

Internet Economics & Financial Technology  
*Computer Science COMSM0019*

Lecture 13:  
**Economic Agents**  
**and Market-Based Systems IV**

Dave Cliff  
Department of Computer Science  
University of Bristol

[csdtc@bristol.ac.uk](mailto:csdtc@bristol.ac.uk)

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*Options & Betting Markets*

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How to make money when prices are falling

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How to make money when prices are falling  
Or when they're not changing much  
Or when they're changing but could be up or could be down

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This lecture...

How to make money when prices are falling  
Or when they're not changing much  
Or when they're changing but could be up or could be down  
And: how to make more money when an asset goes up in value

## More specifically...

- Short-selling
- Derivatives: Futures & Options
- Options Strategies: strangles & straddles, butterflies & backspreads
- Betting Exchanges
- (Prediction Markets)

A large, orange, five-pointed starburst graphic is centered on a dark blue background. The starburst has a white outline and radiating points. Inside the starburst, the words "BONUS" and "FREE GIFT" are written in white, sans-serif capital letters, positioned diagonally from top-left to bottom-right.

BONUS  
FREE GIFT

AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Calibri (Body) 12 A<sup>b</sup> A<sup>c</sup> % Conditional Formatting Format as Table Cell Styles Cells Editing Ideas Sensitivity

G4 fx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1				<b>Long Strangle</b>			<b>Long Put 1</b>		<b>Long Call 2</b>							
2																
3							<b>Cost</b>		<b>Cost</b>							
4							0.05		0.10							
5							<b>Strike</b>		<b>Strike</b>							
6							0.40		0.50							
7				<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>						
8				0.00		0.25	1	0.35	1	-0.10						
9				0.01		0.24		0.34		-0.10						
10				0.02		0.23		0.33		-0.10						
11				0.03		0.22		0.32		-0.10						
12				0.04		0.21		0.31		-0.10						
13				0.05		0.20		0.30		-0.10						
14				0.06		0.19		0.29		-0.10						
15				0.07		0.18		0.28		-0.10						
16				0.08		0.17		0.27		-0.10						
17				0.09		0.16		0.26		-0.10						
18				0.10		0.15		0.25		-0.10						
19				0.11		0.14		0.24		-0.10						
20				0.12		0.13		0.23		-0.10						
21				0.13		0.12		0.22		-0.10						

L-Butterfly S-Butterfly L-Straddle S-Straddle **L-Strangle** S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio- + 130%

**Long Strangle**

Payoff

# Short-selling

## Market terminology:

- to *go long X*: to buy *X*, expecting the price to rise (a *bullish* position)
- to *go short X*: to sell *X*, expecting price to fall (a *bearish* position)
- Often abbreviated to just long/short, e.g. “*I’m short IBM*”

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## Short-selling:

- (a) Borrow  $n^*XYZ$  from a lender
- (b) Sell  $n^*XYZ$  now (time= $t_1$ ) at price  $P_1$
- (c) Price of  $XYZ$  falls to  $P_2$
- (d) At time=  $t_2$  buy  $n^*XYZ$  at  $P_2$  and return to lender
- (e) profit =  $n^*(P_1 - P_2) - \text{LenderFee} - \text{costs}$   
costs: e.g. storage/insurance/transport  
...this process can be formalized...

# Derivative Contracts

A contract that derives its value from some other asset:

- The asset is known as the *underlying*
  - Lots of types of derivatives; we don't have time to survey them all
- Future: contract that will be executed by/on a set *delivery* date
  - Futures contracts are required, obligated, to be executed/exercised
  - When contract is issued, it specifies the *forward price*
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  - Buyer of a forward is the *long position*, seller is *short position*

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  - Options contracts confer a right (but not an obligation) to exercise
  - Option specifies a *strike price* (or *strike*) aka the *exercise price*
  - Options to sell are *puts*, options to buy are *calls*

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Both futures & options are *standardized* and *exchange-traded*

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- Option: contract that may be executed
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Exchange-traded

Traded in a secondary market, on an exchange, like stocks and shares

Both futures & options are *standardized* and *exchange-traded*

# Derivatives Exchanges: 20 years of M&A



# Derivatives Exchanges: 24x7 electronic trading



# Equity Options: Basics

- One options contract: right to buy/sell N shares ( $N=100$ )
- Price of option depends on price of underlying, strike, & risk premium
- Strike price: the price at which you can buy/sell underlying on exercise
- Expiry: last date on which you can exercise option
  - American-style Options: exercise can happen any date up to expiry
  - European-style Options: exercise happens only on expiry date (*at maturity*)
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- Option is written/issued by its seller, held/exercised by its buyer
- Option price determined by three factors:
  - Intrinsic value: money received if the option is exercised now
  - Volatility premium: dependent on underlying's price volatility
  - Time Value: potential risk-free return on money saved wrt buying underlying
- Maths of option-pricing is intense: see [Black-Scholes-Merton](#) pricing model  
(which we are quite definitely not covering in any detail here)

# Options: Calls vs Puts

## Calls

- Right to buy N units of underlying
- Option-holder can buy at strike price
- If exercised, option-writer (seller) must sell N shares at strike price
- **In-the-money** (ITM) if the underlying price is greater than the strike price
- **Out-of-the-money** (OTM, **underwater**) if underlying price is less than strike
- **At-the-money** if underlying=strike

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## Puts

- Right to sell N units of underlying
- Option-holder can sell at strike price
- If exercised, option-writer must buy N shares at strike price
- **In-the-money (ITM)** if the underlying price is less than the strike price
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# Call example

- 1<sup>st</sup> Jan: XYZ stock price at \$25
    - Trader **B** thinks price of XYZ is going to rise a lot in next 3 months (bullish)
    - Trader **S** thinks this is not going to happen
- Both traders put money where their mouths are...
- S sells an **XYZ:Apr:30** call to B (right to buy 100\*XYZ at \$30 on 1<sup>st</sup> Apr)
  - Cost of the call is **C**; note the call is underwater/OTM at issue
  - let **U** be the price of the underlying (XYZ); let **K** be the strike price ( $K=30$ )
  - Intuitively: if  $U > (K-C/100)$  on 1<sup>st</sup> Apr, B makes money, otherwise S does

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- E.G.I: Say  $C=\$50$  and on 1<sup>st</sup> Apr  $XYZ \text{ price}=\$35$  ( $35 > (30-50/100)$ , so ITM)
- Trader B exercises option, buys 100xXYZ @K from Trader S, for \$3,000.
- Trader B then immediately sells 100xXYZ @U on open market, for \$3,500.
- Trader B profit is  $\$(3,500-3000)-50 = \$450$
- Trader S could have sold 100 XYZ on open market for £3,500 but instead had to sell them to Trader B for £3000, so that is a loss of \$500, but keeps the \$50 paid for the option by Trader B, so Trader S total loss is \$450.

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  - E.G.2: Say  $C=\$50$  and on 1<sup>st</sup> Apr XYZ price=\$20 ( $20 < (30-50)/100$ ), so **OTM**)
  - Trader B chooses not to exercise option has **lost** \$50
  - Trader S **profit** is the \$50 that was paid by B.

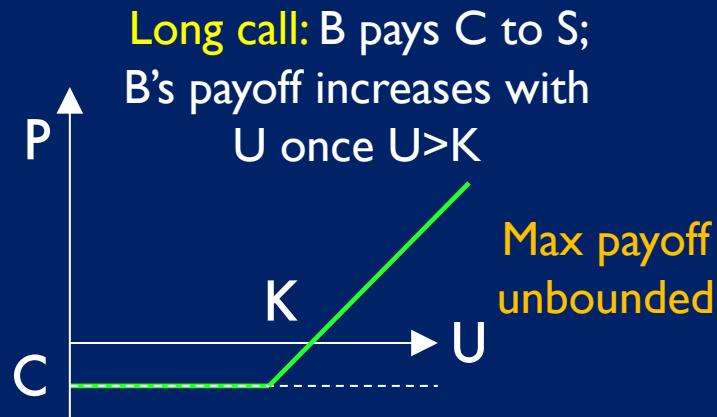
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Represent the possible outcomes by *payoff diagrams*: payoff  $P = f(U, C, t) \dots$



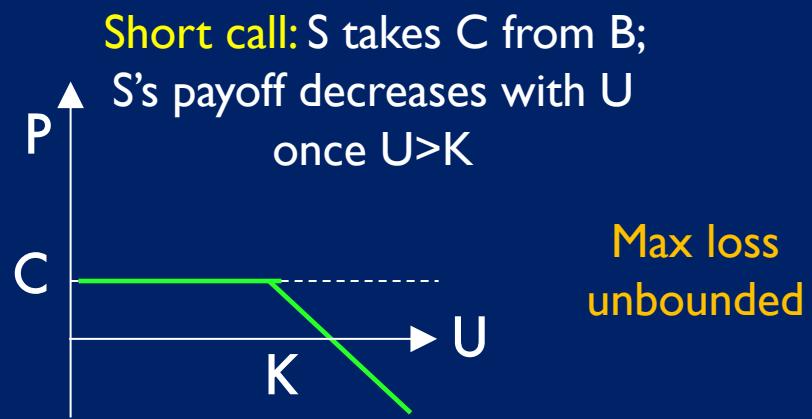
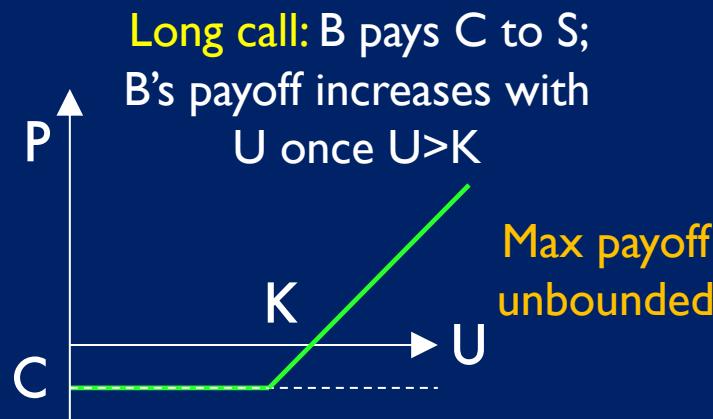
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# Put example

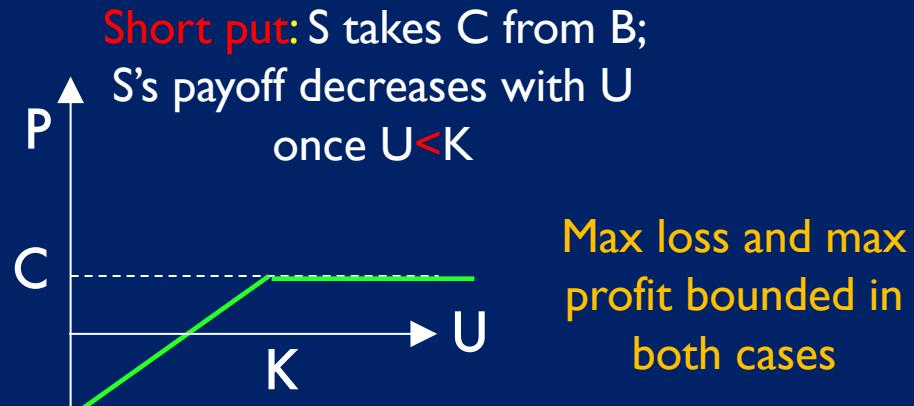
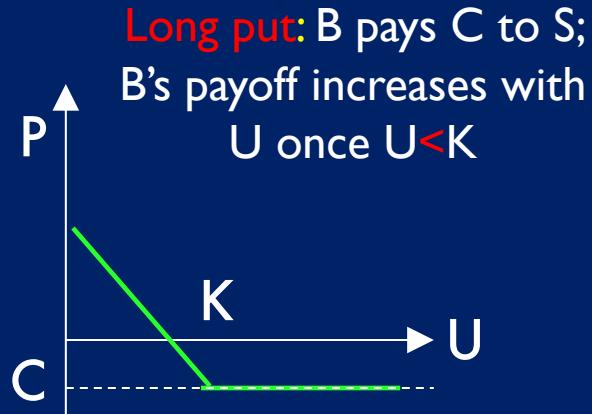
(only the changes wrt call are in red ink)

- 1<sup>st</sup> Jan: XYZ stock price at \$25
  - Trader B thinks price of XYZ is going to fall a lot in next 3 months (bearish)
  - Trader S thinks this is not going to happen

Both traders put money where their mouths are...

- S sells an XYZ:Apr:**20 put** to B (right to sell 100\*XYZ at \$**20** on 1<sup>st</sup> Apr)
- Cost of the **put** is C; note the **put** is underwater/OTM at issue
- let U be the price of the underlying (XYZ); let K be the strike price (**K=20**)
- Intuitively: if  $U < (K-C/100)$  on 1<sup>st</sup> Apr, B makes money, otherwise S does

Represent the possible outcomes by *payoff diagrams*: payoff  $P = f(U, C, t) \dots$



How to make more money when an asset goes up in value...  
Say XYZ is currently at £100, but you think it will rise to >£110

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**SAFE:** buy 100 shares of XYZ for £10,000,  
wait

XYZ rises to £120 => your investment is worth £12,000 (+20%)

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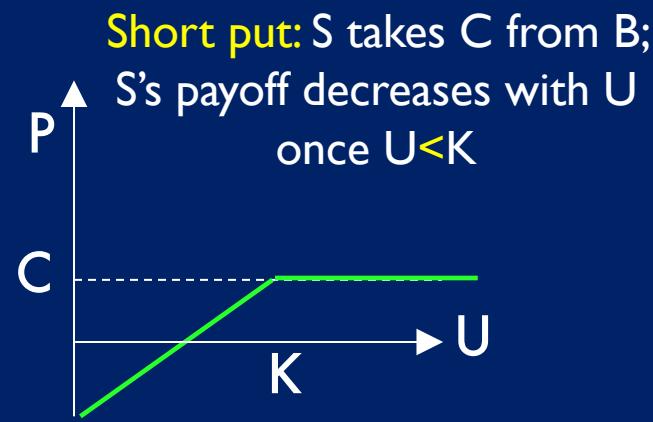
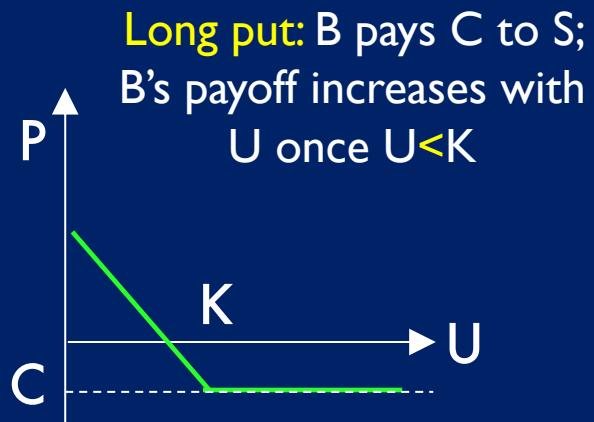
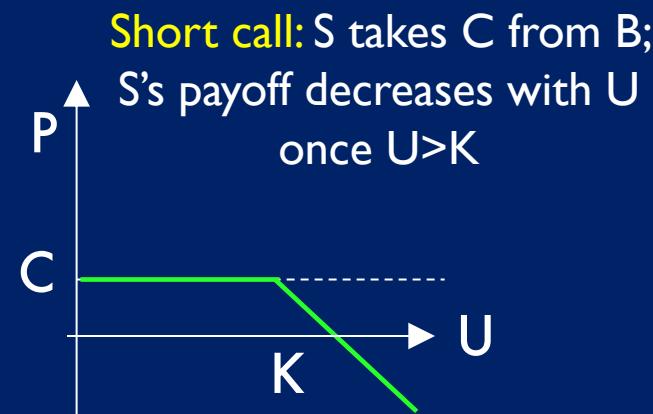
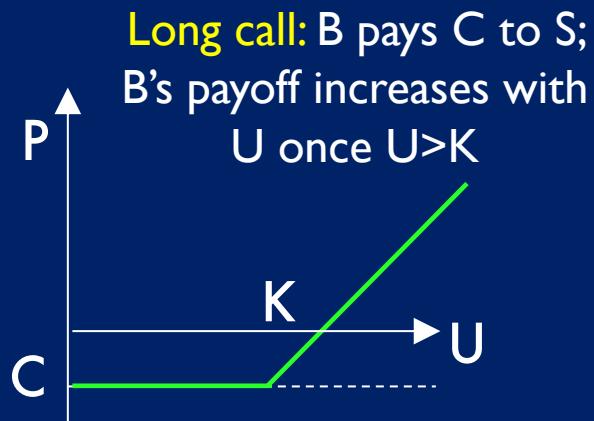
XYZ rises to £120 => your investment is worth £12,000 (+20%)  
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**RISKY:** buy 100 XYZ:110 long calls (each call = 100\*XYZ) for £10,000,  
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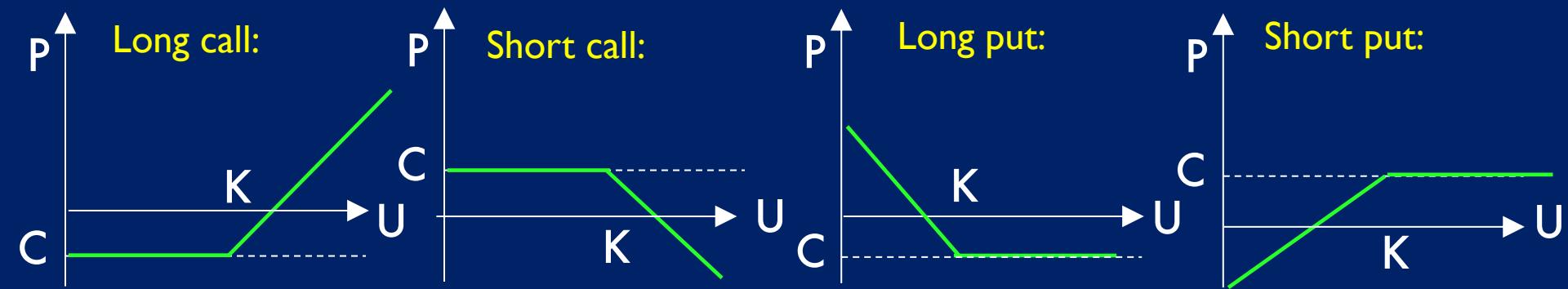
XYZ rises to £120 => your options are worth £50,000 (+400%)  
XYZ falls to £80 => your options are worth £0 (-100%)

This is an illustration of **GEARING**

# Options strategies (combinations of multiple options)

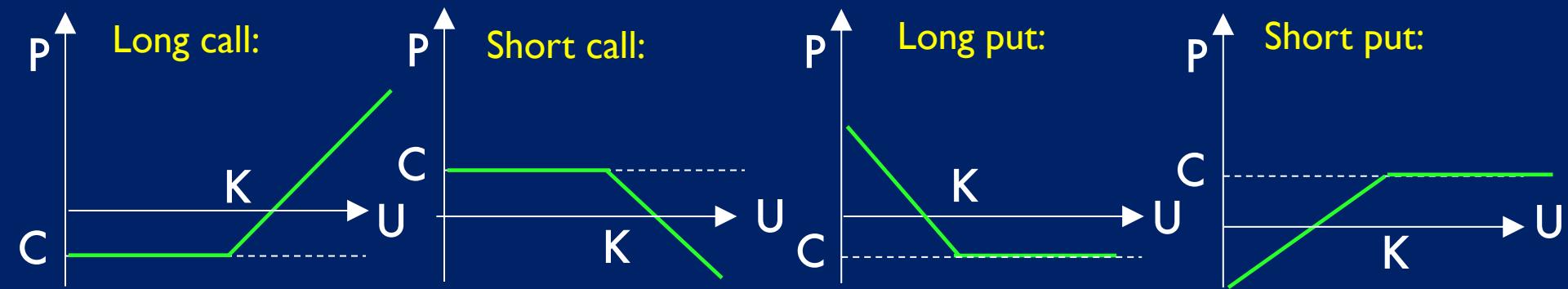


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Using combinations of  
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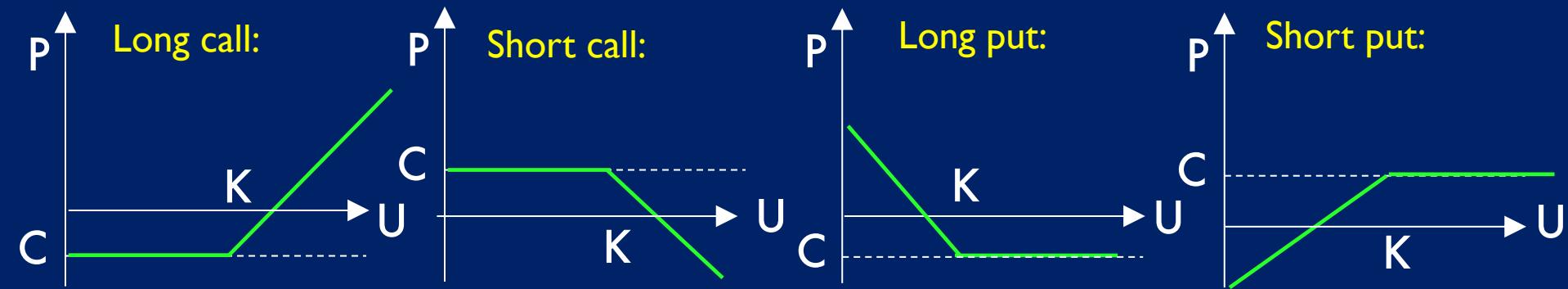
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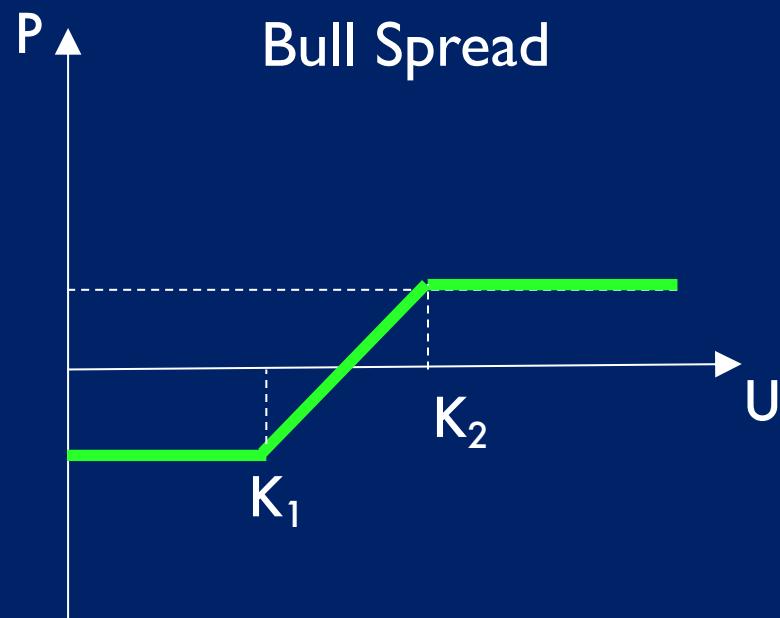
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Bull Spread

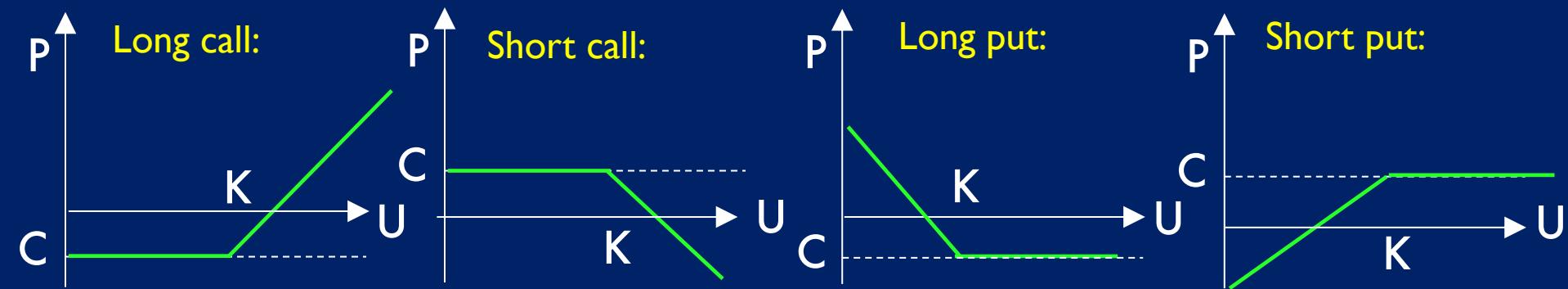
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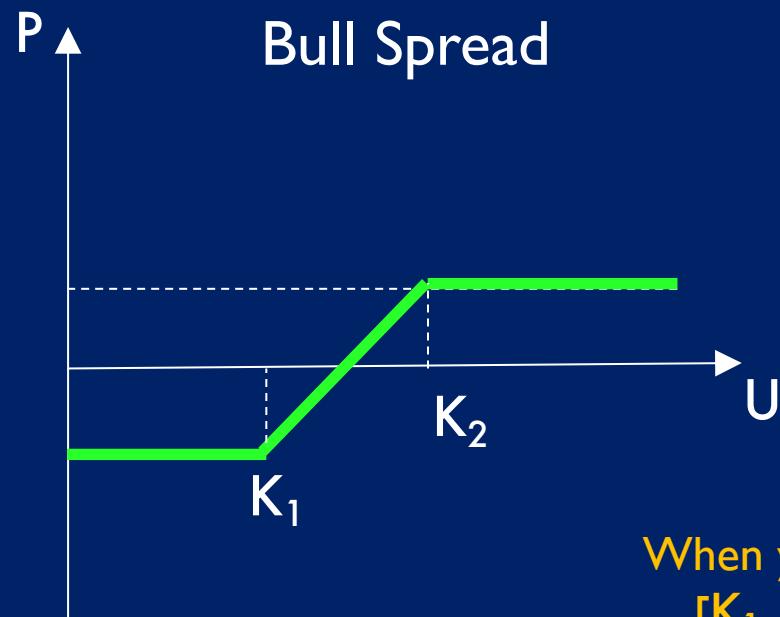
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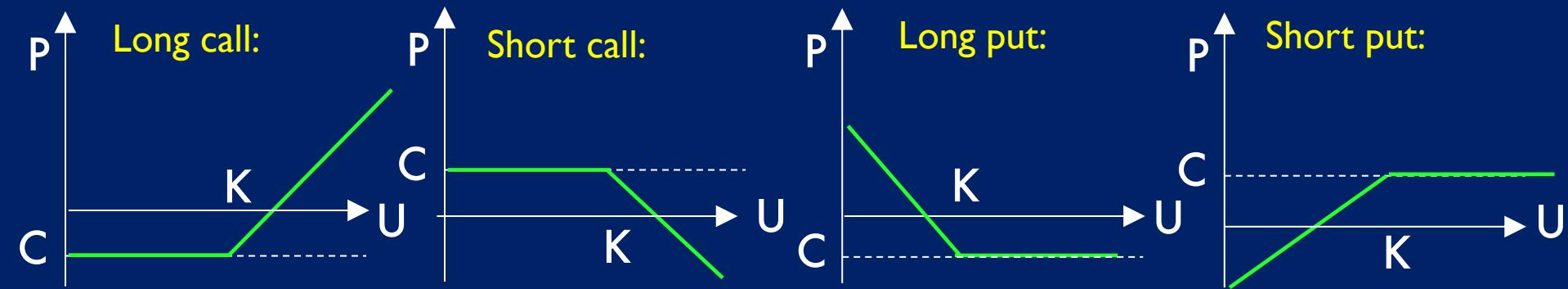


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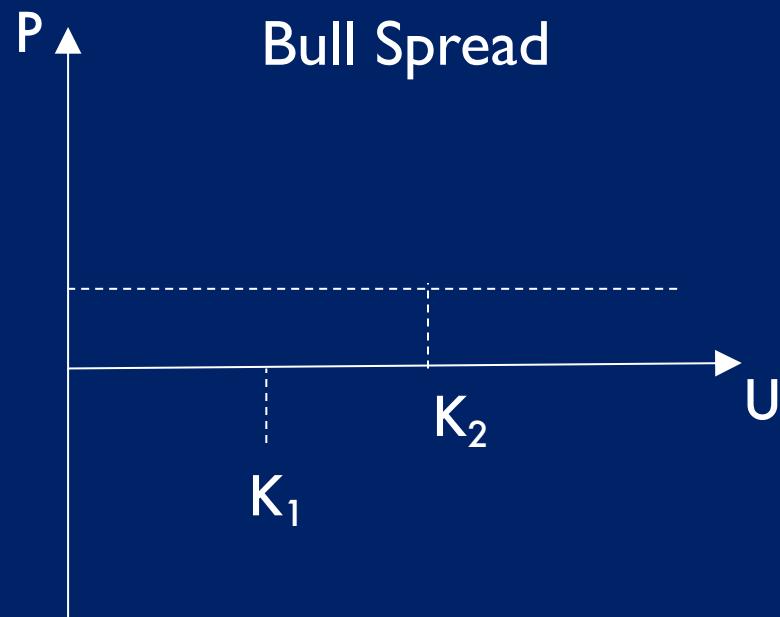


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[ $K_1, K_2$ ] or better at maturity

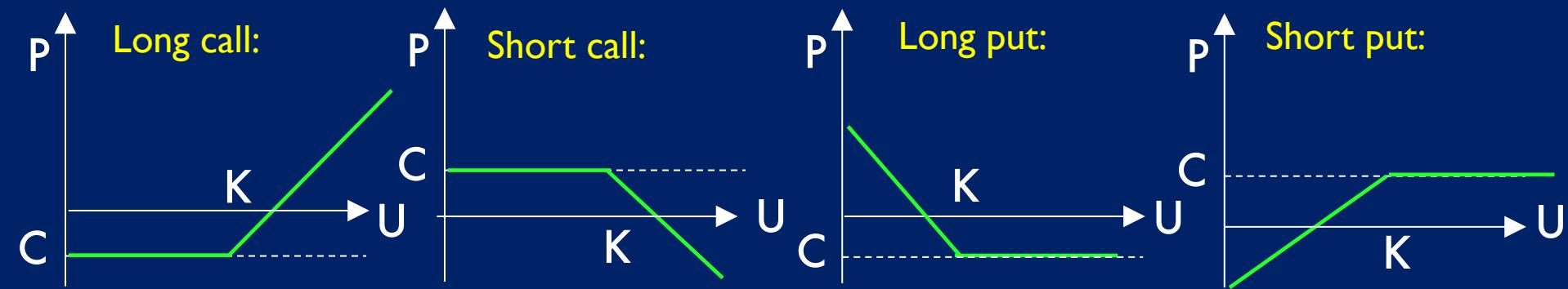
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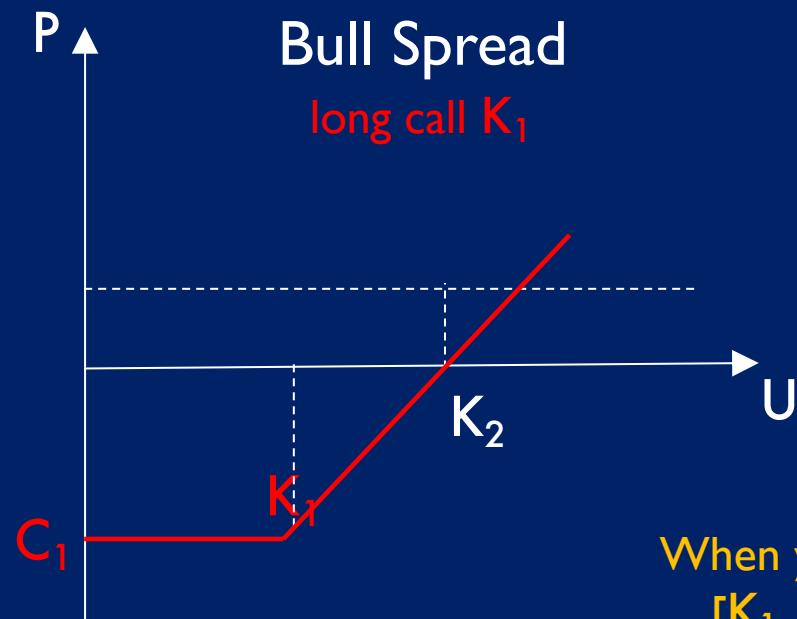
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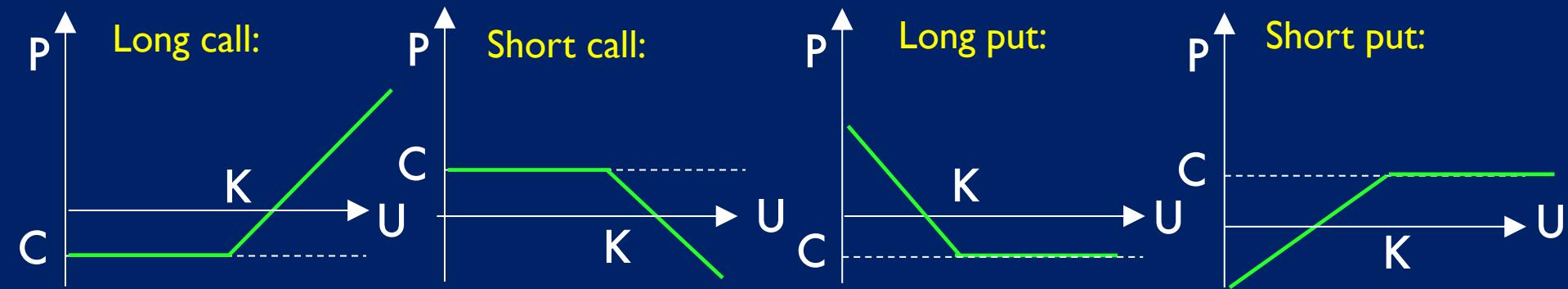


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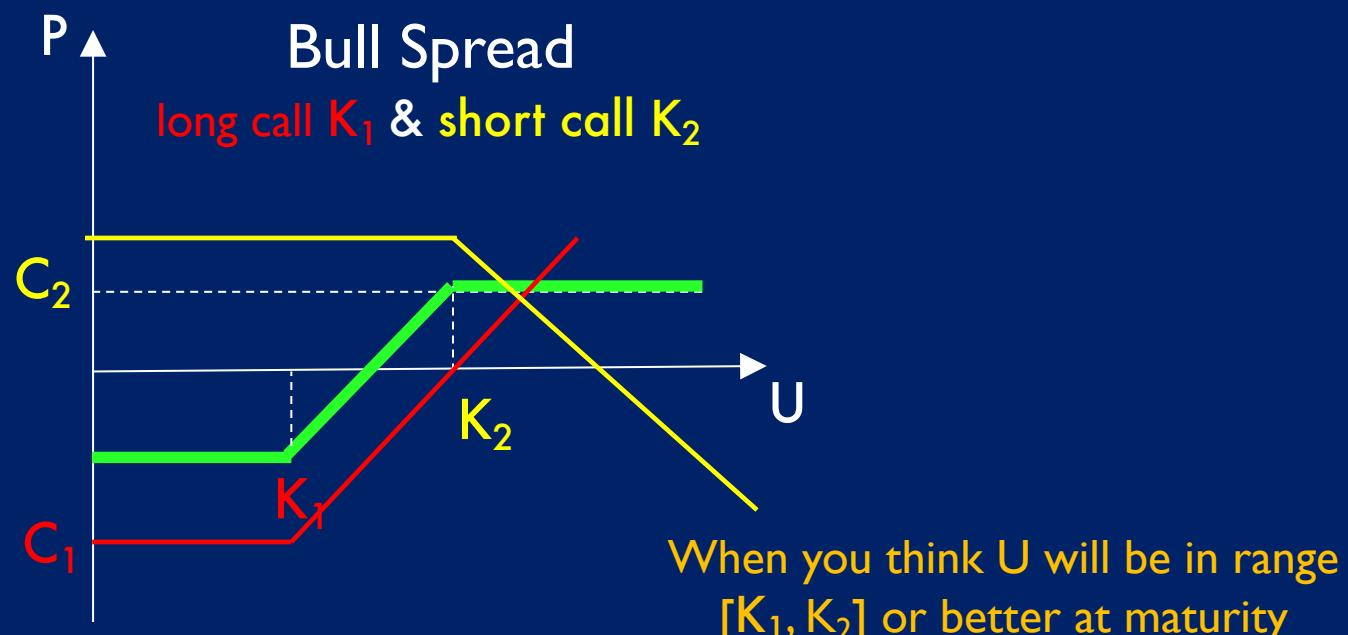


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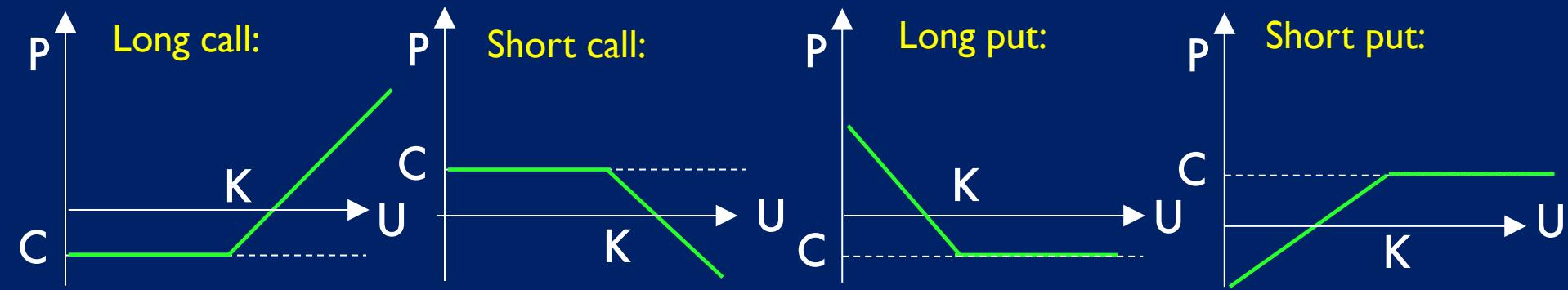
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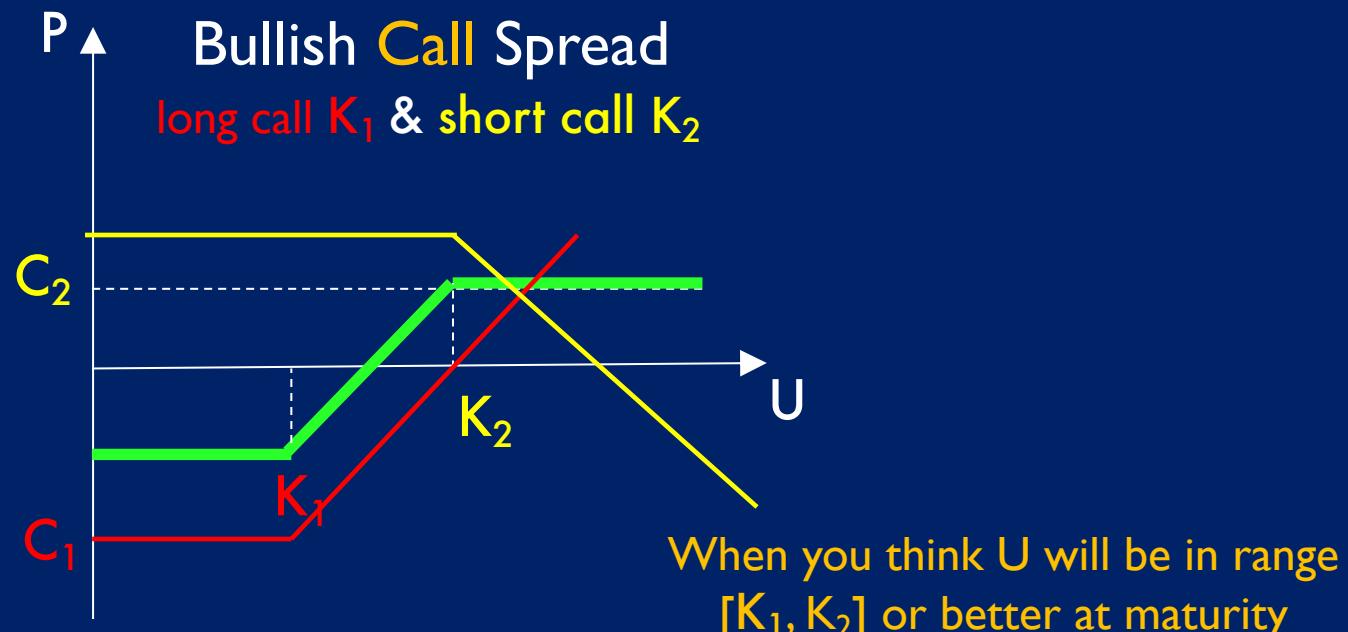
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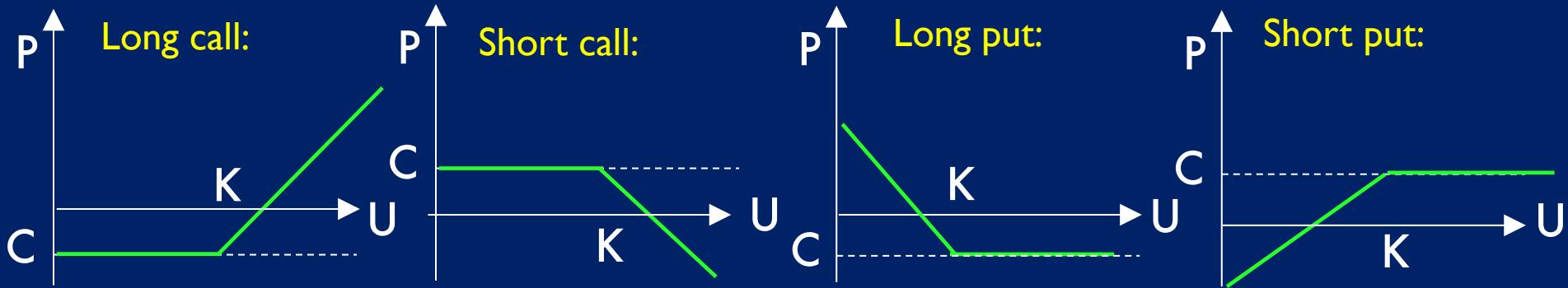
# Options strategies (combinations of multiple options)



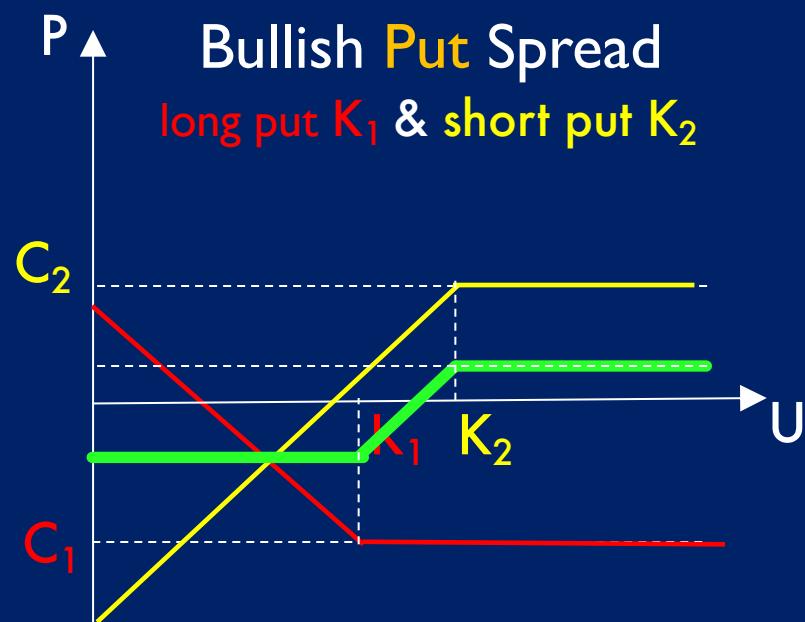
Using combinations of  
these four, can you  
structure a...



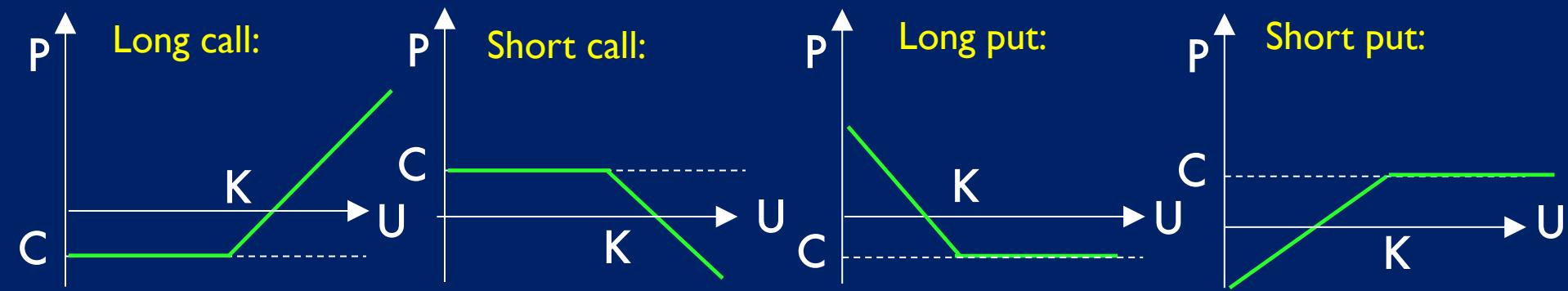
# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



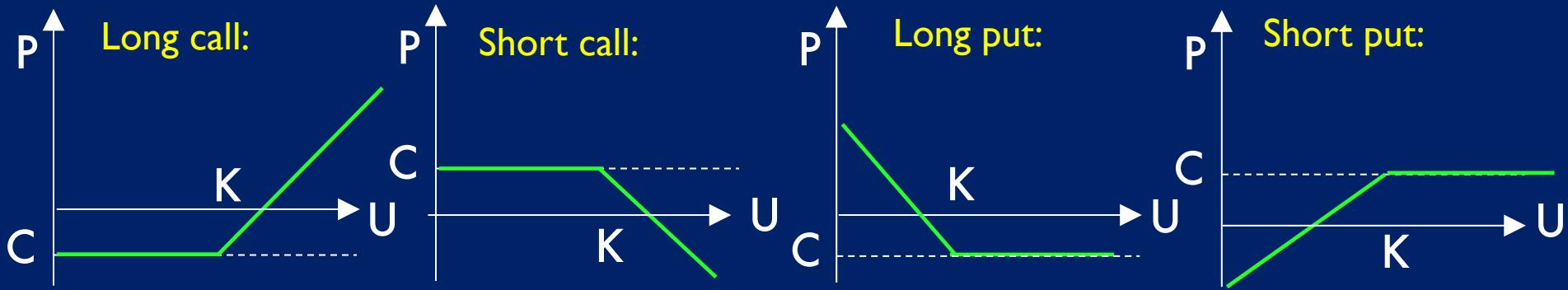
# Options strategies (combinations of multiple options)



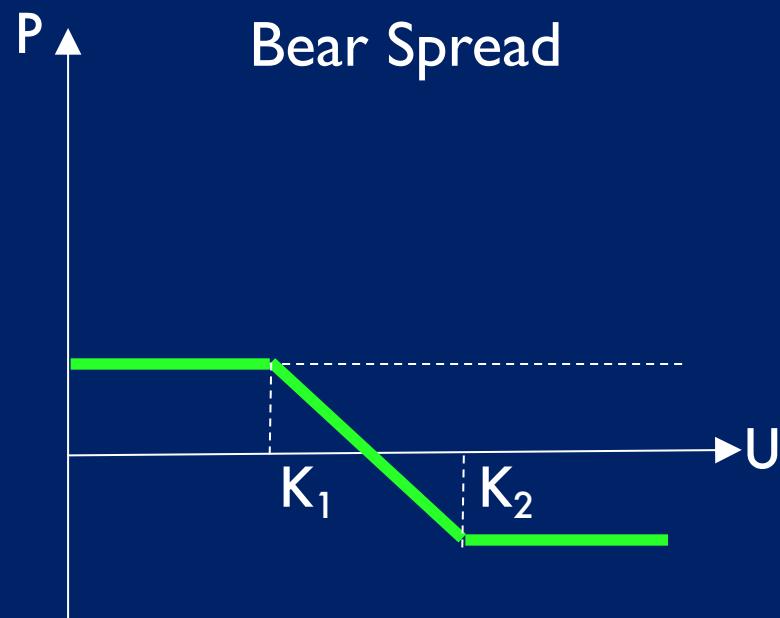
Using combinations of  
these four, can you  
structure a...



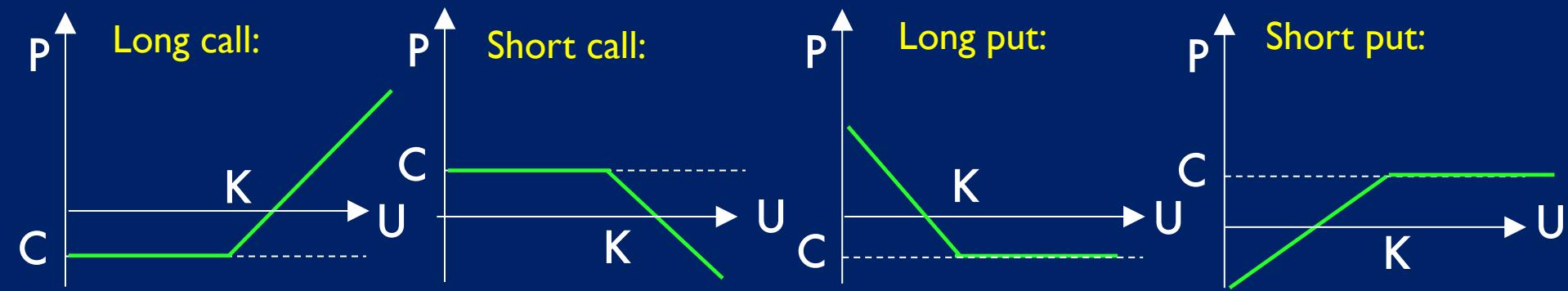
# Options strategies (combinations of multiple options)



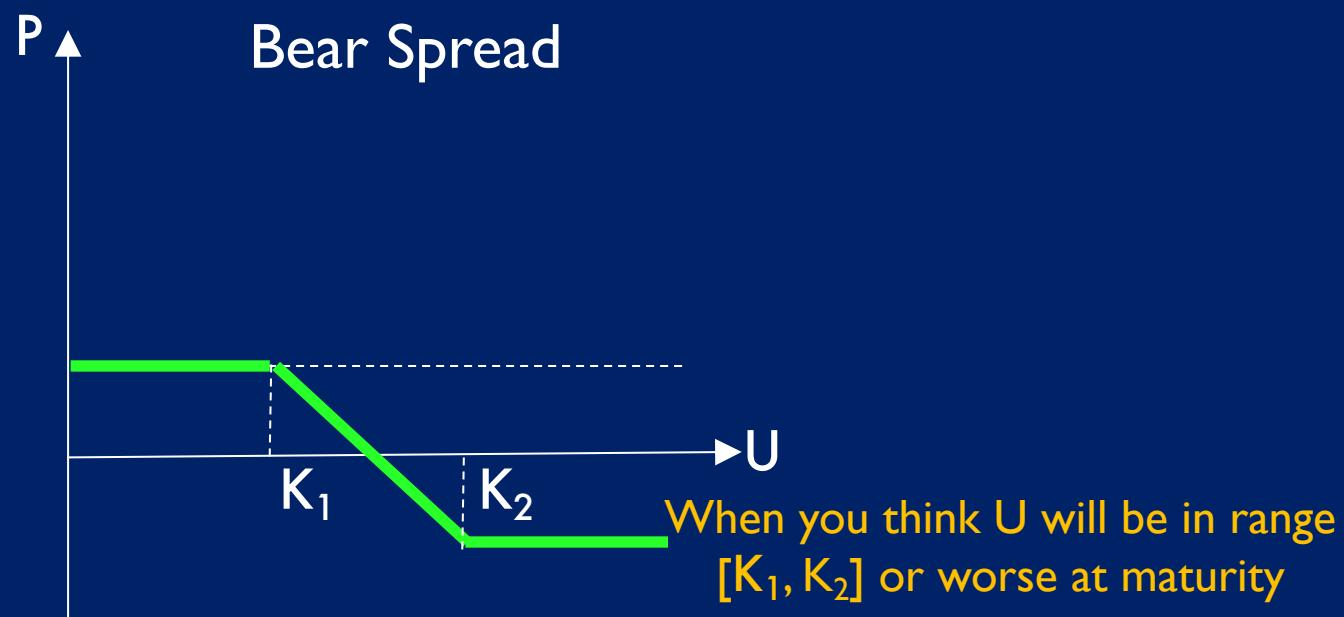
Using combinations of  
these four, can you  
structure a...



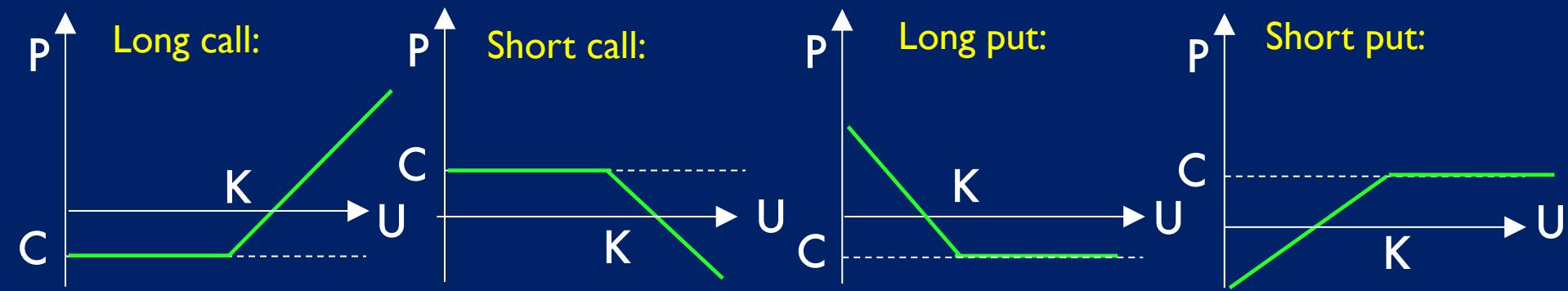
# Options strategies (combinations of multiple options)



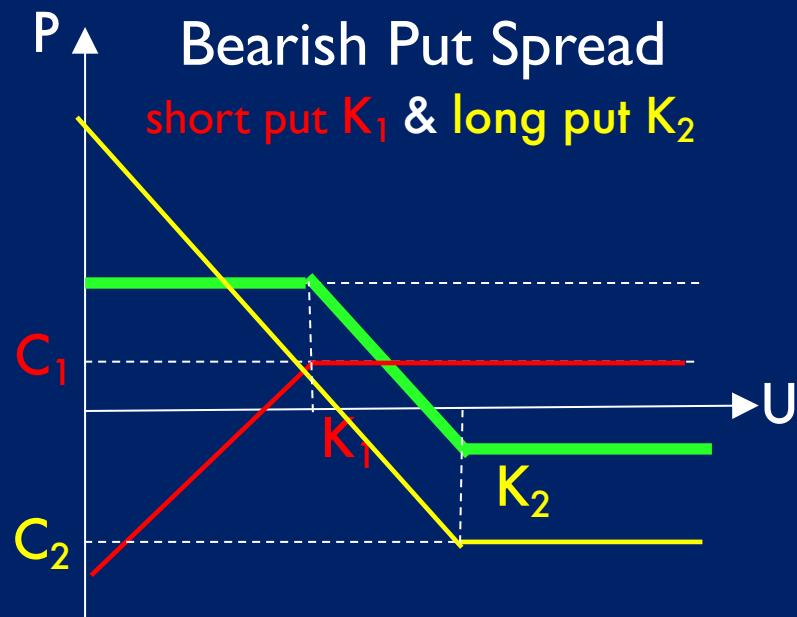
Using combinations of  
these four, can you  
structure a...



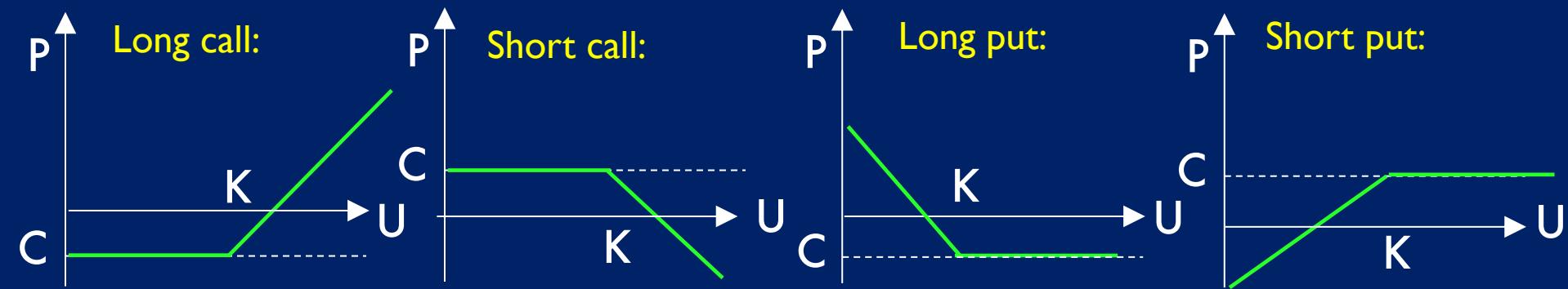
# Options strategies (combinations of multiple options)



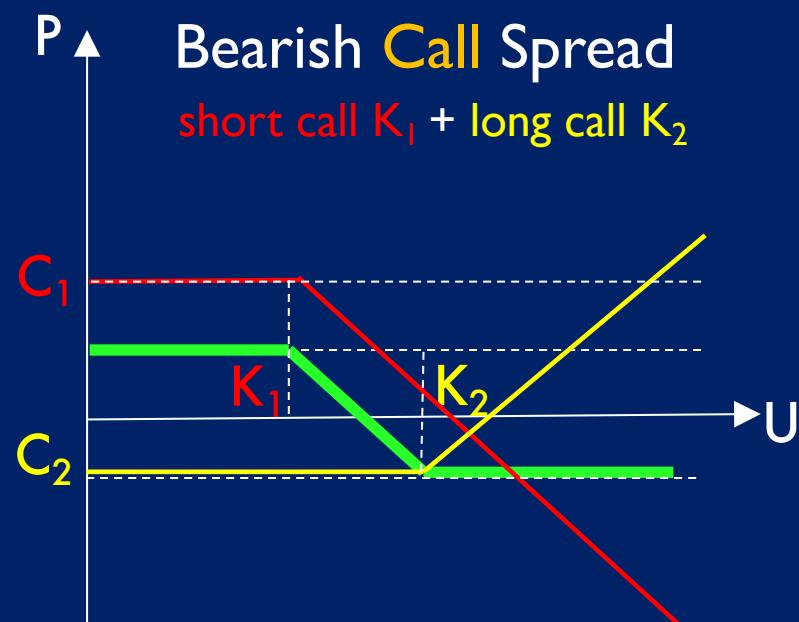
Using combinations of  
these four, can you  
structure a...



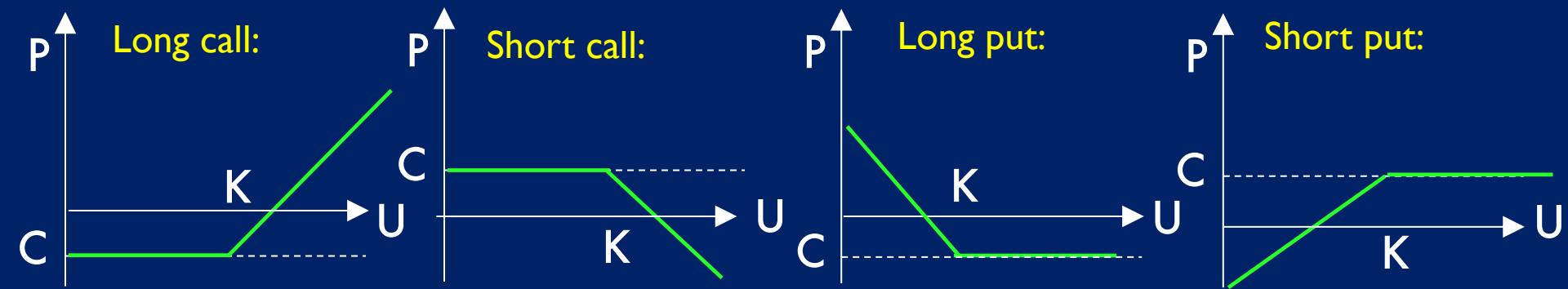
# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...

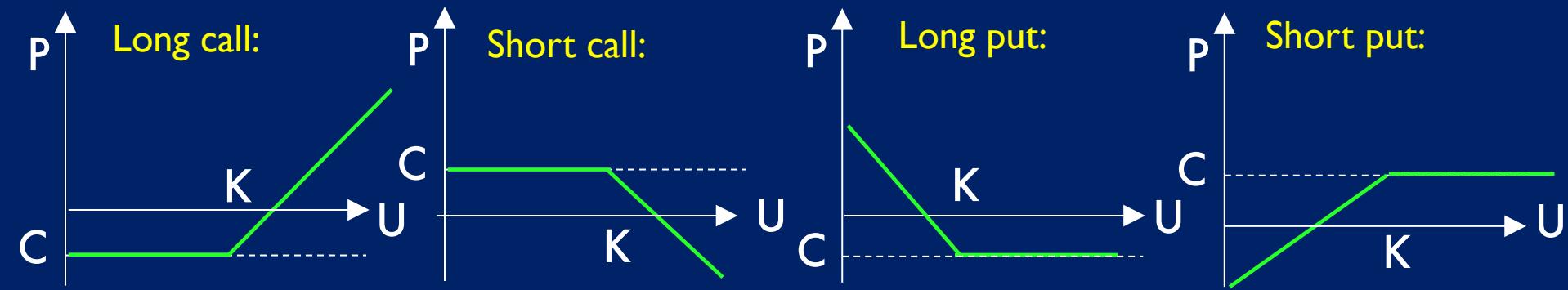


# Options strategies (combinations of multiple options)

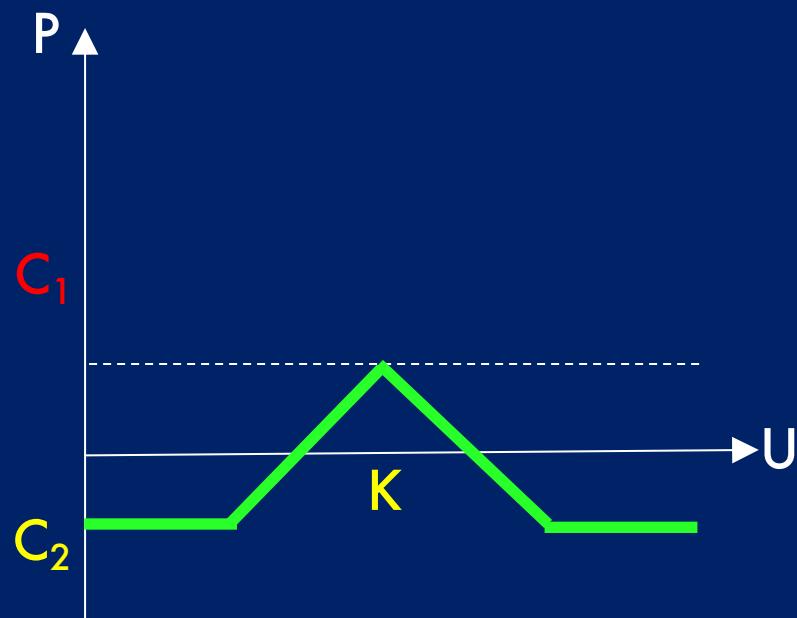


Using combinations of  
these four, can you  
structure a...

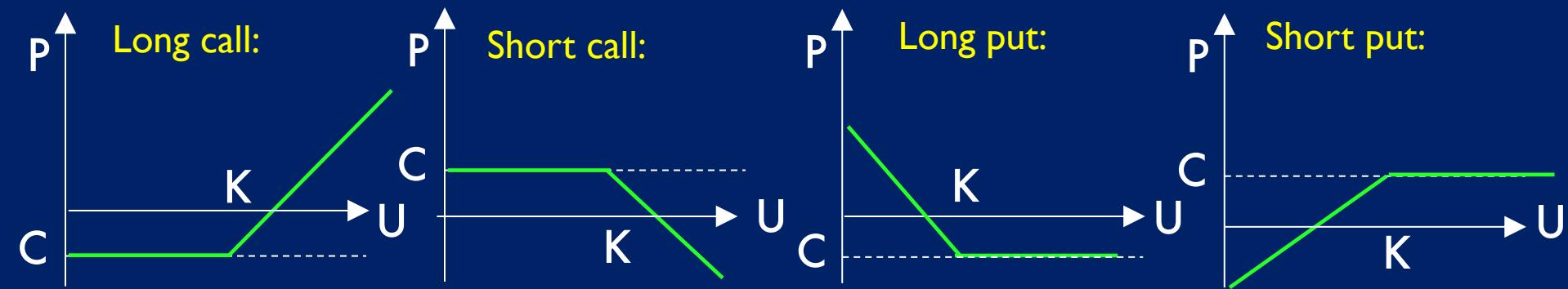
# Options strategies (combinations of multiple options)



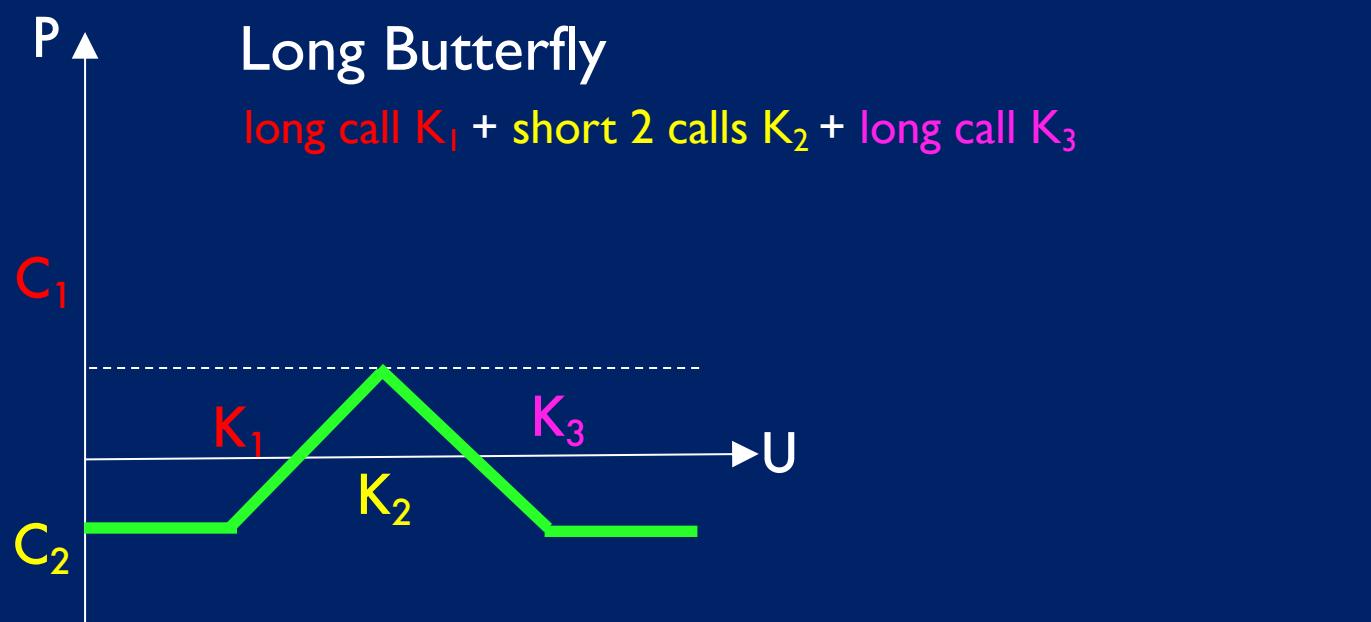
Using combinations of  
these four, can you  
structure a...



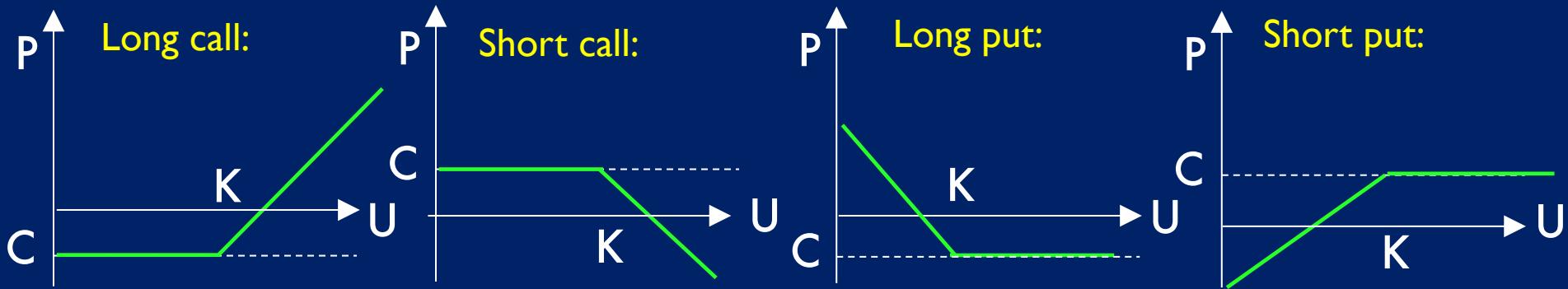
# Options strategies (combinations of multiple options)



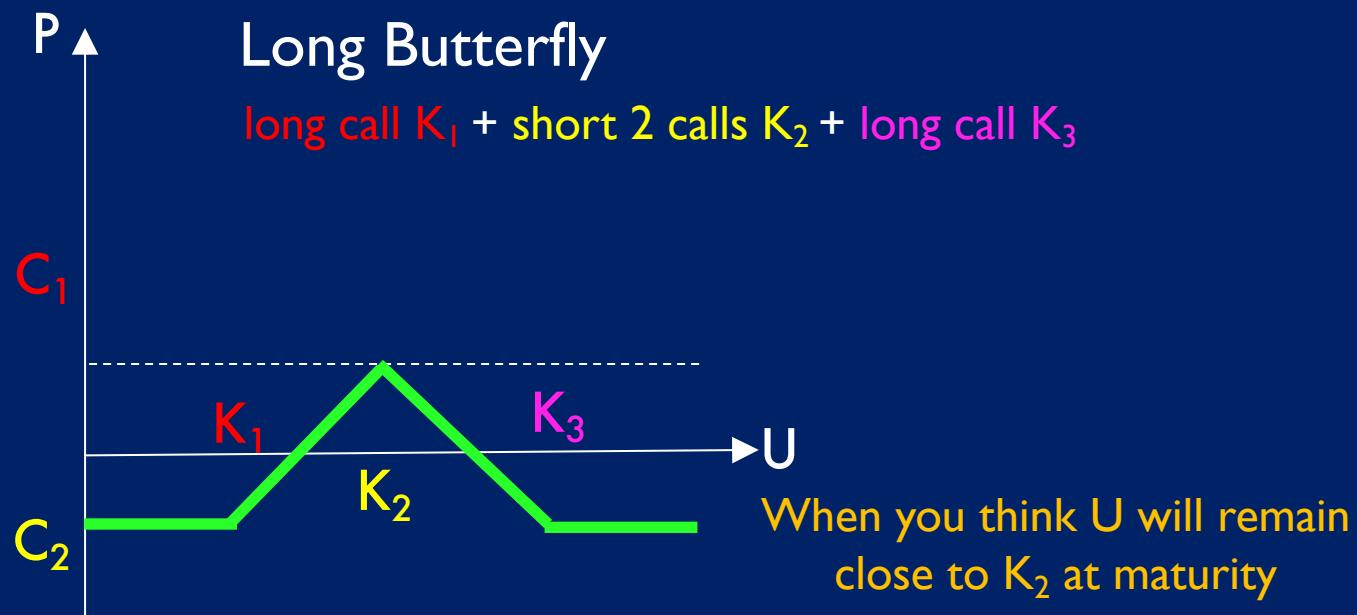
Using combinations of  
these four, can you  
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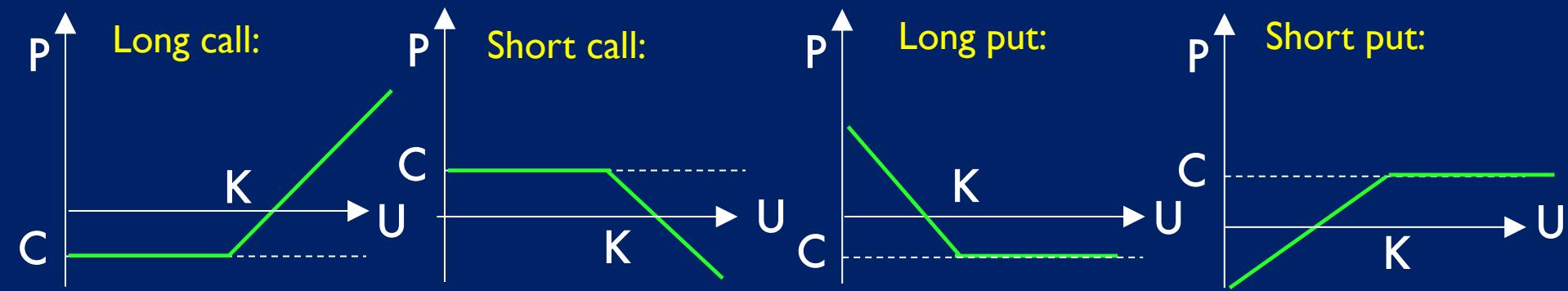
# Options strategies (combinations of multiple options)



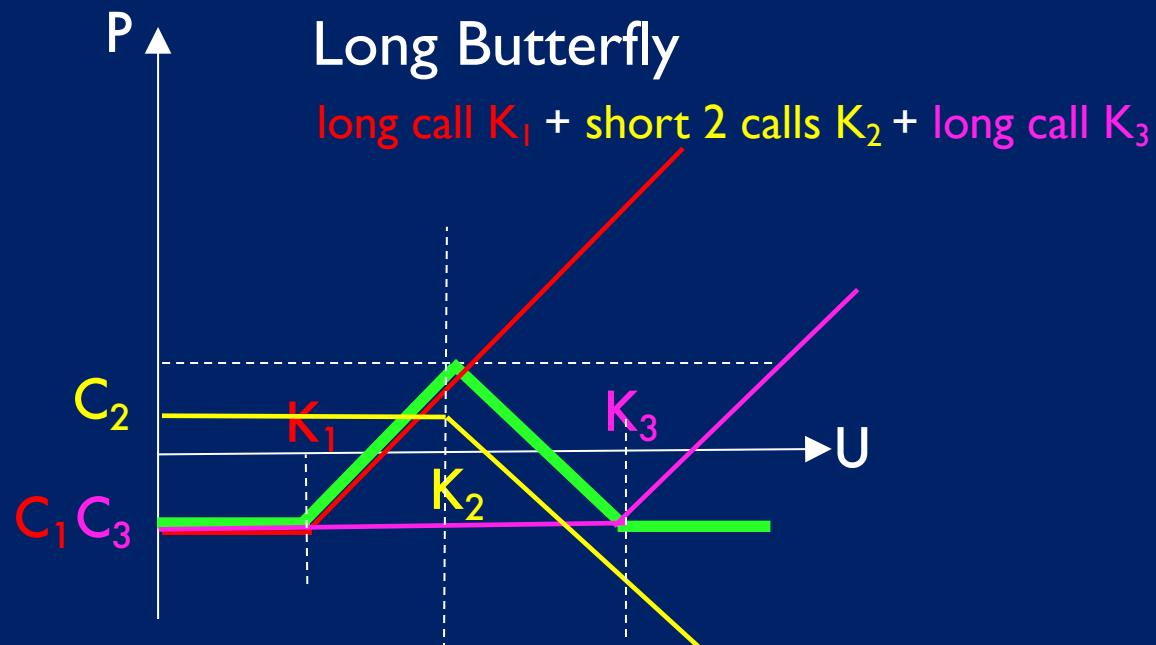
Using combinations of  
these four, can you  
structure a...



# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Paste Calibri (Body) 12 A A Conditional Formatting Insert Format as Table Delete Cell Styles

A1 f<sub>x</sub>

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1					<b>Long Butterfly</b>	<b>Long Call 1</b>		<b>Short Call 1</b>		<b>Long Call 2</b>								
2																		
3						<b>Cost</b>		<b>Cost</b>		<b>Cost</b>								
4		<b>Tick</b>				0.22		-0.20		0.22								
5		0.01						<b>Strike</b>		<b>Strike</b>		<b>Strike</b>						
6								0.10		0.20		0.30						
7		<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>								
8		0.00		-0.04	1	-0.22	2	0.20	1	-0.22								
9		0.01		-0.04		-0.22		0.20		-0.22								
10		0.02		-0.04		-0.22		0.20		-0.22								
11		0.03		-0.04		-0.22		0.20		-0.22								
12		0.04		-0.04		-0.22		0.20		-0.22								
13		0.05		-0.04		-0.22		0.20		-0.22								
14		0.06		-0.04		-0.22		0.20		-0.22								
15		0.07		-0.04		-0.22		0.20		-0.22								
16		0.08		-0.04		-0.22		0.20		-0.22								
17		0.09		-0.04		-0.22		0.20		-0.22								
18		0.10		-0.04		-0.22		0.20		-0.22								
19		0.11		-0.03		-0.21		0.20		-0.22								
20		0.12		-0.02		-0.20		0.20		-0.22								
21		0.13		-0.01		-0.19		0.20		-0.22								
22		0.14		0.00		-0.18		0.20		-0.22								
23		0.15		0.01		-0.17		0.20		-0.22								
24		0.16		0.02		-0.16		0.20		-0.22								
25		0.17		0.03		-0.15		0.20		-0.22								
26		0.18		0.04		-0.14		0.20		-0.22								
27		0.19		0.05		-0.13		0.20		-0.22								
28		0.20		0.06		-0.12		0.20		-0.22								

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

**Long Butterfly**

*Spreadsheet Video Insert Here*

AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Paste Calibri (Body) 12 A A Conditional Formatting Insert Cell Styles

B I U Format as Table Delete Format Ideas Sensitivity

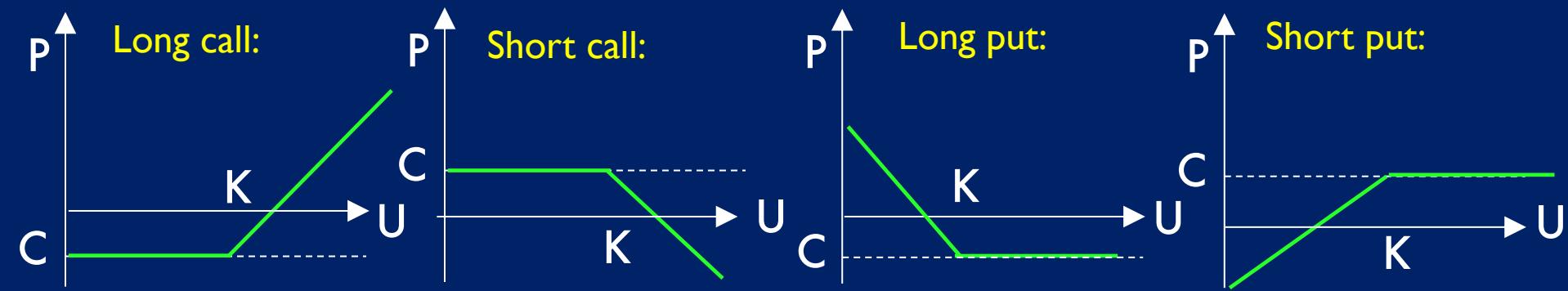
A1 f<sub>x</sub>

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1					<b>Long Butterfly</b>	<b>Long Call 1</b>		<b>Short Call 1</b>		<b>Long Call 2</b>								
2																		
3						<b>Cost</b>		<b>Cost</b>		<b>Cost</b>								
4		<b>Tick</b>				0.22		-0.20		0.22								
5		0.01						<b>Strike</b>		<b>Strike</b>		<b>Strike</b>						
6								0.10		0.20		0.30						
7		<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>								
8		0.00		-0.04	1	-0.22	2	0.20	1	-0.22								
9		0.01		-0.04		-0.22		0.20		-0.22								
10		0.02		-0.04		-0.22		0.20		-0.22								
11		0.03		-0.04		-0.22		0.20		-0.22								
12		0.04		-0.04		-0.22		0.20		-0.22								
13		0.05		-0.04		-0.22		0.20		-0.22								
14		0.06		-0.04		-0.22		0.20		-0.22								
15		0.07		-0.04		-0.22		0.20		-0.22								
16		0.08		-0.04		-0.22		0.20		-0.22								
17		0.09		-0.04		-0.22		0.20		-0.22								
18		0.10		-0.04		-0.22		0.20		-0.22								
19		0.11		-0.03		-0.21		0.20		-0.22								
20		0.12		-0.02		-0.20		0.20		-0.22								
21		0.13		-0.01		-0.19		0.20		-0.22								
22		0.14		0.00		-0.18		0.20		-0.22								
23		0.15		0.01		-0.17		0.20		-0.22								
24		0.16		0.02		-0.16		0.20		-0.22								
25		0.17		0.03		-0.15		0.20		-0.22								
26		0.18		0.04		-0.14		0.20		-0.22								
27		0.19		0.05		-0.13		0.20		-0.22								
28		0.20		0.06		-0.12		0.20		-0.22								

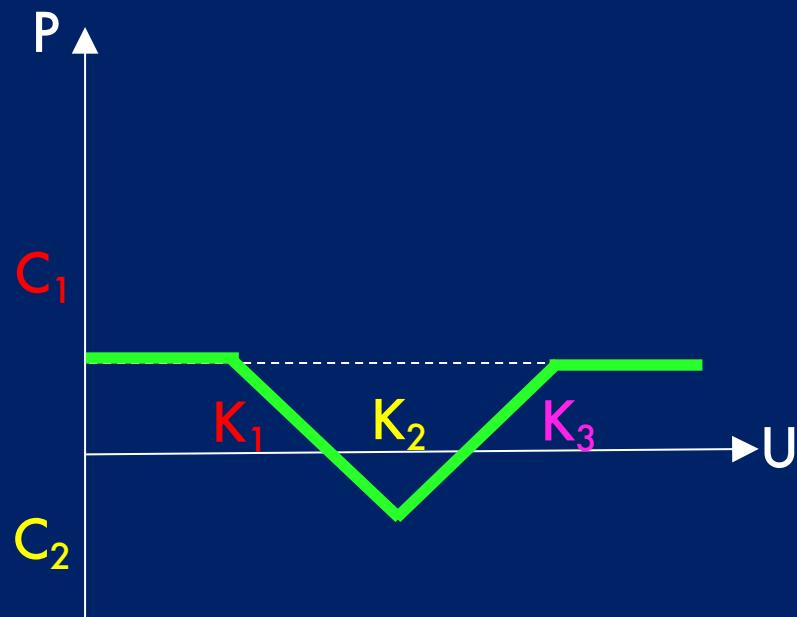
L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

**Long Butterfly**

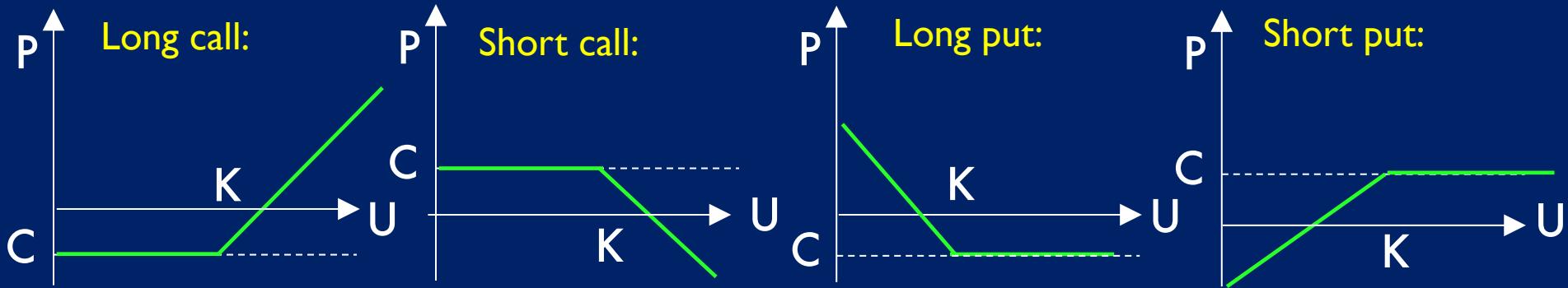
# Options strategies (combinations of multiple options)



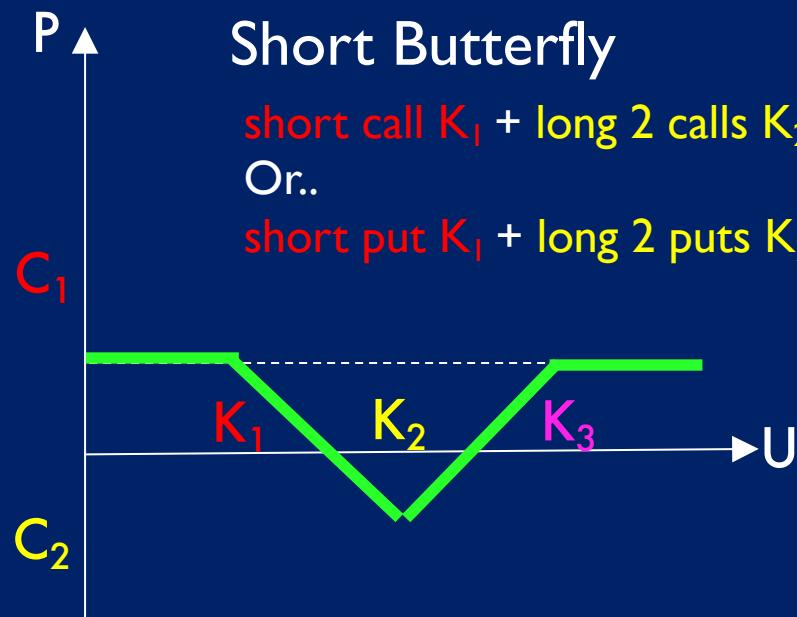
Using combinations of  
these four, can you  
structure a...



# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Paste Calibri (Body) 12 A A Conditional Formatting Insert Format as Table Delete Cell Styles

A1 Short Butterfly Short Call 1 Long Call 2 Short Call 1

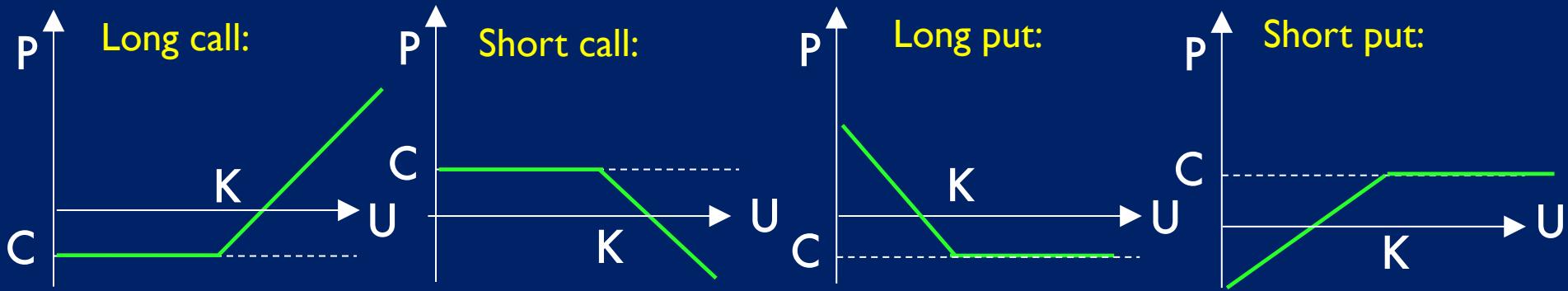
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1				<b>Short Butterfly</b>		<b>Short Call 1</b>		<b>Long Call 2</b>		<b>Short Call 1</b>								
2																		
3						<b>Cost</b>		<b>Cost</b>		<b>Cost</b>								
4						-0.22		0.20		-0.22								
5							<b>Strike</b>		<b>Strike</b>		<b>Strike</b>							
6							0.01		0.20		0.40							
7				<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>						
8				0.00		0.04	1	0.22	2	-0.20	1	0.22						
9				0.01		0.04		0.22		-0.20		0.22						
10				0.02		0.04		0.22		-0.20		0.22						
11				0.03		0.04		0.22		-0.20		0.22						
12				0.04		0.04		0.22		-0.20		0.22						
13				0.05		0.04		0.22		-0.20		0.22						
14				0.06		0.04		0.22		-0.20		0.22						
15				0.07		0.04		0.22		-0.20		0.22						
16				0.08		0.04		0.22		-0.20		0.22						
17				0.09		0.04		0.22		-0.20		0.22						
18				0.10		0.04		0.22		-0.20		0.22						
19				0.11		0.04		0.22		-0.20		0.22						
20				0.12		0.04		0.22		-0.20		0.22						
21				0.13		0.04		0.22		-0.20		0.22						
22				0.14		0.04		0.22		-0.20		0.22						
23				0.15		0.04		0.22		-0.20		0.22						
24				0.16		0.04		0.22		-0.20		0.22						
25				0.17		0.04		0.22		-0.20		0.22						
26				0.18		0.04		0.22		-0.20		0.22						
27				0.19		0.04		0.22		-0.20		0.22						
28				0.20		0.04		0.22		-0.20		0.22						

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

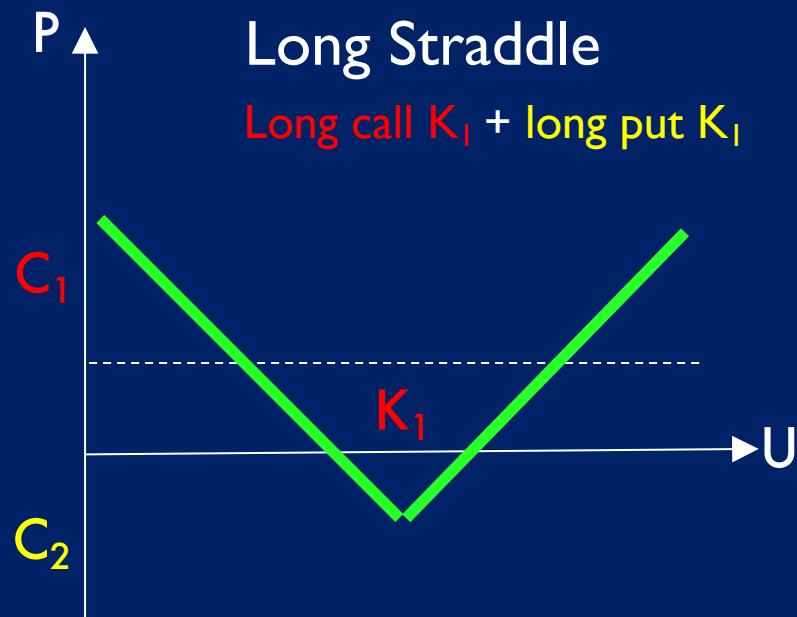
Short Butterfly

Payoff

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Paste Calibri (Body) 12 A A Conditional Formatting Insert Format as Table Delete Cell Styles

A1 f<sub>x</sub>

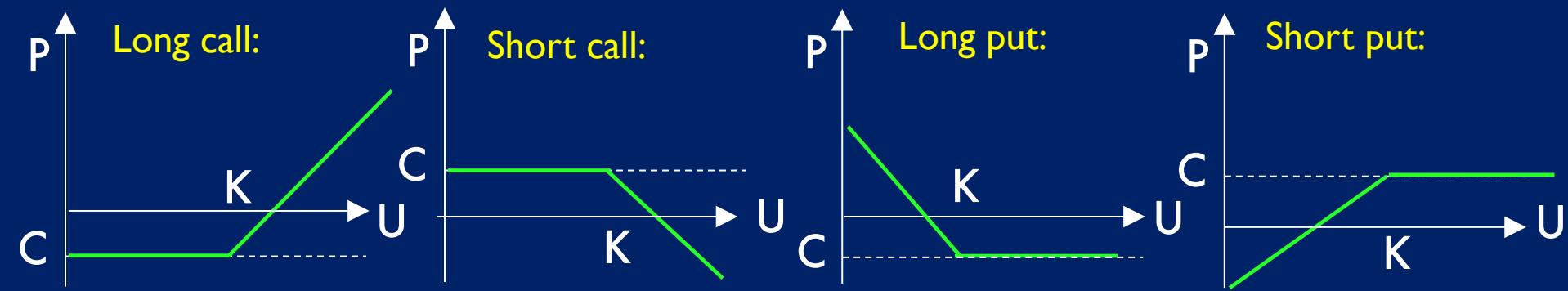
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1					<b>Long Straddley</b>	<b>Long call</b>		<b>Long Put</b>									
2																	
3						<b>Cost</b>		<b>Cost</b>									
4		<b>Tick</b>				0.10		0.10									
5		0.01						<b>Strike</b>									
6								Strike									
7		<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>									
8		0.00		0.10	1	-0.10	1	0.20									
9		0.01		0.09		-0.10		0.19									
10		0.02		0.08		-0.10		0.18									
11		0.03		0.07		-0.10		0.17									
12		0.04		0.06		-0.10		0.16									
13		0.05		0.05		-0.10		0.15									
14		0.06		0.04		-0.10		0.14									
15		0.07		0.03		-0.10		0.13									
16		0.08		0.02		-0.10		0.12									
17		0.09		0.01		-0.10		0.11									
18		0.10		0.00		-0.10		0.10									
19		0.11		-0.01		-0.10		0.09									
20		0.12		-0.02		-0.10		0.08									
21		0.13		-0.03		-0.10		0.07									
22		0.14		-0.04		-0.10		0.06									
23		0.15		-0.05		-0.10		0.05									
24		0.16		-0.06		-0.10		0.04									
25		0.17		-0.07		-0.10		0.03									
26		0.18		-0.08		-0.10		0.02									
27		0.19		-0.09		-0.10		0.01									
28		0.20		-0.10		-0.10		0.00									

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

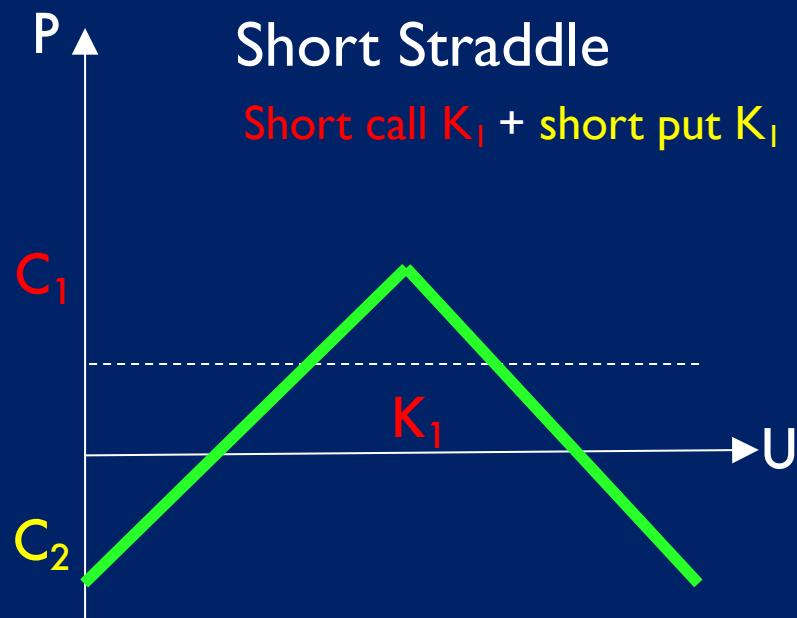
**Long Straddle**

Payoff

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Paste Calibri (Body) 12 A A Conditional Formatting Insert Cell Styles

B I U Format as Table Delete Ideas

A1 fx

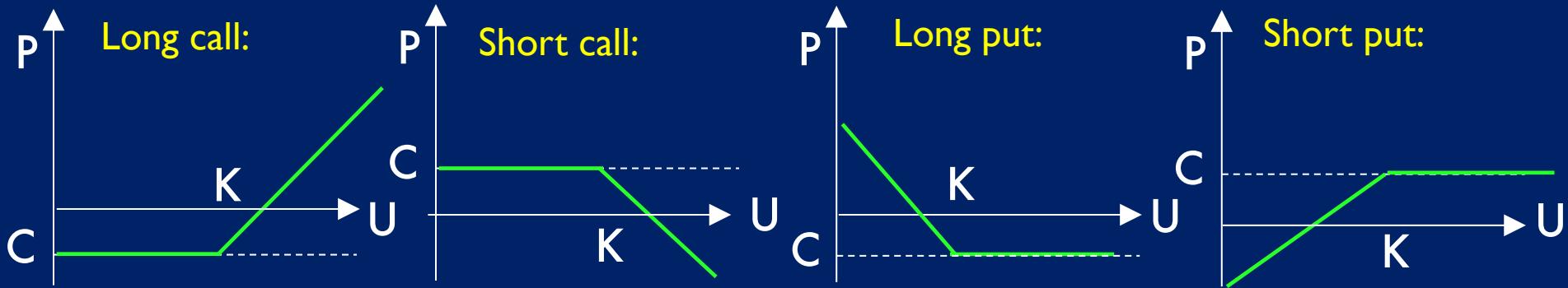
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1				<b>Short Straddle</b>		<b>Short Call 1</b>		<b>Short Put 1</b>									
2																	
3						<b>Cost</b>		<b>Cost</b>									
4						-0.10		-0.10									
5						<b>Strike</b>		<b>Strike</b>									
6						0.40		0.40									
7		<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>									
8		0.00		-0.20	1	0.10	1	-0.30									
9		0.01		-0.19		0.10		-0.29									
10		0.02		-0.18		0.10		-0.28									
11		0.03		-0.17		0.10		-0.27									
12		0.04		-0.16		0.10		-0.26									
13		0.05		-0.15		0.10		-0.25									
14		0.06		-0.14		0.10		-0.24									
15		0.07		-0.13		0.10		-0.23									
16		0.08		-0.12		0.10		-0.22									
17		0.09		-0.11		0.10		-0.21									
18		0.10		-0.10		0.10		-0.20									
19		0.11		-0.09		0.10		-0.19									
20		0.12		-0.08		0.10		-0.18									
21		0.13		-0.07		0.10		-0.17									
22		0.14		-0.06		0.10		-0.16									
23		0.15		-0.05		0.10		-0.15									
24		0.16		-0.04		0.10		-0.14									
25		0.17		-0.03		0.10		-0.13									
26		0.18		-0.02		0.10		-0.12									
27		0.19		-0.01		0.10		-0.11									
28		0.20		0.00		0.10		-0.10									

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

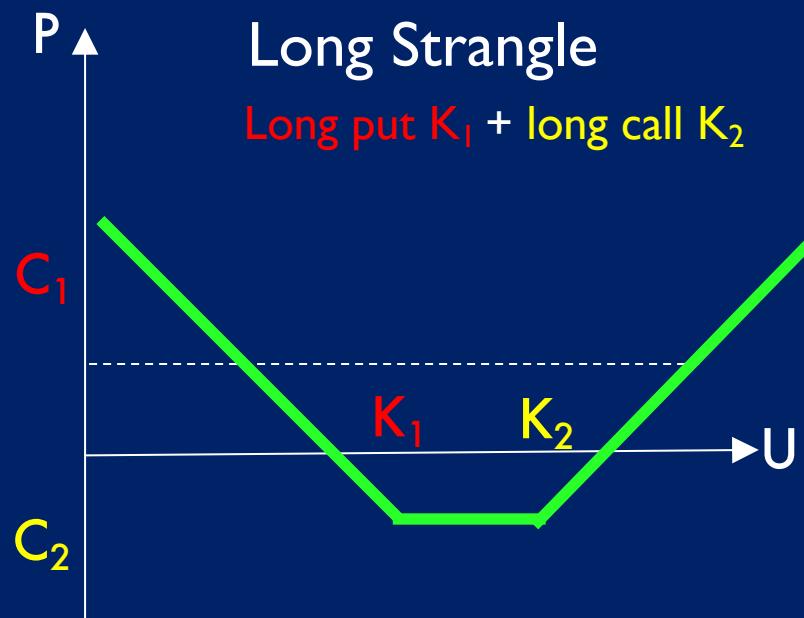
**Short Straddle**

Payoff

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



AutoSave OFF Home Insert Draw Page Layout Formulas Data Review View Share Comments

Paste Calibri (Body) 12 A<sup>^</sup> A<sub>v</sub> General Conditional Formatting Insert Cell Styles

B I U A<sup>v</sup> Format as Table Delete Format

A1 f<sub>x</sub>

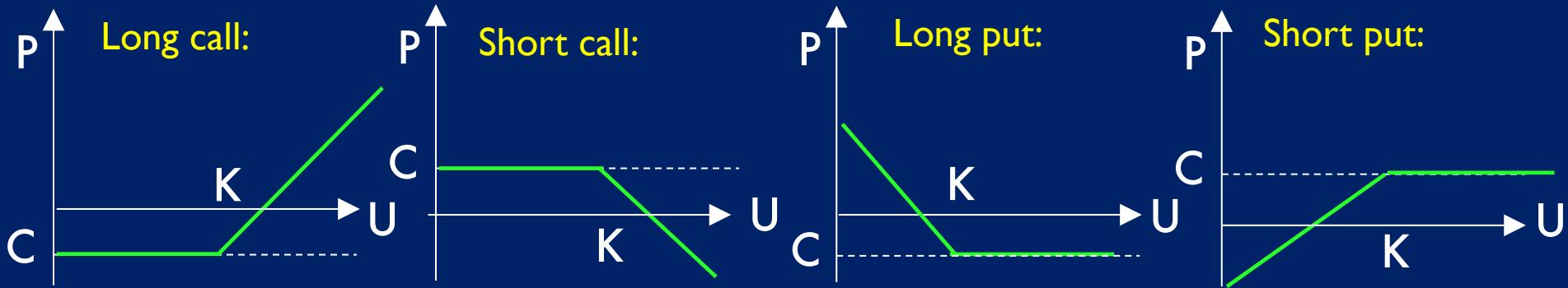
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1					<b>Long Strangle</b>	<b>Long Put 1</b>		<b>Long Call 2</b>									
2																	
3						<b>Cost</b>		<b>Cost</b>									
4		<b>Tick</b>				0.05		0.10									
5		0.01						<b>Strike</b>									
6								0.40									
7		<b>Underlying</b>		<b>Payoff</b>		<b>Payoff</b>		<b>Payoff</b>									
8		0.00		0.25	1	0.35	1	-0.10									
9		0.01		0.24		0.34		-0.10									
10		0.02		0.23		0.33		-0.10									
11		0.03		0.22		0.32		-0.10									
12		0.04		0.21		0.31		-0.10									
13		0.05		0.20		0.30		-0.10									
14		0.06		0.19		0.29		-0.10									
15		0.07		0.18		0.28		-0.10									
16		0.08		0.17		0.27		-0.10									
17		0.09		0.16		0.26		-0.10									
18		0.10		0.15		0.25		-0.10									
19		0.11		0.14		0.24		-0.10									
20		0.12		0.13		0.23		-0.10									
21		0.13		0.12		0.22		-0.10									
22		0.14		0.11		0.21		-0.10									
23		0.15		0.10		0.20		-0.10									
24		0.16		0.09		0.19		-0.10									
25		0.17		0.08		0.18		-0.10									
26		0.18		0.07		0.17		-0.10									
27		0.19		0.06		0.16		-0.10									
28		0.20		0.05		0.15		-0.10									

**Long Strangle**

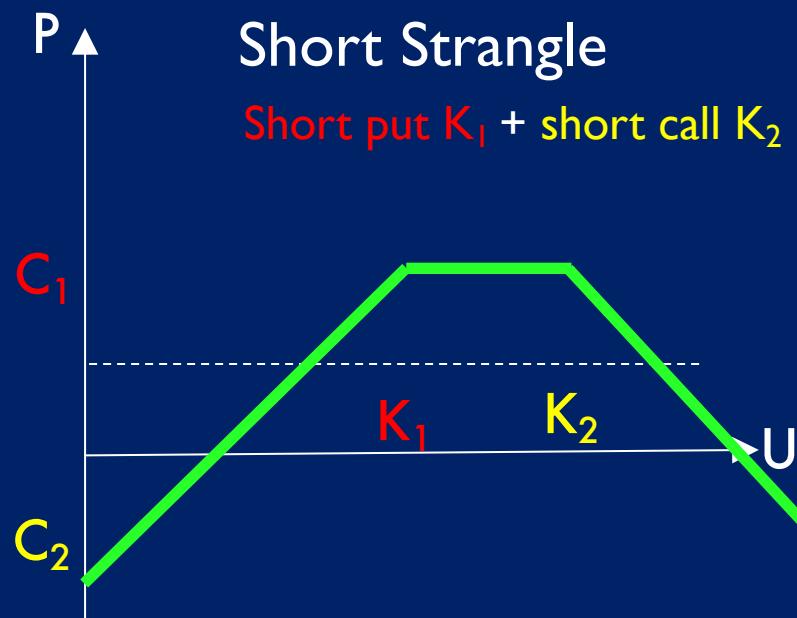
Payoff

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



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B1 f<sub>x</sub>

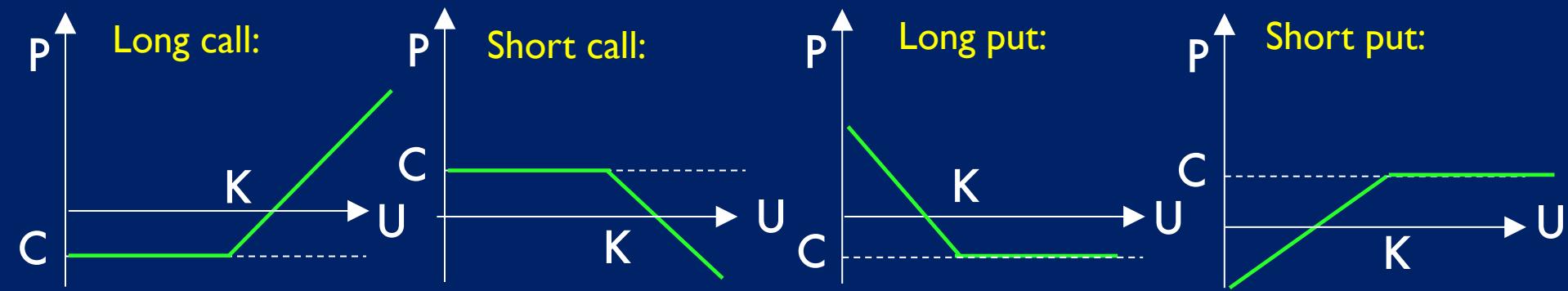
	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1			<b>Short Strangle</b>		<b>Short Call 1</b>		<b>Short Put 1</b>										
2																	
3					<b>Cost</b>		<b>Cost</b>										
4	<b>Tick</b>				-0.10		-0.10										
5	0.01					<b>Strike</b>		<b>Strike</b>									
6						0.65		0.35									
7	<b>Underlying</b>	<b>Payoff</b>			<b>Payoff</b>		<b>Payoff</b>										
8	0.00	-0.15	1		0.10	1	-0.25										
9	0.01	-0.14			0.10		-0.24										
10	0.02	-0.13			0.10		-0.23										
11	0.03	-0.12			0.10		-0.22										
12	0.04	-0.11			0.10		-0.21										
13	0.05	-0.10			0.10		-0.20										
14	0.06	-0.09			0.10		-0.19										
15	0.07	-0.08			0.10		-0.18										
16	0.08	-0.07			0.10		-0.17										
17	0.09	-0.06			0.10		-0.16										
18	0.10	-0.05			0.10		-0.15										
19	0.11	-0.04			0.10		-0.14										
20	0.12	-0.03			0.10		-0.13										
21	0.13	-0.02			0.10		-0.12										
22	0.14	-0.01			0.10		-0.11										
23	0.15	0.00			0.10		-0.10										
24	0.16	0.01			0.10		-0.09										
25	0.17	0.02			0.10		-0.08										
26	0.18	0.03			0.10		-0.07										
27	0.19	0.04			0.10		-0.06										
28	0.20	0.05			0.10		-0.05										

**Short Strangle**

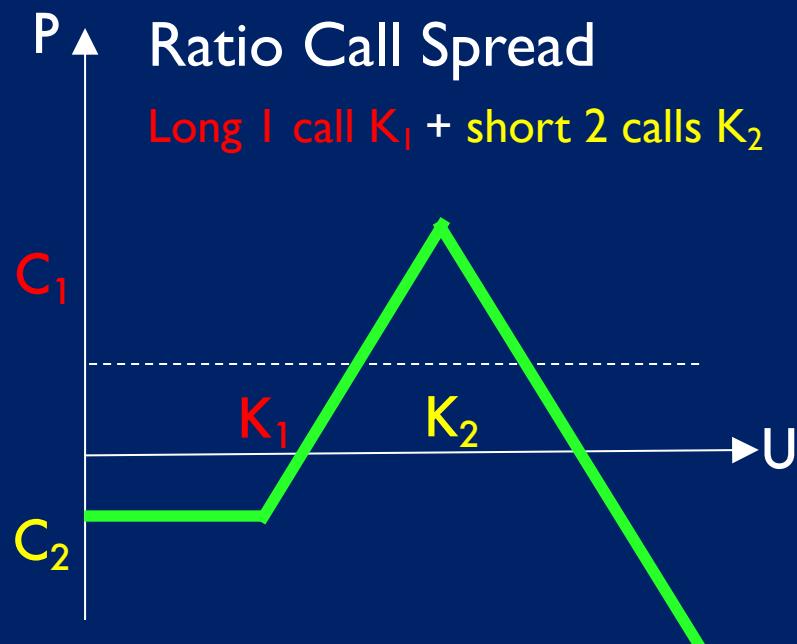
Payoff

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



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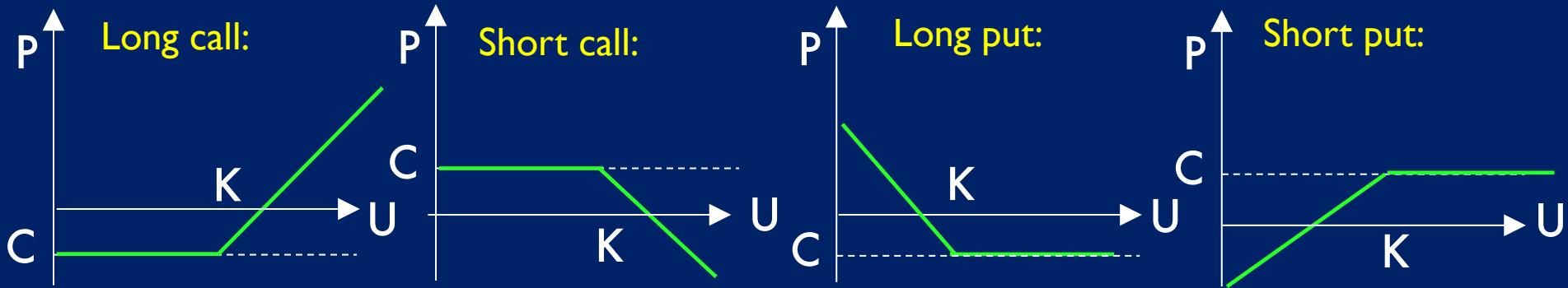
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1					<b>Ratio Put Spread</b>		<b>Short Call 1</b>		<b>Long Call 2</b>								
2																	
3							<b>Cost</b>		<b>Cost</b>								
4							-0.10		0.20								
5							<b>Strike</b>		<b>Strike</b>								
6							0.50		0.30								
7		<b>Underlying</b>		<b>Payoff</b>			<b>Payoff</b>		<b>Payoff</b>								
8		0.00		0.00	2		0.10	1	-0.20								
9		0.01		0.00			0.10		-0.20								
10		0.02		0.00			0.10		-0.20								
11		0.03		0.00			0.10		-0.20								
12		0.04		0.00			0.10		-0.20								
13		0.05		0.00			0.10		-0.20								
14		0.06		0.00			0.10		-0.20								
15		0.07		0.00			0.10		-0.20								
16		0.08		0.00			0.10		-0.20								
17		0.09		0.00			0.10		-0.20								
18		0.10		0.00			0.10		-0.20								
19		0.11		0.00			0.10		-0.20								
20		0.12		0.00			0.10		-0.20								
21		0.13		0.00			0.10		-0.20								
22		0.14		0.00			0.10		-0.20								
23		0.15		0.00			0.10		-0.20								
24		0.16		0.00			0.10		-0.20								
25		0.17		0.00			0.10		-0.20								
26		0.18		0.00			0.10		-0.20								
27		0.19		0.00			0.10		-0.20								
28		0.20		0.00			0.10		-0.20								

**Ratio Call Spread**

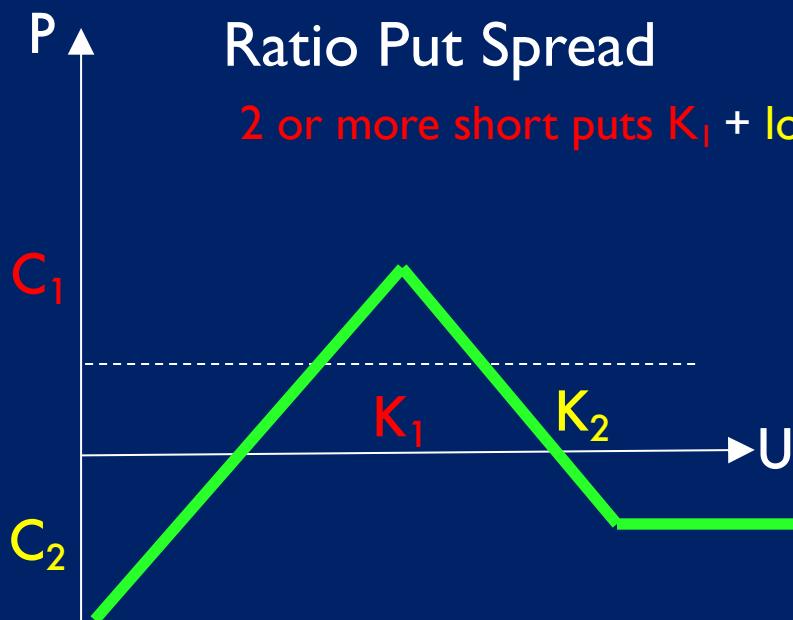
Payoff

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



## Ratio Put Spread

2 or more short puts  $K_1$  + long 1 puts  $K_2$

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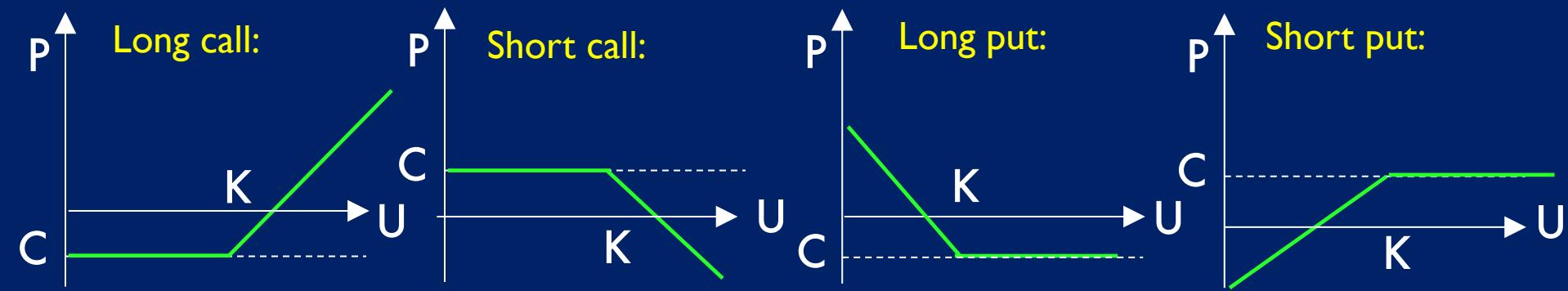
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1					<b>Ratio Put Spread</b>		<b>Short Put 1</b>		<b>Long Put 1</b>								
2																	
3							<b>Cost</b>		<b>Cost</b>								
4							-0.10		0.30								
5							<b>Strike</b>		<b>Strike</b>								
6							0.25		0.45								
7		<b>Underlying</b>		<b>Payoff</b>			<b>Payoff</b>		<b>Payoff</b>								
8		0.00		-0.15	2		-0.15	1	0.15								
9		0.01		-0.14			-0.14		0.14								
10		0.02		-0.13			-0.13		0.13								
11		0.03		-0.12			-0.12		0.12								
12		0.04		-0.11			-0.11		0.11								
13		0.05		-0.10			-0.10		0.10								
14		0.06		-0.09			-0.09		0.09								
15		0.07		-0.08			-0.08		0.08								
16		0.08		-0.07			-0.07		0.07								
17		0.09		-0.06			-0.06		0.06								
18		0.10		-0.05			-0.05		0.05								
19		0.11		-0.04			-0.04		0.04								
20		0.12		-0.03			-0.03		0.03								
21		0.13		-0.02			-0.02		0.02								
22		0.14		-0.01			-0.01		0.01								
23		0.15		0.00			0.00		0.00								
24		0.16		0.01			0.01		-0.01								
25		0.17		0.02			0.02		-0.02								
26		0.18		0.03			0.03		-0.03								
27		0.19		0.04			0.04		-0.04								
28		0.20		0.05			0.05		-0.05								

**Ratio Put Spread**

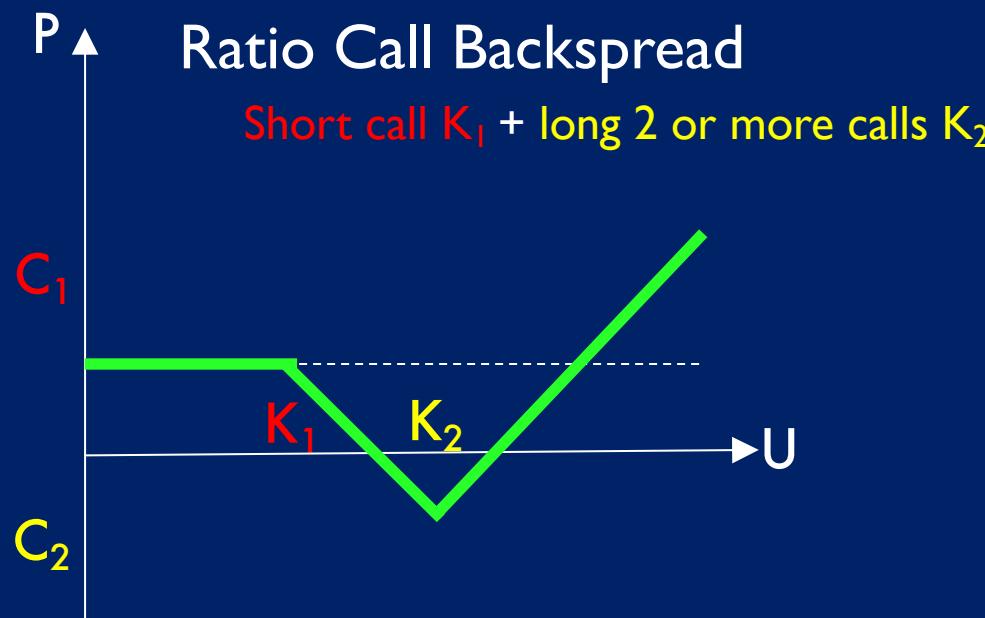
Payoff

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

# Options strategies (combinations of multiple options)



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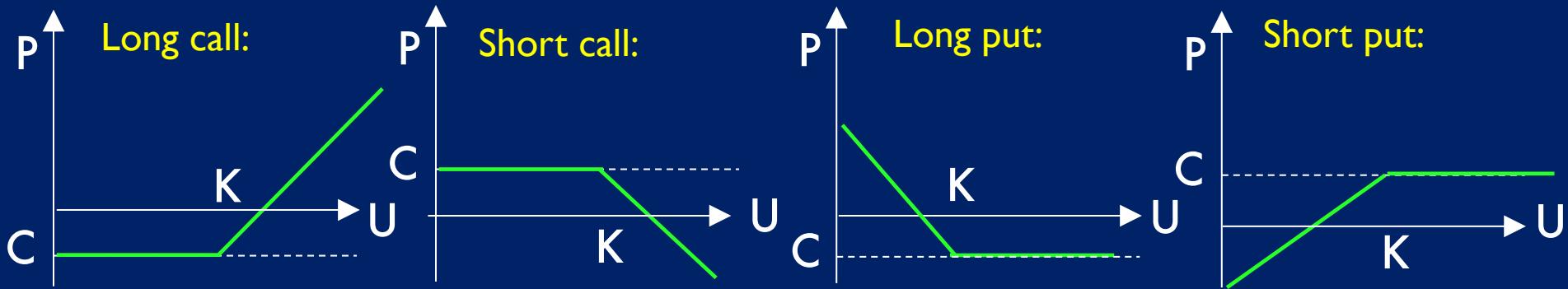
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1					<b>Ratio Call Backspread</b>												
2						<b>Short Call 1</b>		<b>Long Call 2</b>									
3						<b>Cost</b>		<b>Cost</b>									
4		<b>Tick</b>				-0.20		0.10									
5		0.01					<b>Strike</b>	<b>Strike</b>									
6						0.20		0.40									
7	<b>Underlying</b>	<b>Payoff</b>			<b>Payoff</b>		<b>Payoff</b>										
8	0.00	0.00	1		0.20	2	-0.10										
9	0.01	0.00			0.20		-0.10										
10	0.02	0.00			0.20		-0.10										
11	0.03	0.00			0.20		-0.10										
12	0.04	0.00			0.20		-0.10										
13	0.05	0.00			0.20		-0.10										
14	0.06	0.00			0.20		-0.10										
15	0.07	0.00			0.20		-0.10										
16	0.08	0.00			0.20		-0.10										
17	0.09	0.00			0.20		-0.10										
18	0.10	0.00			0.20		-0.10										
19	0.11	0.00			0.20		-0.10										
20	0.12	0.00			0.20		-0.10										
21	0.13	0.00			0.20		-0.10										
22	0.14	0.00			0.20		-0.10										
23	0.15	0.00			0.20		-0.10										
24	0.16	0.00			0.20		-0.10										
25	0.17	0.00			0.20		-0.10										
26	0.18	0.00			0.20		-0.10										
27	0.19	0.00			0.20		-0.10										
28	0.20	0.00			0.20		-0.10										

**Ratio Call Backspread**

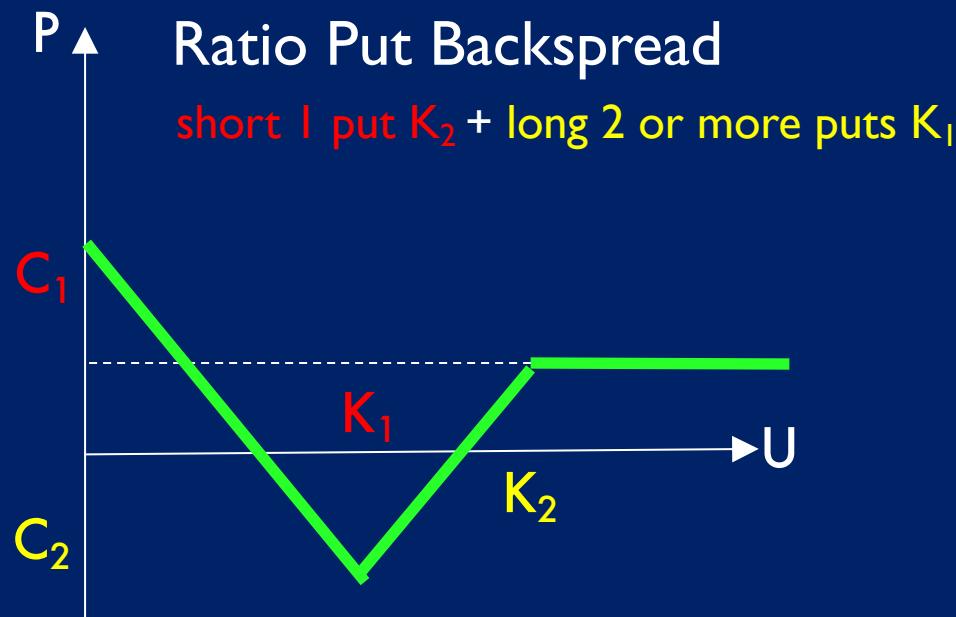
Payoff

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

# Options strategies (combinations of multiple options)



Using combinations of  
these four, can you  
structure a...



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B I U A % , <0 >0 Ideas Sensitivity

A1 Backspread Short Put 1 Long Put 1 Ratio Put Backspread

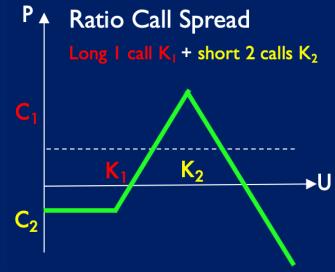
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
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26																	
27																	
28																	
	0.21	-0.01		0.01		0.01		0.01									

L-Butterfly S-Butterfly L-Straddle S-Straddle L-Strangle S-Strangle Ratio-C-Sprd Ratio-P-Sprd Ratio-C-Bksprd Ratio-P-Bksprd +

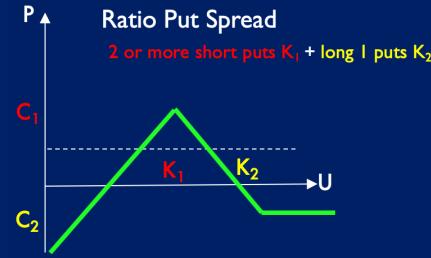
Ratio Put Backspread

Payoff

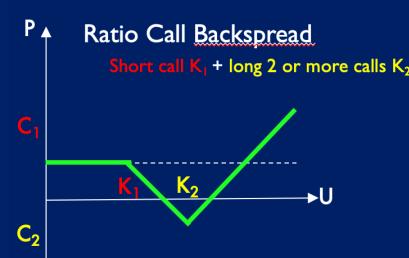
# When you'd use those last four



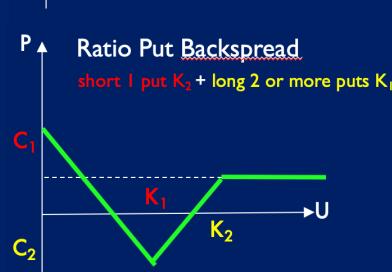
Ratio call spread: you'd initiate when  $U < K_1$  (OTM) and you're confident that  $U$  will **rise** to  $\sim K_2$  but not go beyond that



Ratio put spread: you'd initiate when  $U > K_2$  (OTM) and you're confident that  $U$  will **fall** to  $\sim K_1$  but not go beyond that



Ratio call backspread: you'd initiate when  $U = \sim K_2$  (OTM) and you're confident that  $U$  will shift significantly, with **increase** more likely



Ratio put backspread: you'd initiate when  $U = \sim K_1$  (OTM) and you're confident that  $U$  will shift significantly, with **decrease** more likely

But...

**Isn't this just a sophisticated form of gambling?**

“Sell me immediate a July ratio call  
backspread, short spot minus \$2  
with 3 long at spot plus \$5”

Isn’t this just a sophisticated form of gambling?

“Sell me immediate a July ratio call  
backspread, short spot minus \$2  
with 3 long at spot plus \$5”

Isn’t this just a sophisticated form of gambling?

“I bet you that either the price of  
XYZ will go up by more than \$5  
in the next three months, or it’ll  
go down by more than \$2”

# Betting Exchanges

- Betting exchanges are electronic marketplaces where gambler interact to find someone to take the opposite side of their bet: they “buy” (“back”) or “sell” (“lay”) the outcome of an event.
- Traditional bookmaker: the customer backs the event, the bookie lays.
- Betting exchange:
  - All customers can either back or lay (the exchange operator takes neither side)
  - Buys and sells are displayed in a manner similar to Limit Order Book (LOB)
  - Customers can trade bets “in play” while an event is happening, until final outcome
- Traditional bookmakers have argued that allowing anonymous customers to lay events encourages corruption: it’s easier to throw a race than it is to win it
  - E.g., lay horse H in a certain race, and then drug the horse so that it loses.
- Betting exchanges are another internet-economy success story
- In particular...

# Betfair

- Launched in June 2000 by Andrew Black & Edward Wray
- Valued in 2006 at £1.5bn
- World's largest betting exchange
- UK's largest online betting company
- Acquired various overseas gambling/bookmaking companies + media providers
- Relocated to Gibraltar in 2011: reduced tax payments, different regulator
- Claims to offer far better odds than traditional bookmakers, but can impose additional fees on super-successful customers
- Feb 2016 merged with Paddy Power (traditional high-street & phone bookie)
  - Now called *Flutter Entertainment*

- Launched in June 2000 by Andrew Bla...  
• Valued in 2006 at £1.5bn  
• W...  
• W...

INDEPENDENT

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## Betting companies top the list of donations to MPs

Ladbrokes Coral appears 15 times in the most recent list of donations to MPs

Tom Peck | @tompeck | Saturday 2 September 2017 10:15 | 35 comments



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## Fixed-odds betting terminals

• This article is more than 1 year old

# Sports minister resigns over delay to gambling curb

Tracey Crouch launched review that cut fixed-odds betting terminal stakes from £100 maximum to £2



▲ Tracey Crouch launched the review of fixed-odds betting machines Photograph: Colorsport/REX/Shutterstock

**Rob Davies**

• @ByRobDavies

Thu 1 Nov 2018 18.15 GMT



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Top

▲ Tracey Crouch laun

## Rob Davies

✉ @ByRobDavies

Thu 1 Nov 2018 18



### Fixed-odds betting terminals

This article is more than 1 year old

## Sports minister backs gambling curbs

Tracey Crouch launched a consultation on fixed-odds terminal stakes from £1



Paddy Power Betfair + Add to myFT

# Paddy Power Betfair backs curbs on fixed-odds betting machines

First big bookmaker to urge restraint on terminals known as 'crack cocaine' of gambling

People close to Paddy Power Betfair's thinking said it would not challenge a stakes cut to £2 © PA

Murad Ahmed, Leisure Correspondent SEPTEMBER 27, 2017

Paddy Power Betfair has broken ranks with the rest of the UK gaming industry by becoming the first big bookmaker to recommend heavy curbs on betting machines that campaigners call the "crack cocaine of gambling".

Breon Corcoran, chief executive of the FTSE 100 bookmaker, said the debate around fixed-odds betting terminals that offer gamblers a quick fix in shops has become "so toxic" that it has become a "real societal issue".

# Betfair book for horse racing

Sportsbook Exchange Casino Live Casino Poker Exchange Games Arcade Vegas Slots Macau Bingo

Home In-Play Cash Out Football Horse Racing Greyhound Racing Cricket Tennis Golf P

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16:15 Exeter Tue 6 Nov | 2m2f Hcap Hrd

Live Stream Radio Tote Form & Results Multiples

Going In-Play Rules BSP [?] Matched: GBP 15,245 Refresh

Timeform

18 selections

			Back all	Lay all
11	Double Court Sam Twiston-Davies	4.9 £35	5 £95	5.1 £21
2	Cahill Gavin Sheehan	5.9 £20	6 £97	6.2 £29
10	Big Picture Tom Cannon	8.2 £10	8.4 £26	9 £25
14	Scorpion Star Alexander Thorne	15.5 £25	16 £25	16.5 £20
4	Norse Light David Bass	12 £24	13 £14	13.5 £10
8	All Hands On Deck Noel Fehily	10 £10	11 £36	13 £14
5	Misty Bloom Adam Wedge	11 £57	12.5 £16	13.5 £11

# Betfair book for horse racing

18 selections			Back all		Lay all		
▼	11		<b>Double Court</b> Sam Twiston-Davies	<b>4.9</b> £35	<b>5</b> £95	<b>5.1</b> £21	<b>5.3</b> £19
▼	2		<b>Cahill</b> Gavin Sheehan	<b>5.9</b> £20	<b>6</b> £97	<b>6.2</b> £29	<b>7.2</b> £15
▼	10		<b>Big Picture</b> Tom Cannon	<b>8.2</b> £10	<b>8.4</b> £26	<b>9</b> £25	<b>9.6</b> £40
▼	14		<b>Scorpion Star</b> Alexander Thorne	<b>15.5</b> £25	<b>16</b> £25	<b>16.5</b> £20	<b>17</b> £16
▼	4		<b>Norse Light</b> David Bass	<b>12</b> £24	<b>13</b> £14	<b>13.5</b> £10	<b>14.5</b> £47
▼	8		<b>All Hands On Deck</b> Noel Fehily	<b>10</b> £10	<b>11</b> £36	<b>13</b> £14	<b>14</b> £12
▼	5		<b>Misty Bloom</b> Adam Wedge	<b>11</b> £57	<b>12.5</b> £16	<b>13.5</b> £11	<b>16</b> £16
▼	9		<b>Getadollar</b>	<b>15.5</b>	<b>18.5</b>	<b>22</b>	<b>32</b>
▼	6						<b>85</b>
▼	7						<b>110</b>

# Betfair book for horse racing

When you BACK you offer the STAKE to a LAYER.

If the event doesn't happen, you lose the stake.

If the event does happen, you get  
STAKE\*BACK\_ODDS

(so your PROFIT is STAKE\*(BACK\_ODDS-1))

18 selections		Back all			Lay all		
▼	11		<b>Double Court</b> Sam Twiston-Davies	<b>4.9</b> £35	<b>5</b> £95	<b>5.1</b> £21	<b>5.3</b> £19
▼	2		<b>Cahill</b> Gavin Sheehan	<b>5.9</b> £20	<b>6</b> £97	<b>6.2</b> £29	<b>7.2</b> £15
▼	10		<b>Big Picture</b> Tom Cannon	<b>8.2</b> £10	<b>8.4</b> £26	<b>9</b> £25	<b>9.6</b> £40
▼	14		<b>Scorpion Star</b> Alexander Thorne	<b>15.5</b> £25	<b>16</b> £25	<b>16.5</b> £20	<b>17</b> £16
▼	4		<b>Norse Light</b> David Bass	<b>12</b> £24	<b>13</b> £14	<b>13.5</b> £10	<b>14.5</b> £47
▼	8		<b>All Hands On Deck</b> Noel Fehily	<b>10</b> £10	<b>11</b> £36	<b>13</b> £14	<b>14</b> £12
▼	5		<b>Misty Bloom</b> Adam Wedge	<b>11</b> £57	<b>12.5</b> £16	<b>13.5</b> £11	<b>16</b> £16
▼	9		<b>Getadollar</b>	<b>15.5</b>	<b>18.5</b>	<b>22</b>	<b>32</b>
▼	6						<b>85</b>
▼	7						<b>110</b>

# Betfair book for horse racing

When you LAY, you take the STAKE from a BACKer.

If the event doesn't happen, you keep the stake.

If the event does happen, you pay a  
**LIABILITY=STAKE\*(LAY\_ODDS-I)**

18 selections		Back all		Lay all						
		4.9 £35	5 £95	5.1 £21	5.3 £19	5.4 £20	5.6 £19			
▼	11			<b>Double Court</b> Sam Twiston-Davies	<b>5.9</b> £20	<b>6</b> £97	<b>6.2</b> £29	<b>7.2</b> £15	<b>7.4</b> £19	<b>8</b> £18
▼	2			<b>Cahill</b> Gavin Sheehan	<b>8.2</b> £10	<b>8.4</b> £26	<b>9</b> £25	<b>9.6</b> £40	<b>10.5</b> £12	<b>11</b> £45
▼	10			<b>Big Picture</b> Tom Cannon	<b>15.5</b> £25	<b>16</b> £25	<b>16.5</b> £20	<b>17</b> £16	<b>19</b> £17	<b>21</b> £16
▼	14			<b>Scorpion Star</b> Alexander Thorne	<b>12</b> £24	<b>13</b> £14	<b>13.5</b> £10	<b>14.5</b> £47	<b>15.5</b> £12	<b>16</b> £14
▼	4			<b>Norse Light</b> David Bass	<b>10</b> £10	<b>11</b> £36	<b>13</b> £14	<b>14</b> £12	<b>14.5</b> £13	<b>15</b> £18
▼	8			<b>All Hands On Deck</b> Noel Fehily	<b>11</b> £57	<b>12.5</b> £16	<b>13.5</b> £11	<b>16</b> £16	<b>18</b> £18	<b>19</b> £18
▼	5			<b>Misty Bloom</b> Adam Wedge	<b>15.5</b>	<b>18.5</b>	<b>22</b>	<b>32</b>	<b>85</b>	<b>110</b>
▼	9			<b>Getadollar</b>						

# Betfair book for football/soccer

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Football

International

UEFA Champions League

Juventus v Man Utd

Match Odds

Correct Score

Over/Under 0.5 Goals

Over/Under 1.5 Goals

Over/Under 2.5 Goals

Over/Under 3.5 Goals

Over/Under 4.5 Goals

Over/Under 5.5 Goals

Over/Under 6.5 Goals

Over/Under 7.5 Goals

Over/Under 8.5 Goals

Asian Handicap

Next Horse Race

BSP Multiples

Sport on TV

Where is the money?

★ Juventus v Man Utd  Live Stream

Wed 7 Nov, 20:00 Head to Head Multiples

### Match Odds

Going In-Play  i Rules  BSP [?]

Matched: GBP 56,164 Refresh

	Back all		Lay all	
 Juventus	1.63 £3313	1.64 £8980	1.65 £1414	1.66 £539
 Man Utd	6.2 £480	6.4 £282	6.6 £491	6.8 £45
 The Draw	3.9 £1105	3.95 £574	4 £1234	4.1 £1421
	1.67 £610	1.68 £2563	4.2 £1870	4.3 £1562

### Other Markets

Popular Goals Handicap More ▾

	Back	Lay
 Juventus +1	1.17 £219	1.18 £2747
 Man Utd -1	17.5 £83	38 £102
 Draw	8 £399	11.5 £23

Matched: GBP 758  i Rules

Matched: GBP 288  i Rules

	Back	Lay
 Under 2.5 Goals	1.91 £181	1.94 £408
 Over 2.5 Goals	2.06 £548	2.1 £330

[View full market >](#)

# Betfair book for US mid-term elections

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Sweden - General Election  
UK - Brexit  
UK - Cabinet Specials  
UK - Mayoral Elections  
UK - Next General Election  
UK - Northern Ireland Next Assembly Elections  
Next Horse Race

★ USA - Congressional Elections - Hous... 

In-Play

Senate Majority House Of Rep... More ▾

In-Play  Rules Matched: GBP 2,714,408 Refresh

3 selections Back all Lay all

 Democrat Majority	1.36 £11726	1.37 £4918	1.38 £4192	1.39 £4420	1.4 £10050	1.41 £5654
 Republican Majority	3.5 £2365	3.55 £3963	3.65 £1683	3.7 £116	3.8 £1129	3.85 £4017
 No Majority	70 £27	85 £17	100 £20	120 £20	130 £10	140 £20

**Politics Betting Explained**

Bet on Politics, your way. Politics on the Betfair Exchange lets you set the odds yourself on over 22 Politics events. Bet on top markets like: **USA - Congressional Elections**; **USA - Trump Specials**; **2020 US Presidential Election**. Choose from over 18 Politics competitions, and place a Politics bet, either for an outcome (to Back) or against it (to Lay). Here on the Exchange, you can back or lay bets on markets like: "**USA - Congressional Elections - House Of Representatives Majority**"; "**USA - Trump Specials - Trump Exit Date**"; "**USA - Trump Specials - Trump To Leave Before End of 1st Term**".

# Betting exchanges as predictors

If enough people are risking their own real money by backing/laying outcomes of real-world events, is that a useful predictive signal?

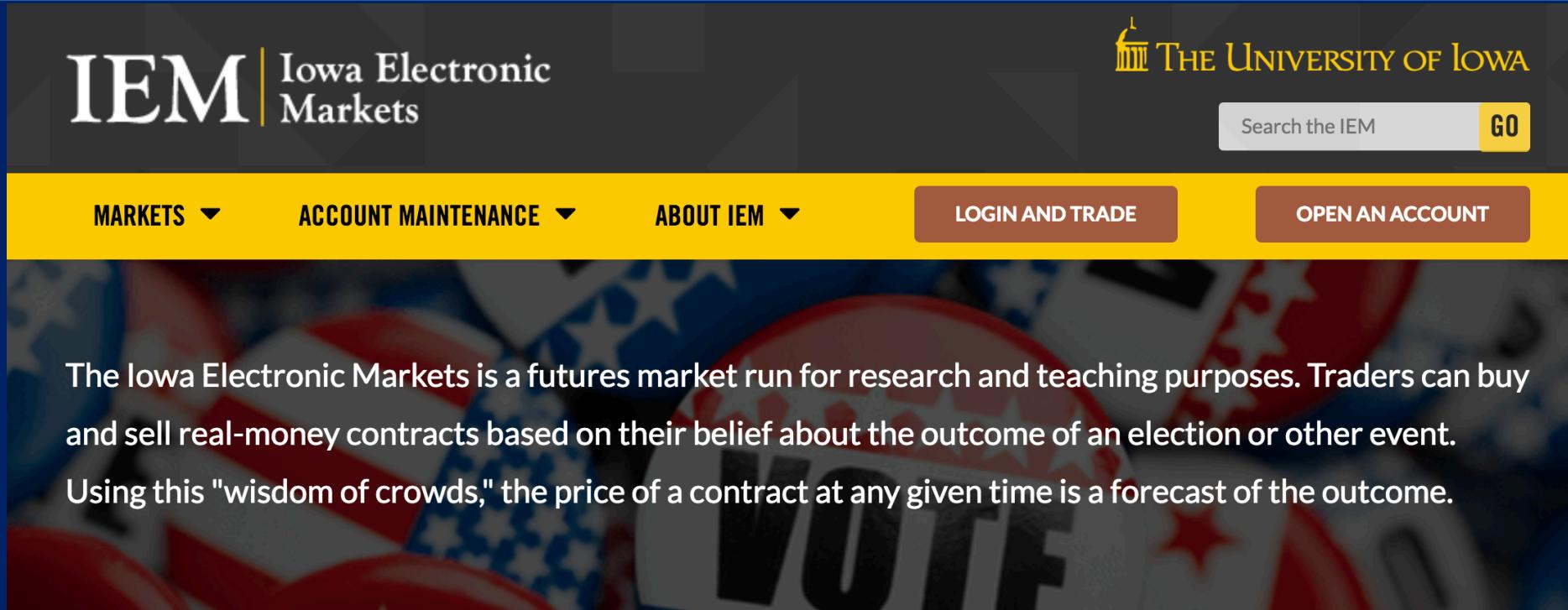
NB assuming the gamblers are rational (as opposed to just hopeful), they're betting on what they think is the most likely outcome (as opposed to what they want to happen)

– the money on the book might be a good indicator of what is likely to happen...

...i.e., the state of the betting-exchange market is a **prediction**

So why not set up dedicated **prediction markets**?

# Prediction Markets: IEM @ Uni of Iowa (more later)



The Iowa Electronic Markets is a futures market run for research and teaching purposes. Traders can buy and sell real-money contracts based on their belief about the outcome of an election or other event. Using this "wisdom of crowds," the price of a contract at any given time is a forecast of the outcome.

## 2018 HOUSE/SENATE CONTROL MARKETS

This is a real-money futures market where contract payoffs will be determined by the outcomes of the 2018 U.S. Congressional elections.

**IEM | Iowa Electronic Markets**

**THE UNIVERSITY OF IOWA**

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# “Prospectus” summary for House18 contingent security

## Market Information: House18

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| [Assets](#) | [Bundles](#) | [Prospectus](#) | [Price History](#) | [Graph](#) | [Other Information](#) |

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**\*\* You must read the prospectus before trading \*\***

### Market:

**Name:** House18  
**Description:** 2018 U.S. House Control Winner-Takes-All Market  
**Open Date:** 12/20/16 11:59 AM  
**Close Date:**

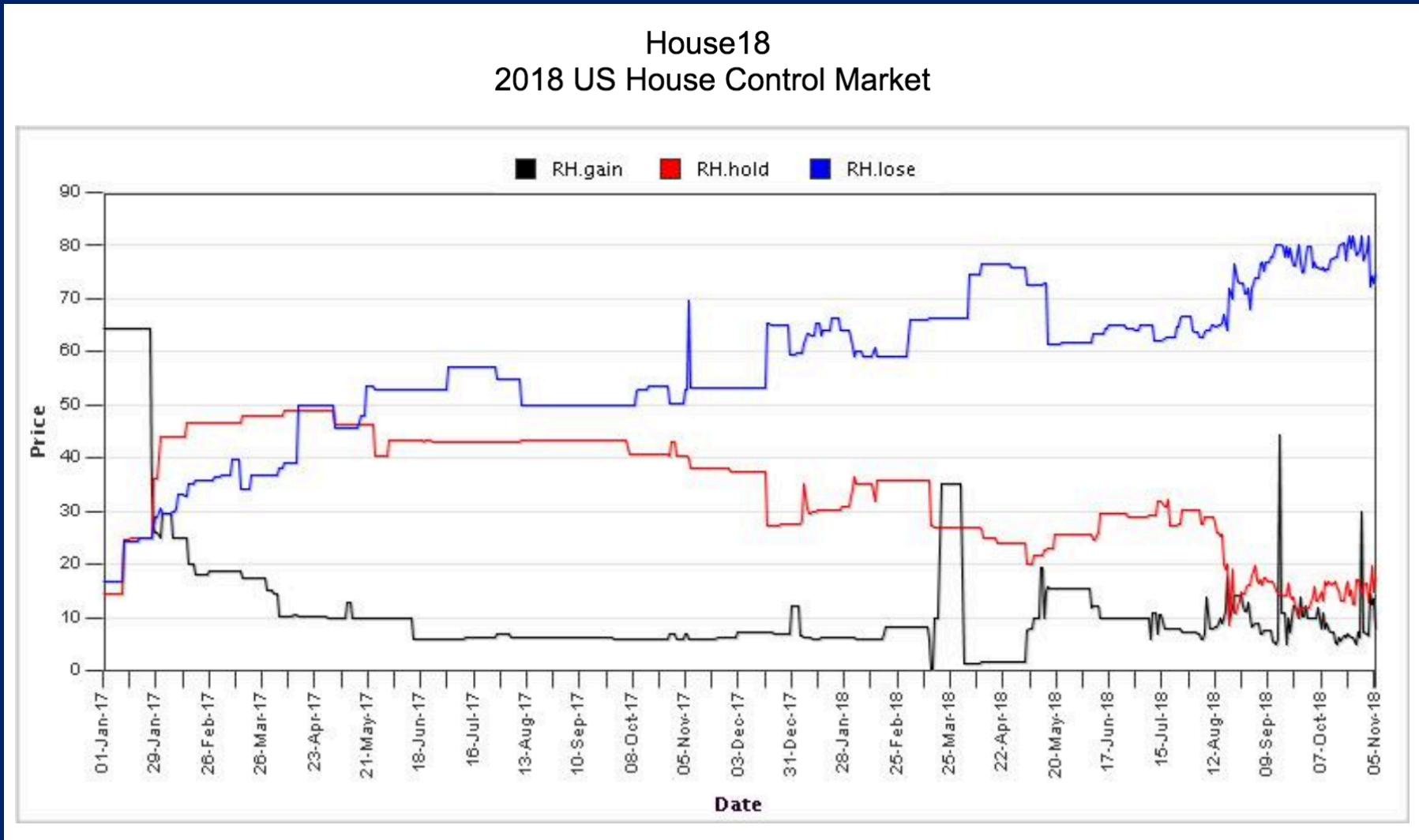
### Assets:

Name	Description
RH.gain18	\$1 if the Republicans have more than 241 House seats after the 2018 election; \$0 otherwise
RH.hold18	\$1 if Republicans have more than 217 but no more than 241 House seats after the 2018 election; \$0 otherwise
RH.lose18	\$1 if Republicans have 217 or fewer House seats after the 2018 election; \$0 otherwise

**Bundles:** (To buy or sell bundles, select the bundle from the -Market Orders- list in your trading console. You may need to use the slide bar on the select box to see the bundle names.)

Name	BundleType	Price	Net Issued	Description
House18	Fixed Price	1.000	0	One of each contract in the House18 market
House18	Market Price			One of each contract in the House18 market

# Prediction Markets: IEM US mid-terms 2018 (today!)



# Prediction Markets (more in later lecture)

So far, I can't find a prediction market for UK politics

# Prediction Markets (more in later lecture)

The screenshot shows a news article from CBS News Moneywatch. At the top, there's a navigation bar with the University of Iowa logo, "THE UNIVERSITY OF IOWA", and "Tippie College of Business". Below the navigation bar, a yellow header bar contains three links: "Future Undergraduates", "Future Graduate Students", and "Current Students". The main title of the article is "Markets predict Clinton will beat Trump", displayed prominently in a large, bold, italicized font. Below the title, a breadcrumb navigation shows "Home → News". The main content of the article features a photograph of the Iowa State Capitol building, with its distinctive gold dome and flag flying, set against a clear blue sky. In the foreground, there is a field of yellow flowers. At the bottom left of the image, there is a caption with the date "Tuesday, November 8, 2016", the source "CBSNews, Moneywatch", and the author's name "Larry Light".

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**Markets predict Clinton will beat Trump**

Home → News

Tuesday, November 8, 2016  
CBSNews, Moneywatch  
Larry Light