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Title High Volatility Environment Option Trading Strategies Graphs

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Imports ggplot2, dplyr, magrittr, tibble

Description Trading Strategies for high Option Volatility environment are repre-
sented here through their Graphs. The graphic indicators, strategies, calculations, func-
tions and all the discussions are for academic, research, and educational pur-
poses only and should not be construed as investment advice and come with absolutely no Liabil-
ity.
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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aStraddlePnL   *Calculates per share Profit and Loss (PnL) at expiration for Straddle*
                                Option Strategy and draws its Bar Plot displaying PnL in the Plots
                                tab.

Description

According to Kakushadze and Serur (2018), non directional strategies can be divided into two sub-groups: (a) volatility strategies that profit if the stock has large price movements (high volatility environment); and (b) sideways strategies that profit if the stock price remains stable (low volatility environment). Here, in this package only high volatility option strategies are discussed and represented through their graphs.

This is a volatility strategy consisting of a long position in an ATM (at the money) call option, and a long position in an ATM (at the money) put option with a strike price X. This is a net debit trade. The trader or investor has a neutral outlook. This is a capital gain strategy (Kakushadze & Serur, 2018).

Usage

```
aStraddlePnL(
  ST,
  X,
  C,
  P,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or Call Price paid for the bought Call.
P	Put Premium or Put Price paid for the 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Straddle Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

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

---

aStranglePnL	*Calculates per share Profit and Loss (PnL) at expiration for Strangle Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This is a volatility strategy consisting of a long position in an OTM (out of the money) call option with a strike price K1, and a long position in an OTM (out of the money) put option with a strike price K2. This is a net debit trade. However, because both call and put options are OTM (out of the money), this strategy is less costly to establish than a long straddle position. The flip side is that the movement in the stock price required to reach one of the break-even points is also more significant. The outlook of trader or investor is neutral. This is a capital gain strategy (Kakushadze & Serur, 2018).

Usage

```
aStranglePnL(
  ST,
  X1LP,
  X2HC,
  C,
  P,
  hl = 0,
  hu = 2.2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X1LP	Lower Strike Price or eXercise price bought Put.
X2HC	Higher Strike Price or eXercise price bought Call.
C	Call Premium or Call Price paid for the bought Call.
P	Put Premium or Put Price paid for the 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Strangle Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
aStranglePnL(25,22.50,27.50,0.85,1.40)
aStranglePnL(46,44,52,2,4,hl=0.6,hu=1.6)
aStranglePnL(1020,1015,1025,10,18,hl=0.95,hu=1.045)
```

gutsPnL	*Calculates per share Profit and Loss (PnL) at expiration for Guts Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This is a volatility strategy consisting of a long position in an ITM (in the money call : ST is greater than call strike price of X1LC) call option with a strike price X1LC, and a long position in an ITM (in the money put : ST is less than put strike of X2HP) put option with a strike price X2HP. This is a net debit trade. Since both call and put options are ITM, this strategy is more costly to establish than a long straddle position. The trader or investor has neutral outlook. This is a capital gain strategy (Kakushadze & Serur, 2018).

Usage

```
gutsPnL(
  ST,
  X2HP,
  X1LC,
  P,
  C,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X2HP	Higher Strike Price or eXercise price bought Put.
X1LC	Lower Strike Price or eXercise price bought Call.
P	Put Premium or Put Price paid for the bought put.
C	Call Premium or Call Price paid for the 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Guts Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
gutsPnL(25,27,24.75,2.5,3)
gutsPnL(46,48,44,2,4,hl=0.6,hu=1.6)
gutsPnL(1020,1025,1015,10,18,hl=0.95,hu=1.045)
```

---

longBoxPnL	*Calculates per share Profit and Loss (PnL) at expiration for Long Box Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

The Long Box is a complex strategy that can (in some jurisdictions) have beneficial effects for tax planning from year to year. If your incentive for this strategy is a tax play, you should consult with your tax advisor beforehand to evaluate whether or not it is valid where you live and trade to invest (Cohen, 2015).

This volatility strategy can be viewed as a combination of a bull call spread and a bear put spread, and consists of a long position in an ITM put option with a strike price X1H, a short position in an OTM put option with a lower strike price X2, a long position in an ITM call option with the strike price X2, and a short position in an OTM call option with the strike price X1H. The trader or investor has an outlook that is neutral (Kakushadze & Serur, 2018).

Usage

```
longBoxPnL(
  ST,
  X1H,
  X2,
  P1,
  C2,
  P3,
  C4,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
```

```
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X1H	Higher Strike Price or eXercise price for one ITM long Put and one OTM shorted call .
X2	Strike Price or eXercise price for one shorted Put and one long call.
P1	Put Premium or Put Price received for the shorted Put.
C2	Put Premium or Put Price paid for the bought Call.
P3	Put Premium or Put Price paid for the bought Put.
C4	Call Premium or Put Price received for the shorted 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Long Box Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
longBoxPnL(34,40,30,1,6,7,2)
```

longCallSyntheticStraddlePnL

Calculates per share Profit and Loss (PnL) at expiration for Long Call Synthetic Straddle Option Strategy and draws its Bar Plot displaying PnL in the plots tab.

Description

This volatility strategy (which is the same as a long straddle with the put replaced by a synthetic put) amounts to shorting stock and buying two ATM (or the nearest ITM call options with a strike price X. The trader's outlook is neutral. This is a capital gain strategy (assuming S0 is greater than or equal to X and V0 is greater than (S0 minus X)) (Kakushadze & Serur, 2018).

Usage

```
longCallSyntheticStraddlePnL(
  ST,
  X,
  C1,
  C2,
  S0,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C1	Call Premium or Call Price paid for the first bought Call.
C2	Call Premium or Call Price paid for the second bought Call.
S0	Stock Price at which the stock is shorted.
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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Long Call Synthetic Straddle Option Strategy and draw its graph in the plots tab.

Value

graph of the strategy

Examples

```
longCallSyntheticStraddlePnL(25,25,2,2,25.10)
longCallSyntheticStraddlePnL(40,40,7,7,41,hl=0.4,hu=1.7)
```

---

longPutSyntheticStraddlePnL

Calculates per share Profit and Loss (PnL) at expiration for Long Put Synthetic Straddle Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.

Description

This volatility strategy (which is the same as a long straddle with the call replaced by a synthetic call) amounts to buying stock and buying two ATM (or the nearest ITM) put options with a strike price X. The outlook of investor or trader is neutral. This is capital gain strategy. This is a capital gain strategy (assuming S0 is less than or equal to X and V0 is greater than (X minus S0)) (Kakushadze & Serur, 2018).

Usage

```
longPutSyntheticStraddlePnL(
  ST,
  X,
  P1,
  P2,
  S0,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
P1	Put Premium or Put Price paid for the first bought Put.
P2	Put Premium or Put Price paid for the second bought Put.
S0	Stock Price at which the stock is bought.
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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Long Put Synthetic Straddle Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
longPutSyntheticStraddlePnL(25,25,2,2,25.10)
longPutSyntheticStraddlePnL(40,40,5,5.2,40.2,hl=0.3,hu=1.7)
```

---

shortCallButterflyPnL	*Calculates per share Profit and Loss (PnL) at expiration for Short Call Butterfly Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This is a volatility strategy consisting of a short position in an ITM (in the money) call option with a strike price X1L, a long position in two ATM (at the money) call options with a strike price X, and a short position in an OTM (out of the money) call option with a strike price X3H. The strikes are equidistant: X3H minus X equals to X minus X1L . This is a net credit trade. In this sense, this is an income strategy. The trader or investor has neutral outlook (Kakushadze & Serur, 2018).

Usage

```
shortCallButterflyPnL(
  ST,
  X,
  X1L,
  X3H,
  C,
  C1L,
  C3H,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price for two ATM bought Calls.
X1L	Lower Strike Price or eXercise price for one ITM shorted Call.
X3H	Higher Strike Price or eXercise price for one OTM shorted Call.
C	Call Premium or Call Price paid for the two ATM bought Calls.
C1L	Call Premium or Call Price received for the first ITM shorted Call.
C3H	Call Premium or Call Price received for the one OTM shorted 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Call Butterfly Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
shortCallButterflyPnL(50,50,45,55,5,9,3)
shortCallButterflyPnL(400,400,375,425,6,9.5,7.5,hl=0.8,hu=1.2)
```

---

shortCallCondorPnL   *Calculates per share Profit and Loss (PnL) at expiration for Short Call*
                            Condor Option Strategy and draws its Bar Plot displaying PnL in the
                            Plots tab.

Description

This is a volatility strategy consisting of a short position in an ITM call option with a strike price
X1L, a long position in an ITM call option with a higher strike price X2Ml, a long position in an
OTM call option with a strike price X3Mu, and a short position in an OTM call option with a higher
strike price X4H. All strikes are equidistant: X4H minus X3Mu equals to X3Mu minus X2Ml;
equals to X2Mu minus X1L. This is a relatively low net credit trade. The trader or investor has a
neutral outlook (Kakushadze & Serur, 2018).

Usage

```
shortCallCondorPnL(
  ST,
  X1L,
  X2Ml,
  X3Mu,
  X4H,
  C1L,
  C2Ml,
  C3Mu,
  C4H,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price for one ITM shorted Call.
X2Ml	Middle-low Strike Price or eXercise price for two middle strike bought Calls.
X3Mu	Middle-upper Strike Price or eXercise price for two middle strike bought Calls.
X4H	Higher Strike Price or eXercise price for one OTM shorted Call.

C1L	Call Premium or Call Price received for the one ITM shorted Call.
C2Ml	Call Premium or Call Price paid for the middle-low bought Call.
C3Mu	Call Premium or Call Price paid for the middle-upper bought Call.
C4H	Call Premium or Call Price received for the one OTM shorted 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Call Condor Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
shortCallCondorPnL(52,45,50,55,60,10,7,4,3.)
shortCallCondorPnL(415,400,420,440,460,50,35,22,16,hl=0.95,hu=1.125)
```

---

shortIronButterflyPnL	*Calculates per share Profit and Loss (PnL) at expiration for Short Iron Butterfly Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This volatility strategy is a combination of a bear put spread and a bull call spread and consists of a short position in an OTM put option (out of the money put : put Strike price is lower than spot price) with a strike price X1L, a long position in an ATM (at the money) put option and an ATM (at the money) call option with a strike price X2M, and a short position in an OTM call option (out of the money call : call Strike price is higher than spot price) with a strike price X3H. The strikes are equidistant: X2M minus X1L equals to X3H minus X2M . This is a net debit trade. The trader or investor has an outlook that is neutral (Kakushadze & Serur, 2018).

Usage

```
shortIronButterflyPnL(
  ST,
  X1L,
  X2M,
  X3H,
  P1L,
  P2,
  C2,
  C3H,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price for one ITM shorted Put.
X2M	Medium trike Price or eXercise price for one bought Put and one bought Call.
X3H	Higher Strike Price or eXercise price for one OTM shorted Call.
P1L	Put Premium or Put Price received for the first ITM shorted Put.
P2	Put Premium or Put Price paid for the bought Put.
C2	Put Premium or Put Price paid for the bought Call.
C3H	Call Premium or Put Price received for the one OTM shorted 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Iron Butterfly Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
shortIronButterflyPnL(52,45,50,55,2,4,7,5)
shortIronButterflyPnL(405,400,410,420,8,12,14.5,9,hl=0.9,hu=1.1)
```

---

shortIronCondorPnL	*Calculates per share Profit and Loss (PnL) at expiration for Short Iron Condor Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This volatility strategy is a combination of a bear put spread and a bull call spread and consists of a short position in an OTM put option (out of the money put : put Strike price is lower than spot price X1L) with a strike price X1L, a long position in put option with higher Strike X2 price and a long position OTM (out of the money) call option with a strike price X3, and a short position in call option with a higher strike price X4H. The strikes are equidistant: X2 minus X1L equals to X4H minus X3 . This is a net debit trade. The trader or investor has an outlook that is neutral (Kakushadze & Serur, 2018).

Usage

```
shortIronCondorPnL(
  ST,
  X1L,
  X2,
  X3,
  X4H,
  P1L,
  P2,
  C3,
  C4H,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price for one OTM shorted Put.
X2	Strike Price or eXercise price for one bought Put.
X3	Strike Price or eXercise price for one bought Call.
X4H	Higher Strike Price or eXercise price for one OTM shorted Call.
P1L	Put Premium or Put Price received for the first OTM shorted Put.
P2	Put Premium or Put Price paid for the bought Put.
C3	Put Premium or Put Price paid for the bought Call.
C4H	Call Premium or Put Price received for the one OTM shorted 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Iron Condor Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
shortIronCondorPnL(52,45,50,55,60,2,4,5,3)
shortIronCondorPnL(405,400,410,420,430,8,11,13,9,hl=0.95,hu=1.1)
```

shortPutButterflyPnL *Calculates per share Profit and Loss (PnL) at expiration for Short Put Butterfly Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This is a volatility strategy consisting of a short position in an ITM put option (in the money put; strike price greater than spot price) with a strike price X1H, a long position in two ATM (at the money) put options with a strike price X2, and a short position in an OTM put option (out of the money : strike price less than spot price) with a strike price X3L . The strikes are equidistant: X2 minus X3L equals to X1H minus X2. This is a net credit trade. In this sense, this is an income strategy However, the potential reward is sizably smaller than with a short straddle or a short strangle (albeit with a lower risk). The trader or investor has a neutral outlook (Kakushadze & Serur, 2018).

Usage

```
shortPutButterflyPnL(
  ST,
  X2,
  X1H,
  X3L,
  P2,
  P1H,
  P3L,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X2	Strike Price or eXercise price for two ATM bought Puts.
X1H	Higher Strike Price or eXercise price for one ITM shorted Put.
X3L	Higher Strike Price or eXercise price for one OTM shorted Put.
P2	Put Premium or Put Price paid for the two ATM bought Puts.
P1H	Put Premium or Put Price received for the first ITM shorted Put.
P3L	Put Premium or Put Price received for the one OTM shorted 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.

spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Put Butterfly Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
shortPutButterflyPnL(50,50,55,45,6,9,5)
shortPutButterflyPnL(400,400,420,380,14,19,15,hl=0.9,hu=1.1)
```

---

shortPutCondorPnL	*Calculates per share Profit and Loss (PnL) at expiration for Short Put Condor Option Strategy and draws its Bar Plot displaying PnL in the Plots tab.*

Description

This is a volatility strategy consisting of a short position in an OTM Put option with a strike price X1L, a long position in an OTM Put option with a higher strike price X2Ml, a long position in an ITM Put option with a strike price X3Mu, and a short position in an ITM Put option with a higher strike price X4H. All strikes are equidistant: X4H minus X3Mu equals to X3Mu minus X2Ml; equals to X2Mu minus X1L. This is a relatively low net credit trade. As with a short put butterfly, the potential reward is sizably smaller than with a short straddle or a short strangle (albeit with a lower risk). So, this is a capital gain (rather than an income) strategy. The trader or investor has neutral outlook (Kakushadze & Serur, 2018).

Usage

```
shortPutCondorPnL(
  ST,
  X1L,
  X2Ml,
  X3Mu,
  X4H,
  P1L,
```

```
    P2Ml,
    P3Mu,
    P4H,
    hl = 0,
    hu = 2,
    spot = spot,
    pl = pl,
    myData = myData,
    myTibble = myTibble,
    PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X1L	Lower Strike Price or eXercise price for one ITM shorted Put.
X2Ml	Middle-low Strike Price or eXercise price for middle strike bought Put.
X3Mu	Middle-upper Strike Price or eXercise price for middle strike bought Put.
X4H	Higher Strike Price or eXercise price for one OTM shorted Put.
P1L	Put Premium or Put Price received for the one OTM shorted Put.
P2Ml	Put Premium or Put Price paid for the middle-low bought Put.
P3Mu	Put Premium or Put Price paid for the middle-upper bought Put.
P4H	Put Premium or Put Price received for the one ITM shorted 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Put Condor Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

```
shortPutCondorPnL(52,45,50,55,60,2,3,7,10.)
shortPutCondorPnL(425,400,420,440,460,16,22,35,50,hl=0.9,hu=1.125)
```

---

strapPnL   *Calculates per share Profit and Loss (PnL) at expiration for Strap Op-*
                                  tion Strategy and draws its Bar Plot displaying PnL in the Plots tab.

Description

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

Usage

```
strapPnL(
  ST,
  X,
  C1,
  C2,
  P,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C1	Call Premium or Call Price paid for first bought Call.
C2	Call Premium or Call Price paid for bought Call.
P	Put Premium paid for the 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 Strap Option Strategy and draw its graph in the Plots tab.

Value

graph of the strategy

Examples

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

---

stripPnL	*Calculates per share Profit and Loss (PnL) at expiration for Strip Option Strategy and draws its Bar Plot displaying PnL 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

```
stripPnL(
  ST,
  X,
  C,
  P1,
  P2,
  hl = 0,
  hu = 2,
  spot = spot,
  pl = pl,
  myData = myData,
  myTibble = myTibble,
  PnL = PnL
)
```

Arguments

ST	Spot Price at time T.
X	Strike Price or eXercise price.
C	Call Premium or Call Price paid for bought Call.
P1	Put Premium paid for the first bought put.
P2	Put Premium paid for the second 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.
spot	Spot Price
pl	Profit and Loss
myData	Data frame
myTibble	tibble
PnL	Profit and Loss

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 HypoVola December 9 call at $1.40 (outflow) and Buy two HypoVola December 9 Puts at $0.80 (outflow). This is a net debit trade and involves three cash outflows. The Bar Plot gets displayed in Plots tab.

Value

graph of the strategy

Examples

```
stripPnL(9,9,1.4,0.80,0.80)
stripPnL(40,40,2.00,1.25,1.25,hl=0.85,hu=1.25)
stripPnL(1000,1000,8,5.50,6.50,hl=0.985,hu=1.035)
```

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