debit trade. The outlook of the trader (investor) is bearish and trader profits if the stock price falls (Kakushadze & Serur, 2018).

Usage

```
bearPutSpreadExpirationValueVT(
  ST,
  XH,
  XL,
  PH,
  PL,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Value / Payoff [ VT ] at Expiration ($)",
  main = " Bear Spread using Puts [ VT ]"
)
```

Arguments

`ST`	Spot Price at time T.
`XH`	higher Strike Price or eXercise price.
`XL`	lower Strike Price or eXercise price.
`PH`	Put Premium on higher Strike.
`PL`	Put Premium on 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.

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 Value/Payoff (VT) at expiration per share or unit of the underlying for Bear Put Spread and draw its graph in the Plots tab. EXAMPLE, Buy HypoPharma December 17 put at $4.00 and Write HypoPharma December 14 put at $3.00. Suppose HypoMart stock is trading at $17. An investor creates a bear put spread by buying the HypoMart May 17 put at $4 and selling the HypoMart May 14 put at $3, at a net debit (net cash outflow) of $1. If the stock price is trading at $17 or higher, both puts will expire worthless and the investor will lose the net premium paid for the spread. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bearPutSpreadExpirationValueVT(17,17,14,4,3)
bearPutSpreadExpirationValueVT(40,40,35,1.85,0.50,hl=0.6,hu=1.2)
bearPutSpreadExpirationValueVT(500,500,495,9,7,hl=0.95,hu=1.02)
```

`bearPutSpreadInitialValueV0`

Displays graph of per share Net Debit (V0Dr) on initiation day for Bear Put Spread in the Plots tab.

Description

A bear put spread is established by buying a put option with a higher strike price and writing a put option on the same underlying stock with the same expiration date, but with a lower strike price. Like bull call spreads, the purchased option tends to be at-the-money and the written option out-of-the-money (Kakushadze & Serur, 2018). Suppose HypoMart stock is trading at $17. An investor creates a bear put spread by buying the HypoMart May 17 put at $4 and selling the HypoMart May 14 put at $3, at a net debit (net cash outflow) of $1 .

Usage

```
bearPutSpreadInitialValueV0(
  ST,
  XH,
  XL,
  PH,
  PL,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Initial Value [ V0] ($)",
  main = "Bear Spread using Puts V0 [Dr/Cr]"
)
```

Arguments

ST	Spot Price at time T.
XH	higher Strike Price or eXercise price.
XL	lower Strike Price or eXercise price.
PH	Put Premium on higher Strike.
PL	Put Premium on 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.

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 display per share Net Debit (V0Dr) on initiation day for Bear Put Spread. EXAMPLE, Buy HypoPharma December 17 put at $4.00 and Write HypoPharma December 14 put at $3.00. This is a vertical spread consisting of a long position in a put option (close to at-the-money) with a strike price XH, and a short position in an put option (out-of-the-money) with a lower strike price XL. This is a net debit trade. The outlook of the trader (investor) is bearish and trader profits if the stock price falls. The graph gets displayed in Plots tab. Horizontal Straight Line on the graph represents that V0Dr is same irrespective of spot price at expiration.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bearPutSpreadInitialValueV0(17,17,14,4,3)
bearPutSpreadInitialValueV0(40,40,35,1.85,0.50,hl=0.8,hu=1.2)
bearPutSpreadInitialValueV0(500,500,495,9,7,hl=0.95,hu=1.02)
```

`bearPutSpreadPnLatExpiration`

Calculates per share Profit and Loss (pnL) at expiration for Bear Put Spread and draws its graph in the Plots tab.

Description

A bear put spread is established by buying a put option with a higher strike price and writing a put option on the same underlying stock with the same expiration date, but with a lower strike price. Like bull call spreads, the purchased option tends to be at-the-money and the written option out-of-the-money (Kakushadze & Serur, 2018). Suppose HypoMart stock is trading at $17. An investor creates a bear put spread by buying the HypoMart May 17 put at $4 and selling the HypoMart May 14 put at $3, at a net debit (net cash outflow) of $1. If the stock price is trading at $17 or higher, both puts will expire worthless and the investor will lose the net premium paid for the spread.

Usage

```
bearPutSpreadPnLatExpiration(
  ST,
  XH,
  XL,
  PH,
  PL,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Bear Spread using Puts [ PnL ]"
)
```

Arguments

`ST`	Spot Price at time T.
`XH`	higher Strike Price or eXercise price.
`XL`	lower Strike Price or eXercise price.

PH	Put Premium on higher Strike.
PL	Put Premium on 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.

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 (pnL) at expiration for Bear Put Spread and draw its graph in the Plots tab. EXAMPLE, Buy HypoPharma December 17 put at $4.00 and Write HypoPharma December 14 put at $3.00. This is a vertical spread consisting of a long position in a put option (close to at- the-money) with a strike price XH, and a short position in an put option (out-of-the-money) with a lower strike price XL. This is a net debit trade. The outlook of the trader (investor) is bearish and trader profits if the stock price falls. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bearPutSpreadPnLatExpiration(17,17,14,4,3)
bearPutSpreadPnLatExpiration(40,40,35,1.85,0.50,hl=0.8,hu=1.2)
bearPutSpreadPnLatExpiration(500,500,495,9,7,hl=0.95,hu=1.02)
```

`bullPutLadderPnLatExpiration` *Calculates per share Profit and Loss at expiration for Bull Put Ladder and draws its graph in the Plots tab.*

Description

This is a vertical spread consisting of a short position in (usually) a close to ATM put option with a strike price X3H, a long position in an OTM put option with a strike price X2M, and a long position in another OTM put option with a lower strike price X1L. A bull put ladder typically arises when a bull put spread (a bullish strategy) goes wrong (that is the stock trades lower), so the trader buys another OTM put option (with the lower strike price X1L) to adjust the position to bearish. On initiation, this is a net credit Strategy and results in net cash inflow as premium received on shorting a put (at higher strike) is more than premium paid on buying two puts (buying one put at t somewhat middle priced strike X2M and then one more put at lower strike X1L).

Usage

```
bullPutLadderPnLatExpiration(
  ST,
  X1L,
  X2M,
  X3H,
  PX1L,
  PX2M,
  PX3H,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Bull Put Ladder [ PnL ]"
)
```

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.
`PX1L`	Put Premium paid for the bought Put at Lower Strike.
`PX2M`	Put Premium paid for the bought Put at Medium Strike.
`PX3H`	Put Premium received for the sold 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.

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 Bull Put Ladder and draw its graph in the Plots tab. EXAMPLE: Shorting HypoQuant December 24 put at $2.40 , buy HypoQuant December 21 put at $1.00, and then again buy HypoQuant December 19 put at $0.40. The graph gets displayed in Plots tab (Kakushadze & Serur, 2018).

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
bullPutLadderPnLatExpiration(19,19,21,24,0.40,1.00,2.40)
bullPutLadderPnLatExpiration(200,200,205,209,2,5,7,hl=0.95,hu=1.1)
```

---

coveredPutExpirationValueVT

Calculates Value/Payoff at expiration per share or unit of the underlying for Covered Put and draws its graph in the Plots tab.

Description

A covered put is the bearish equivalent of a covered call. It is achieved by short-selling the underlying stock and writing an equivalent put against it. By writing a put against a short sale, the trader is now in the position to buy the stock, if exercised, when the market price fell below the put's strike price. The covered put writer is, in effect, forgoing the opportunity to participate in the decrease in stock price under the strike price in exchange for premium received for selling the put for the same (Kakushadze & Serur, 2018).

Usage

```
coveredPutExpirationValueVT(
  ST,
  X,
  P,
  S0,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Value / Payoff [ VT ] at Expiration ($)",
  main = "Covered Put / Married Put [ VT]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price..
P	Put Premium.
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.

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 Value/Payoff at expiration per share or unit of the underlying for Covered Put and draw its graph in the Plots tab. EXAMPLE, Short HypoGamma stock at $20.00 (inflow) and short HypoGamma December 18 call at $2.00 (inflow). Selling HypoGamma stock and writing the HypoGamma December 18 put. As the price of HypoGamma is currently $20, the investor has an opportunity to profit from a decline in the stock from $20 to the strike price of $18. By writing the 18 put, the investor has given up the right to participate in any decline in the stock below this level. Graph shows that the risk that can be incurred is uncapped because, theoretically, the price of HypoGamma stock could rise to any extent (infinity).

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
coveredPutExpirationValueVT(18,18,2,20)
coveredPutExpirationValueVT(100,100,4,120,hl=0.9,hu=1.1)
coveredPutExpirationValueVT(1000,1000,20,1100,hl=0.995,hu=1.01)
```

`coveredPutInitialValueV0`

Displays graph of the Initial Value as Net Credit (V0Cr) per share or unit of the underlying for Covered Put.

Description

A covered put is the bearish equivalent of a covered call. It is achieved by short-selling the underlying stock and writing an equivalent put against it. By writing a put against a short sale, the trader is now in the position to buy the stock, if exercised, when the market price fell below the put's strike price. The covered put writer is, in effect, forgoing the opportunity to participate in the decrease in stock price under the strike price in exchange for premium received for selling the put for the same (Kakushadze & Serur, 2018).

Usage

```
coveredPutInitialValueV0(
  ST,
  X,
  P,
  S0,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Initial Value [ V0] ($)",
  main = "Covered Put / Married Put V0 [Dr/Cr]"
)
```

Arguments

`ST`	Spot Price at time T.
`X`	Strike Price or eXercise price..
`P`	Put Premium.
`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.

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 display the Initial Value as Net Credit (V0Cr) per share or unit of the underlying for Covered Put. EXAMPLE, Short HypoGamma stock at $20.00 (inflow) and short HypoGamma December 18 call at $2.00 (inflow).

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
coveredPutInitialValueV0(18,18,2,20)
coveredPutInitialValueV0(100,100,4,120,hl=0.9,hu=1.1)
coveredPutInitialValueV0(1000,1000,20,1100,hl=0.995,hu=1.01)
```

---

coveredPutPnLatExpiration

Calculates Profit and Loss at expiration per share (or unit of the underlying) for Covered Put and draws its graph in the Plots tab.

Description

A covered put is the bearish equivalent of a covered call. It is achieved by short-selling the underlying stock and writing an equivalent put against it. By writing a put against a short sale, the trader is now in the position to buy the stock, if exercised, when the market price fell below the put's strike price. The covered put writer is, in effect, forgoing the opportunity to participate in the decrease in stock price under the strike price in exchange for premium received for selling the put for the same (Kakushadze & Serur, 2018).

Usage

```
coveredPutPnLatExpiration(
  ST,
  X,
  P,
  S0,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Covered Put / Married Put [ PnL ]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price..
P	Put Premium.
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.

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 Profit and Loss at expiration per share (or unit of the underlying) for Covered Put and draw its graph in the Plots tab. EXAMPLE, Short HypoGamma stock at $20.00 (inflow) and short HypoGamma December 18 call at $2.00 (inflow). Selling HypoGamma stock and writing the HypoGamma December 18 put. As the price of HypoGamma is currently $20, the investor has an opportunity to profit from a decline in the stock from $20 to the strike price of $18. By writing the 18 put, the investor has given up the right to participate in any decline in the stock below this level. If the stock falls under $18 at expiration, the option will be exercised by the put holder, forcing the writer to buy the stock at $18 regardless of what the market price is at that time. Buying the stock will offset the short position. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
coveredPutPnLatExpiration(18,18,2,20)
coveredPutPnLatExpiration(110,110,4,120,hl=0.9,hu=1.2)
coveredPutPnLatExpiration(1090,1090,10,1100,hl=0.995,hu=1.03)
```

`longPutExpirationValueVT`

Calculates Value/Payoff at expiration per share or unit of the underlying for European Put Buyer and draws its graph in the Plots tab.

Description

Using the same notation used previously, let `ST` be the price of the underlying at time T, and `exp` and `X` be the exercise price (strike price) of the option. A Put option allows the holder, or long, to receive amount `X` by allowing the holder to sell the underlying asset at the exercise price. Thus, the holder should exercise the put at expiration if the underlying asset is worth less than the exercise price (ST < X). In that case, the put is said to be in-the-money. If the underlying asset is worth the same as the exercise price (ST = X), meaning the put is at-the-money, or more than the exercise price (ST > X), meaning the put is out-of-the-money, the option holder would not exercise it and it would expire with zero value. Thus, the payoff to the Put Buyer (Holder) is equal to Maximum of (0, X - ST) (Chance, 2019).

Usage

```
longPutExpirationValueVT(
  ST,
  X,
  P,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Value / Payoff [ VT ] at Expiration ($)",
  main = "Long Put / Put Buyer [ VT ]"
)
```

Arguments

`ST`	Spot Price at time T.
`X`	Strike Price or eXercise price.
`P`	Put Premium or Put 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.

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 Value/Payoff at expiration per share or unit of the underlying for European Put Buyer and draw its graph in the Plots tab. EXAMPLE, Buying HypoTech December 10 put at $2.00. Here, `X` is the exercise price (strike price) of the option, `ST` is the price of the underlying at time T, and `P` is the price (also called premium) paid by the European Put Buyer to the the Put Seller.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

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. 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

```
longPutExpirationValueVT(10,10,2)
longPutExpirationValueVT(40,40,3,0.8,1.2)
```

---

longPutInitialValueV0 *Displays graph of the Initial Value as Net Debit (V0Dr) per share or unit of the underlying on initiation day for European Put Buyer in the Plots tab.*

Description

Displays graph of the Initial Value as Net Debit (V0Dr) per share or unit of the underlying on initiation day for European Put Buyer in the Plots tab.

Usage

```
longPutInitialValueV0(
  ST,
  X,
  P,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Initial Value [ V0] ($)",
  main = "Long Put / Put Buyer V0 [Dr/Cr]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
P	Put Premium or Put 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.

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 display the Initial Value as Net Debit (V0Dr) per share or unit of the underlying on initiation day for European Put Buyer. EXAMPLE, Buying HypoTech December 10 put at $2.00. Here, X is the exercise price (strike price) of the option, ST is the price of the underlying at time T, and C is the price (also called premium) paid by the European Call Buyer to the Call Seller. For a Put Buyer there is outflow of cash in the form of premium paid for buying the right to sell and hence it is a Net Debit Position that is represented by V0Dr.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

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. 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

```
longPutInitialValueV0(10,10,2)
longPutInitialValueV0(40,40,3,0.8,1.2)
```

`longPutPnLatExpiration`

Calculates Profit and Loss (pnL) at expiration per share or unit of the underlying for European Put Buyer and draws its graph in the Plots tab.

Description

A Put option allows the holder, or long, to receive amount `X` by allowing the holder to sell the underlying asset at the exercise price. Thus, the holder should exercise the put at expiration if the underlying asset is worth less than the exercise price (ST < X). In that case, the put is said to be in-the-money. If the underlying asset is worth the same as the exercise price (ST = X), meaning the put is at-the-money, or more than the exercise price (ST > X), meaning the put is out-of-the-money, the option holder would not exercise it and it would expire with zero value. Thus, the Profit and Loss(PnL) to the Put Buyer (Holder) is equal to Maximum of (0, X - ST) minus Net Debit (V0Dr) (Chance, 2019).

Usage

```
longPutPnLatExpiration(
  ST,
  X,
  P,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Long Put / Put Buyer [ PnL ]"
)
```

Arguments

`ST`	Spot Price at time T.
`X`	Strike Price or eXercise price.
`P`	Put Premium or Put 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.

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 Profit and Loss (pnL) at expiration per share or unit of the underlying for European Put Buyer and draw its graph in the Plots tab. EXAMPLE, Buying HypoTech December 10 put at $2.00. Here X is the exercise price (strike price) of the option, ST is the price of the underlying at time T, and P is the price (also called premium) paid by the European Put Buyer to the the Put Seller at time 0. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

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. 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

```
longPutPnLatExpiration(10,9,2)
longPutPnLatExpiration(40,38,3,hl=0.8,hu=1.2)
longPutPnLatExpiration(1000,1020,14,hl=0.995,hu=1.03)
```

---

protectiveCallExpirationValueVT

Calculates the Value/Payoff per share at expiration for Protective Call and draws its graph in the Plots tab.

Description

This strategy is also known as married call or synthetic put or a protected short sale. It consists of a call purchase against a short sale of the underlying stock. An increase in the price of the stock over the strike price of the call will prompt the investor to exercise the right to buy the stock. As a result, the investor is protected against an increase in the stock price over the strike price (Kakushadze & Serur, 2018).

Usage

```
protectiveCallExpirationValueVT(
  ST,
  X,
  C,
  S0,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = "Value / Payoff [ VT ] at Expiration ($)",
  main = "Protective Call / Married Call / SyntheticPut [VT]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium.
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.

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 the Value/Payoff per share at expiration for Protective Call and draw its graph in the Plots tab. EXAMPLE, Short HypoMedia stock at $14.00 (inflow) and buy HypoMedia December 15 call at $2.00 (outflow).

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
protectiveCallExpirationValueVT(15,15,2,14)
protectiveCallExpirationValueVT(50,50,3,48,hl=0.8,hu=1.2)
protectiveCallExpirationValueVT(1000,1000,4,998,hl=0.98,hu=1.01)
```

`protectiveCallInitialValueV0` *Displays per share Net Credit (V0Cr) on initiation day for Protective Call and draws its graph in the Plots tab.*

Description

Displays per share Net Credit (V0Cr) on initiation day for Protective Call and draws its graph in the Plots tab.

Usage

```
protectiveCallInitialValueV0(
  ST,
  X,
  C,
  S0,
  hl = 0.5,
  hu = 1.5,
  xlab = "Spot Price ($)",
  ylab = "Initial Value V0 ($)",
  main = "Protective Call / Married Call / SyntheticPut"
)
```

Arguments

`ST`	Spot Price at time T.
`X`	Strike Price or eXercise price.
`C`	Call Premium.
`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.

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 Net Credit (V0Cr) on initiation day for Protective Call and draw its graph in the Plots tab. EXAMPLE, Short HypoMedia stock at $14.00 (inflow) and buy HypoMedia December 15 call at $2.00 (outflow). This is a net credit trade as the net cash inflow equals shorted price realized minus call premium (call price) paid on call purchase.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
protectiveCallInitialValueV0(15,15,2,14)
protectiveCallInitialValueV0(50,50,3,48,hl=0.8,hu=1.2)
protectiveCallInitialValueV0(1000,1000,20,998,hl=0.995,hu=1.01)
```

---

protectiveCallPnLatExpiration

Calculates per share Profit and Loss at expiration for Protective Call and draws its graph in the Plots tab.

Description

This strategy is also known as married call or synthetic put or a protected short sale. It consists of a call purchase against a short sale of the underlying stock. An increase in the price of the stock over the strike price of the call will prompt the investor to exercise the right to buy the stock. As a result, the investor is protected against an increase in the stock price over the strike price. In effect, the call acts as insurance against a rise in the stock price. As with any kind of insurance; however, there is a price to pay. In the case of options, the price is the premium which in effect lowers the price received on the short sale of the stock (Kakushadze & Serur, 2018).

Usage

```
protectiveCallPnLatExpiration(
  ST,
  X,
  C,
  S0,
  hl = 0,
  hu = 1.5,
  xlab = "Spot Price ($)",
  ylab = "Profit / Loss ($)",
  main = "Protective Call / Married Call / SyntheticPut"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium.
S0	Initial Stock Price.
hl	lowe0r 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.

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 Protective Call and draw its graph in the Plots tab. EXAMPLE, Short HypoMedia stock at $14.00 (inflow) and buy HypoMedia December 15 call at $2.00 (outflow). Protective Call results from shorting stock and buying an ATM (at-the money) or OTM (out-of-the-money) call option with a strike price X greater than or equal to S0. The outlook of trader or investor is bearish. This strategy has the same profile as a long put. In fact, this strategy is often referred to as a synthetic put. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
protectiveCallPnLatExpiration(15,15,2,14)
protectiveCallPnLatExpiration(50,50,3,48,hl=0.8,hu=1.2)
protectiveCallPnLatExpiration(1000,1000,7,998,hl=0.98,hu=1.01)
```

---

putRatioBackspreadPnL *Calculates per share Profit and Loss at expiration for Put Ratio Backspread and draws its graph in the Plots tab.*

Description

This strategy consists of a shorting one (or two) put options with a strike price X2H, and a buying two (or three) put options with a lower strike price X1L. The outlook of the trader is strongly bearish. On initiation, this is a net Debit Strategy and results in net cash outflow as premium paid on buying 2 puts (at lower strike) is more than premium received from selling one put (at higher strike) (Kakushadze & Serur, 2018).

Usage

```
putRatioBackspreadPnL(
  ST,
  X1L,
  X2H,
  PX1L,
  PX2H,
  hl = 0,
  hu = 1.4,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = " Put Ratio Backspread [ PnL ]"
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.
X2H	Higher Strike Price or eXercise price.
PX1L	Put Premium paid for the bought Puts at Lower Strike.
PX2H	Put Premium received for the sold 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.

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 Put Ratio Backspread and draw its graph in the Plots tab. EXAMPLE, Buying two HypoERP December 25 Put at $2.15 and buy HypoERP December 30 put at $4.20. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
putRatioBackspreadPnL(25,25,30,2.15,4.20)
```

---

ratioCallSpreadPnL *Calculates per share Profit and Loss at expiration for Ratio Call Spread and draws its graph in the Plots tab.*

Description

This strategy consists of a shorting two calls with a higher strike price X2H, and a buying one (or three) calls with a lower strike price X1L. The graph shows that investor or trader is exposed to uncapped risk and can only make a limited reward and therefore an undesirable strategy (Kakushadze & Serur, 2018).

Usage

```
ratioCallSpreadPnL(
  ST,
  X1L,
  X2H,
  CX1L,
  CX2H,
  hl = 0.8,
  hu = 1.4,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = " Ratio Call Spread [ PnL ]"
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.
X2H	Higher Strike Price or eXercise price.
CX1L	Call Premium paid for the bought Call at Lower Strike.
CX2H	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.

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 Ratio Call Spread and draw its graph in the Plots tab. EXAMPLES, Shorting two HypoQuill December 27.50 calls at $1.40 and buying HypoQuill December 25 put at $3.20 OR Shorting two HypoQuill December 27.50 calls at $1.90 and buying HypoQuill December 25 put at $3.20. In the first example, trades are net Debit on the Initiation day as Premium paid is more then the premium received. (In this situation, as displayed in the graph, there are two Breakeven points). However, as shown in the second example the trades can be structured to have net credit on initiation. (In this case, as displayed in the graph, there will be only one Breakeven Point). The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
ratioCallSpreadPnL(25,25,27.50,3.20,1.40)
ratioCallSpreadPnL(25,25,27.50,3.20,1.90)
ratioCallSpreadPnL(25,25,27.50,3.20,1.60)
```

`shortComboExpirationValueVT`

Calculates the Value/Payoff per share at expiration for Short Combo and draws its graph in the Plots tab.

Description

Short Combo is also known as short risk reversal and results from buying a put option with a strike price X1L and selling a call option with a strike price X2H with the same expiration date. Here, X2H > X1L. Outlook of the trader (investor) is bearish. This strategy results in capital gain (Kakushadze & Serur, 2018).

Usage

```
shortComboExpirationValueVT(
  ST,
  X1L,
  X2H,
  PX1L,
  CX2H,
  hl = 0,
  hu = 1.6,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Value / Payoff [VT] at Expiration ($)",
  main = "Short Combo [ VT ]"
)
```

Arguments

ST	Spot Price at time T.
X1L	higher Strike Price or eXercise price.
X2H	lower Strike Price or eXercise price.
PX1L	Put Premium paid for the bought Put at Lower Strike.
CX2H	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.

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 the Value/Payoff per share at expiration for Short Combo and draw its graph in the Plots tab. EXAMPLE, Buy HypoCRM December 8 Put at $1.50 and short HypoCRM December 12 call at $2.00. This is a net credit trade as premium received on shorted call (CX1H) at a higher strike is more than the premium paid on the bought put (P1XL) at a lower strike.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
shortComboExpirationValueVT(10,8,12,1.50,2.00)
```

---

shortComboPnLatExpiration

Calculates per share Profit and Loss at expiration for Short Combo and draws its graph in the Plots tab.

Description

Short Combo results from buying a put option with a strike price X1L and selling a call option with a strike price X2H with the same expiration date. Here, X2H > X1L. Outlook of the trader (investor) is bearish (Kakushadze & Serur, 2018).

Usage

```
shortComboPnLatExpiration(
  ST,
  X1L,
  X2H,
  PX1L,
  CX2H,
  hl = 0,
  hu = 1.2,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Profit / Loss [PnL] at Expiration ($)",
  main = "Short Combo [ PnL ]"
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price.
X2H	Higher Strike Price or eXercise price.
PX1L	Put Premium paid for the bought Put at Lower Strike.
CX2H	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.

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 Short Combo and draw its graph in the Plots tab. EXAMPLE, Buy HypoCRM December 8 Put at $1.50 and shortHypoCRM December 12 call at $2.00. This is a net credit trade as premium received on shorted call (CX1H) at a higher strike is more than the premium paid on the bought put (P1XL) at a lower strike.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
shortComboPnLatExpiration(19,18,20,1.50,2.00)
```

`stripExpirationValueVT` *Calculates the Value/Payoff per share at expiration for Strip Option Strategy and draws its graph in the Plots tab.*

Description

Calculates the Value/Payoff per share at expiration for Strip Option Strategy and draws its graph in the Plots tab.

Usage

```
stripExpirationValueVT(
  ST,
  X,
  C,
  P1,
  P2,
  hl = 0,
  hu = 2,
  xlab = "Spot Price ($) at Expiration",
  ylab = "Value / Payoff [ VT ] at Expiration ($)",
  main = "Strip [VT]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or Call Price.
P1	Put Premium on first Put.
P2	Put Premium on second 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.

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 the Value/Payoff per share at expiration for Strip Option Strategy and draw its graph in the Plots tab. EXAMPLE, Buy HypoBeta December 9 call at $1.40 (outflow) and Buy two (2) HypoBeta December 9 Puts at $0.80 (outflow). This Strategy consists of a long call position (in an at-the-money call option) and a long position in two put options (at-the-money) with a strike price X. This is a net debit trade.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
stripExpirationValueVT(9,9,1.4,0.80,0.80)
stripExpirationValueVT(40,40,2,1.25,1.25,hl=0.9,hu=1.2)
stripExpirationValueVT(1000,1000,8,5.50,6.50,hl=0.985,hu=1.022)
```

---

stripInitialValueV0 *Displays per share Initial Net Debit (V0Dr) on initiation day for Strip Option Strategy and draws its graph in the Plots tab.*

Description

Displays per share Initial Net Debit (V0Dr) on initiation day for Strip Option Strategy and draws its graph in the Plots tab.

Usage

```
stripInitialValueV0(
  ST,
  X,
  C,
  P1,
  P2,
  hl = 0.5,
```

```
  hu = 1.5,
  xlab = "Spot Price ($) at Expiration",
  ylab = " Initial Value [ V0] ($)",
  main = "Strip V0 [Dr/Cr]"
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or Call Price.
P1	Put Premium on first Put.
P2	Put Premium on second 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.

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 Initial Net Debit (V0Dr) on initiation day for Strip Option Strategy and draw its graph in the Plots tab. EXAMPLE, Buy HypoBeta December 9 call at $1.40 (outflow) and buy two HypoBeta December 9 Puts at $0.80 (outflow). This Strategy consists of a long call position (in an at-the-money call option) and a long position in two put options (at-the-money) with a strike price X. This is a net debit trade and involves three cash outflows in the form of premiums paid for buying one call option and two put options.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
stripInitialValueV0(9,9,1.4,0.80,0.80)
stripInitialValueV0(40,40,2,1.25,1.25,hl=0.9,hu=1.2)
stripInitialValueV0(1000,1000,8,5.50,6.50,hl=0.99,hu=1.015)
```

`stripPnLatExpiration` *Calculates per share Profit and Loss at expiration for Strip Option Strategy and draws its graph in the plots tab.*

Description

This Strategy consists of a long call position (in an at-the-money call option) and a long position in two put options (at-the-money) with a strike price X. The Strip is a simple adjustment to the Straddle to make it more biased toward the downside. In buying a second put, the strategy retains its preference for high volatility but now with a more bearish slant (Cohen, 2016).

Usage

```
stripPnLatExpiration(
  ST,
  X,
  C,
  P1,
  P2,
  hl = 0,
  hu = 2,
  xlab = "Spot Price ($) at Expiration",
  ylab = "Profit / Loss ($) at Expiration",
  main = "Strip [PnL]"
)
```

Arguments

`ST`	Spot Price at time T.
`X`	Strike Price or eXercise price.
`C`	Call Premium or Call Price.
`P1`	Put Premium on first Put.
`P2`	Put Premium on second 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.

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 Strip Option Strategy and draw its graph in the plots tab. EXAMPLE, Buy HypoBeta December 9 call at $1.40 (outflow) and Buy two HypoBeta December 9 Puts at $0.80 (outflow). This is a net debit trade and involves three cash outflows. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
stripPnLatExpiration(9,9,1.4,0.80,0.80)
stripPnLatExpiration(40,40,2,1.25,1.25,hl=0.9,hu=1.2)
stripPnLatExpiration(1000,1000,8,5.50,6.50,hl=0.985,hu=1.022)
```

---

zOutlookRiskAdjustmentBCL

Calculates per share Profit and Loss at expiration for Bear Call Ladder and draws its graph in the Plots tab.

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

```
zOutlookRiskAdjustmentBCL(
  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 [ PnL ]"
)
```

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.

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 Bear Call Ladder and draw its graph in the Plots tab. EXAMPLE, Shorting HypoFintech December 24 put at $2.40, buying HypoFintech December 21 put at $1.00, and then again buying HypoFintech December 19 put at $0.40. This is used when Bear call Spread goes wrong and the Trader is trying to Adjust Initial Bearish outlook to now a Bullish. The graph gets displayed in Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
zOutlookRiskAdjustmentBCL(19,19,20,24,4.20,2.40,0.80)
zOutlookRiskAdjustmentBCL(200,200,201,204,7,4,2,hl=0.95,hu=1.1)
```

---

zShortingCommodityFuture

Calculates Profit and Loss at expiration for Shorting a Commodity Future (per unit of the underlying commodity) and draws its graph in the Plots tab.

Description

On initiation, this is a net credit Strategy and results in net cash inflow in the form of receiving the price of Future contract (per unit of the underlying). At the time of offset the trader or investor has to buy the underlying commodity of future contract at the price on the day of offset. If the bearish outlook of the trader holds good and the price of the commodity (underlying) falls then the trader makes the profit as shown in the graph (TD Ameritrade, 2019).

Usage

```
zShortingCommodityFuture(
  STF,
  F0,
  C,
  hl = 0.985,
  hu = 1.005,
  xlab = "Commodity Price ($) at Offset",
  ylab = " Profit / Loss [PnL] at Offset ($)",
  main = "Shorting a Commodity Future [ PnL]"
)
```

Arguments

STF	Commodity price at time T.
F0	Commodity Initial Price .
C	Cost involved in establishing Future Contract.

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.

Details

According to the information provided by TD Ameritrade (2019), this method is developed, and the given examples are created to compute Profit and Loss at expiration for Shorting a Commodity Future (per unit of the underlying commodity) and draws its graph in the Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@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

```
zShortingCommodityFuture(430,430,0)
zShortingCommodityFuture(2900,2910,0,hl=0.9995,hu=1.005)
```

---

zShortingStockIndexFutureAtFairValue

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

Description

On initiation, this is a net credit Strategy and results in net cash inflow in the form of receiving the amount of shorted Stock Index Future. On the day of the closeout the trader or investor has to buy the underlying at the price at the time of closeout. If the bearish outlook of the trader is as expected and the Stock Index Future (like Micro E-mini) falls then the trader makes the profit as shown in the graph (TD Ameritrade, 2019).

Usage

```
zShortingStockIndexFutureAtFairValue(
  SIT,
  SI0,
  R,
  d,
  n,
  hl = 0.9995,
  hu = 1.006,
  xlab = "Stock Index at closeout",
  ylab = " Profit / Loss [PnL] at closeout ($)",
  main = "Shorting a Stock Index like Micro E-mini S & P 500 [ PnL]"
)
```

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.

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 closeout of shorted a Stock Index Future (like Micro E-mini) and draw its graph in the Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@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

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

`zShortSyntheticFuturePnL`

Calculates Profit and Loss at expiration for Short Synthetic Future (per unit of the underlying) and draws its graph in the Plots tab.

Description

This strategy results from shorting a call of the option on Future and buying a put of the option on the Future of the same strike price with the same expiration. On initiation, this is a net credit Strategy and results in net cash inflow as premium received on shorting a call of the option on Future is more than premium paid on buying a put of the option on Future (Kakushadze & Serur, 2018).

Usage

```
zShortSyntheticFuturePnL(
  STF,
  XF,
  COF,
  POF,
  hl = 0,
  hu = 1.6,
  xlab = "Future Contract Price ($) at Expiration of Options on Future",
  ylab = " Profit and Loss [ PnL] ($) at Expiration",
  main = "Short Synthetic Future [ PnL ]"
)
```

Arguments

`STF`	Future contract price at time T.
`XF`	Strike Price of Option on Future.
`COF`	Call Premium received from Option on Future .
`POF`	Put premium paid on Option on 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.

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 Profit and Loss at expiration for Short Synthetic Future (per unit of the underlying) and draw its graph in the Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
zShortSyntheticFuturePnL(12,14,4,2)
zShortSyntheticFuturePnL(200,205,7,2,hl=0.95,hu=1.1)
```

---

zShortSyntheticFutureV0

Plots per share Initial cost for Short Synthetic Future in the Plots tab.

Description

This strategy results from shorting a call of the option on Future and buying a put of the option on the Future of the same strike price with the same expiration. On initiation, this is a net credit Strategy and results in net cash inflow as premium received on shorting a call of the option on Future is more than premium paid on buying a put of the option on Future (Kakushadze & Serur, 2018).

Usage

```
zShortSyntheticFutureV0(
  STF,
  XF,
  COF,
  POF,
  hl = 0.5,
  hu = 1.5,
  xlab = "Future Contract Price ($) at Expiration of Options on Future",
  ylab = " Initial Value [ V0] ($)",
  main = "Short Synthetic Future V0 [Dr/Cr]"
)
```

Arguments

STF	Future contract price at time T.
XF	Strike Price of Option on Future.
COF	Call Premium received from Option on Future.
POF	Put premium paid on Option on 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.

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 plot per share Initial cost for Short Synthetic Future in the Plots tab.

Value

Returns a graph of the strategy.

Author(s)

MaheshP Kumar, <maheshparamjitkumar@gmail.com>

References

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

```
zShortSyntheticFutureV0(20,20,2.80,2.60)
```

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