Traded Options: Selling Time

Using written options to complement an equity portfolio

Richard Sutcliffe

Traders & Investors Club meeting,
25th January 2011

Who am I?

- Father of 8 month old

Who am I?

- Classical Recording Producer

Who am I?

- I am a novice trader
- I am an experienced investor
- Started investing in 1998
- Had great success then great failure during the 'dot-com' bubble
- Didn't trade again until 2008
- 200+ option trades, over 80% of them profitable

What do I trade?

- UK equities
- UK equity traded options
- Occasional CFDs or spreadbets

What am I going to tell you?

- Nothing revolutionary
- Nothing too academic
- No techniques that are guaranteed to succeed
- I'm hopefully going to demonstrate how options can be used in a low-risk way to complement an equity portfolio

How are options perceived?

- Complicated
  - ➔ So are all other derivatives, but that doesn't stop you learning the principles very quickly
- Risky
  - ➔ No more so than other leveraged derivatives
  - ➔ Used in certain ways, options can even reduce risk
- Not available to retail investors
  - ➔ Yes they are

What are traded options?

- <u>Call</u> options give the holder the right, but not the obligation, to buy a fixed number of shares of the underlying stock at a fixed price within a fixed period of time.

Calls usually increase in value if the underlying increases

- <u>Put</u> options give the holder the right, but not the obligation, to sell a fixed number of shares of the underlying stock at a fixed price within a fixed period of time.

Puts usually increase in value if the underlying falls

What can I trade options on?

- Options on 92 UK equities are traded on LIFFE; almost all these companies are in the FTSE 100
- Options on thousands of US equities and other international equities can be traded on other exchanges
- In the UK, the normal contract size for each equity option is 1000 shares. In the US, the contract size is 100 shares. May change after a rights issue
- Can also trade options on indices, commodities, currencies, etc.

How are options priced?

1. Price Of The Underlying
2. Option Strike Price
3. Time To Expiration
4. Future Volatility / Implied Volatility
5. (Interest Rate)
6. (Dividends)

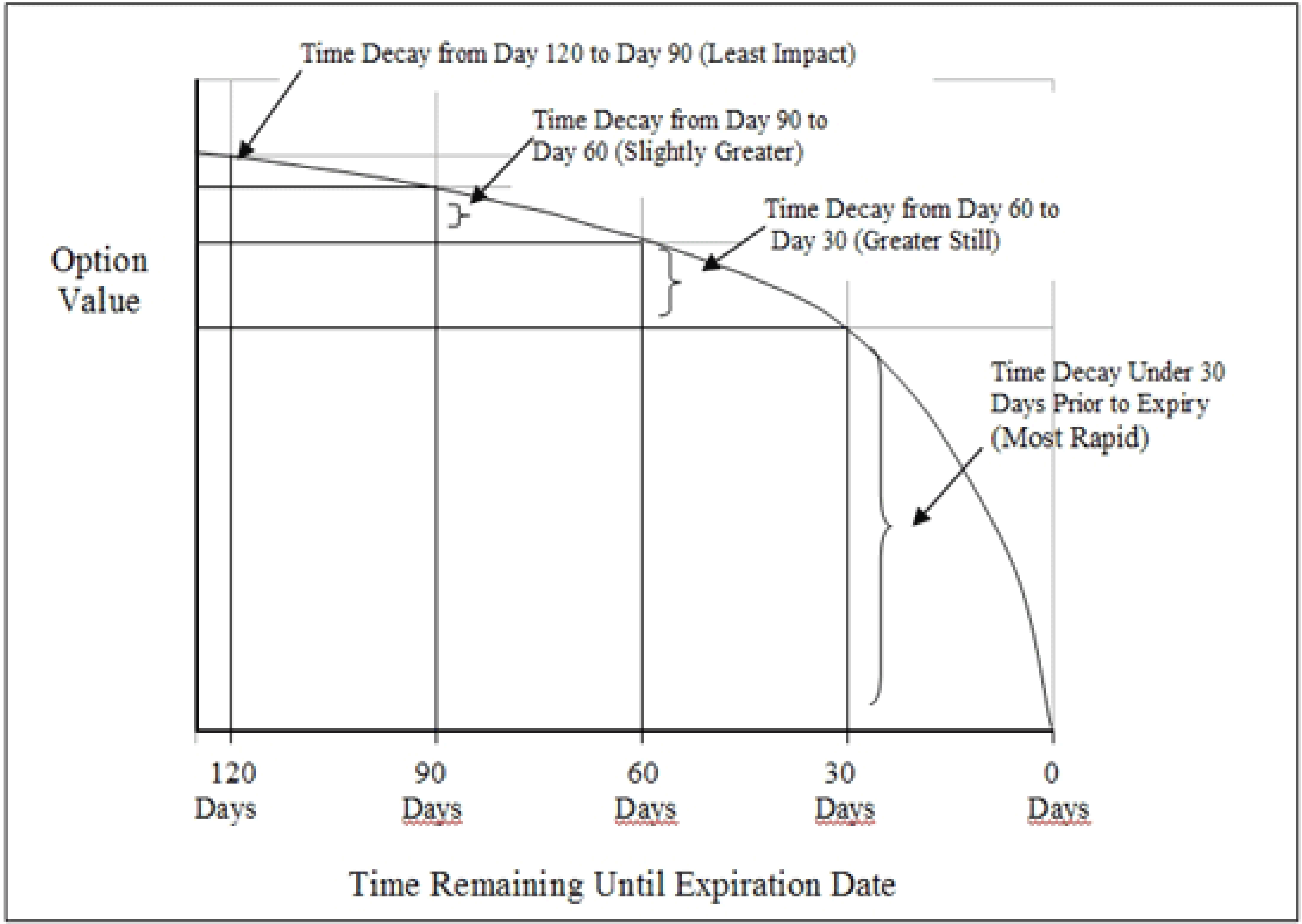
Intrinsic value

- The amount of tangible value in an option
- For example, if the current share price is £1.21, a call option which entitles the holder to buy shares at £1.00 has 21p of intrinsic value
- If the strike price of a call is less than the current share price, the option has intrinsic value equal to the difference between the two
- Conversely, if the strike price of a put is more than the current share price, the option has intrinsic value equal to the difference between the two

Time value

- All options have expiry dates, so after that date they will be worthless
- They are wasting assets
- The time value of an option is what is left after subtracting the intrinsic value from the option value
- The closer you get to expiry, the less time value remains in an option, until it reaches zero on expiry day
- Time value changes as the difference between the underlying and the strike price changes

Time decay graph



Expiry dates

- UK options always expire on the 3rd Friday of a month
- Different equities may have different expiry months to choose from
- Equities which are popular for option trading usually have the closest 3 months, plus the next March, June, September and December, plus long expiry June and December options for the next 2 years
- Less popular options may only have the nearest 3 out of March, June, Sept and Dec

ITM, ATM, OTM

- In the money – option has intrinsic value as well as time value
- At the money – strike price is equal to the share price. Option has no intrinsic value but has maximum time value
- Out of the money – option has no intrinsic value, only time value

- Note that for a particular strike price, if calls are ITM then puts will be OTM, and vice-versa

Exercise / Assignment

- UK Equity Options are American in type: holders may exercise their rights at any time until expiry
- Index Options are European in type: holders may not exercise their rights until expiry
- If an option holder exercises his rights, then a writer of the same option is randomly assigned
- Options holders don't often exercise their rights – more profitable to close the option and then trade the shares on the open market
- ITM options at expiry will be assigned

An option chain from www.liffe-data.com

Logout

Liffe
NYSE Euronext

Equity Prices Service

Home | Equity options | Index options | Index futures | Other data services | Historical data

EN FR NL

BP PLC - STND OPT

Prices
Chart

Date: 25-Jan-2011
Underlying share price: ***499.5***
(all data is delayed by 15 minutes and shown in London Time)

Expiry Month: All
Max Number of strikes: 25

It is advisable to check corporate actions on Individual Equity Options before using the prices page for information.
To view the full day's strikes, please press "Refresh" after 08:00 London Time.

Cumulative Volume (all deliveries): **882**	Open Interest (all deliveries) [2]: **235840**

Expiry : 18Feb11

Calls											Puts									
Settle[1]	OI[2]	Total Daily Vol[3]	Vol[4]	Last Trade at	Last Trade	Bid	Offer	AQ Bid	AQ Offer	Strike	AQ Bid	AQ Offer	Bid	Offer	Last Trade	Last Trade at	Vol[4]	Total Daily Vol[3]	OI[2]	Settle[1]
117.25	123	-	-	-	-	**115.5**	**123.5**	113.601	125.601	380	0	1.097	**0**	**1.5**	-	-	-	-	126	0.25
97.25	-	-	-	-	-	**96.25**	**103**	94.375	104.875	400	0	1.281	**0**	**1.5**	-	-	-	-	45	0.25
77.25	38	-	-	-	-	**76.5**	**83**	74.5	85	420	0	1.489	**0**	**1.75**	-	-	-	-	162	0.5
67.5	52	-	-	-	-	**66.25**	**73**	64.375	74.875	430	0	1.629	**0**	**2**	-	-	-	-	59	0.75
57.5	213	15	15	08:51:21	**60.5**	**57**	**62.75**	55.375	64.375	440	0	1.862	**0**	**2.25**	-	-	-	-	116	1
48.5	30	-	-	-	-	**47.75**	**53.25**	46	55	450	0.101	2.101	**0.75**	**2.5**	-	-	-	-	553	1.5
39.5	760	-	-	-	-	**38.5**	**43.75**	36.625	45.625	460	0.975	2.975	**1.25**	**3**	-	-	-	-	202	2.5
31	182	-	-	-	-	**29.75**	**34.5**	27.625	36.625	470	1.019	5.519	**2.5**	**4.25**	-	-	-	-	552	4
23.25	788	-	-	-	-	**23.25**	**25.5**	20.625	28.125	480	3.593	8.093	**4.75**	**6.25**	**5.25**	12:54:03	35	300	1525	6.75
16.5	1705	200	50	10:52:14	**16**	**16.5**	**18.5**	13.75	21.25	490	6.766	11.266	**8.25**	**10**	-	-	-	-	3780	10.25

Expiry : 18Feb11

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Settle[1]	OI[2]	Total Daily Vol[3]	Vol[4]	Last Trade at	Last Trade	Bid	Offer	AQ Bid	AQ Offer	Strike	AQ Bid	AQ Offer	Bid	Offer	Last Trade	Last Trade at	Vol[4]	Total Daily Vol[3]	OI[2]	Settle[1]
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97.25	-	-	-	-	-	96.25	103	94.375	104.875	400	0	1.281	0	1.5	-	-	-	-	45	0.25
77.25	38	-	-	-	-	76.5	83	74.5	85	420	0	1.489	0	1.75	-	-	-	-	162	0.5
67.5	52	-	-	-	-	66.25	73	64.375	74.875	430	0	1.629	0	2	-	-	-	-	59	0.75
57.5	213	15	15	08:51:21	60.5	57	62.75	55.375	64.375	440	0	1.862	0	2.25	-	-	-	-	116	1
48.5	30	-	-	-	-	47.75	53.25	46	55	450	0.101	2.101	0.75	2.5	-	-	-	-	553	1.5
39.5	760	-	-	-	-	38.5	43.75	36.625	45.625	460	0.975	2.975	1.25	3	-	-	-	-	202	2.5
31	182	-	-	-	-	29.75	34.5	27.625	36.625	470	1.019	5.519	2.5	4.25	-	-	-	-	552	4
23.25	788	-	-	-	-	23.25	25.5	20.625	28.125	480	3.593	8.093	4.75	6.25	5.25	12:54:03	35	300	1525	6.75
16.5	1705	200	50	10:52:14	16	16.5	18.5	13.75	21.25	490	6.766	11.266	8.25	10	-	-	-	-	3780	10.25
10.5	1721	115	75	12:04:26	12	11	12	9.25	13.75	500	11.387	15.887	12.75	14.75	-	-	-	-	2943	15.25
4.25	5374	130	50	09:09:54	4	4	5.5	2.5	7	520	23.688	31.188	26.25	29	-	-	-	-	879	29.5
1.75	514	0	-	-	-	1.25	2.75	1	3	540	40.207	49.207	42.25	47.25	-	-	-	-	2607	47
0.25	1700	-	-	-	-	0	2	0	2	560	58.269	68.769	60	66	-	-	-	-	1	66
-	-	-	-	-	-	0	1.5	0	1.492	580	78.184	88.684	79.5	86.25	-	-	-	-	-	85.75
-	-	-	-	-	-	0	1.5	0	1.314	600	97.413	109.413	99.25	106.25	-	-	-	-	123	105.75

Calls											Puts									
Settle[1]	OI[2]	Total Daily Vol[3]	Vol[4]	Last Trade at	Last Trade	Bid	Offer	AQ Bid	AQ Offer	Strike	AQ Bid	AQ Offer	Bid	Offer	Last Trade	Last Trade at	Vol[4]	Total Daily Vol[3]	OI[2]	Settle[1]
										Expiry : 18Feb11										
16.5	1705	200	50	10:52:14	16	16.5	18.5	13.75	21.25	490	6.766	11.266	8.25	10	-	-	-	-	3780	10.25
10.5	1721	115	75	12:04:26	12	11	12	9.25	13.75	500	11.387	15.887	12.75	14.75	-	-	-	-	2943	15.25
4.25	5374	130	50	09:09:54	4	4	5.5	2.5	7	520	23.688	31.188	26.25	29	-	-	-	-	879	29.5
										Expiry : 18Mar11										
21.5	430	-	-	-	-	21	23.25	18.375	25.875	490	12.625	17.125	13.75	16	14.5	12:53:29	25	25	985	16
16.25	8342	-	-	-	-	15.75	17.75	13	20.5	500	15.625	23.125	18.25	20.5	-	-	-	-	1257	20.75
8.75	4916	0	-	-	-	8	10.25	6.875	11.375	520	27.5	36.5	30.75	33.25	-	-	-	-	1010	33.75
										Expiry : 15Apr11										
25.25	-	-	-	-	-	25.25	28.25	23	30.5	490	15.5	23	17.75	20.75	-	-	-	-	-	20.5
20.5	-	-	-	-	-	19.75	22.75	17.5	25	500	20.25	27.75	22.5	25.5	-	-	-	-	-	25.5
12.5	10	-	-	-	-	12.25	14.25	11	15.5	520	31	40	33.5	37.5	-	-	-	-	-	37.5
										Expiry : 17Jun11										
49.75	1781	-	-	-	-	49.5	53.25	46.875	55.875	460	12.375	19.875	15	17.25	-	-	-	-	801	17.25
36.75	2616	0	-	-	-	36.5	39.75	33.625	42.625	480	19.875	27.375	22.25	25	-	-	-	-	3791	25
18.25	6677	-	-	-	-	17.5	19.75	14.875	22.375	520	39.75	48.75	42.5	46	-	-	-	-	806	46.25
										Expiry : 15Jun12										
80.25	9	-	-	-	-	79.75	85.75	73.823	89.573	440	31.178	44.678	36.5	40.5	-	-	-	-	37	38.75
57.75	10	-	-	-	-	57.25	61.25	52.382	65.882	480	48.201	61.701	53.75	57.75	-	-	-	-	30	56
40.25	-	-	-	-	-	40	44	34.547	48.047	520	70.55	86.3	74.75	80.75	-	-	-	-	-	79.75

Buying options

- If you buy an option, you need the underlying to move in your favour (further into the money) and/or volatility to increase before too much time is eroded.

- For calls you want the underlying to increase
- For puts you want the underlying to decrease

Buying options: advantages and disadvantages

- Potential for enormous percentage returns
- Guaranteed maximum loss (it can't exceed the premium paid for the option)

- Time decay is working against you
- Timing is critical
- Low probability of success
- Dealing costs at both ends, and paying the spread twice

How do I buy an option?

It's no more complicated than buying shares:

1) Find a broker who has access to LIFFE
2) Send them some cash
3) Choose what option to buy and give them your instruction (“buy to open”)
4) Wait for the option to increase in value, then “sell to close”

Writing options

- If you sell an option, you need the underlying to move in your favour (further out of the money) and/or volatility to decrease and/or time to elapse.

- For short calls, you want the underlying to be less than or equal to the strike price at expiry
- For short puts, you want the underlying to be more than or equal to the strike price at expiry

Writing options: advantages and disadvantages

- Time decay is working in your favour
- Timing less critical
- High probability of success - most options expire worthless
- Possibly only one set of dealing costs and one spread to pay

- Maximum return is limited to premium received
- Large maximum potential loss

How do I write an option?

Slightly less easy than buying an option:

1) Find a broker who has access to LIFFE and who will allow you to write options

2) Send them some cash and/or shares as margin

3) Choose what option to write and give them your instruction ("sell to open")

4) Wait for the option to decrease in value, then "buy to close", or wait until expiry if you wish to be assigned or you expect the option to expire worthless.

Margin

- Calculations are complex compared with other leveraged instruments
- Different for every written option, and requirements change every day
- Margin requirements can be high, especially if volatility is high
- Can use mix of shares and cash
- SPAN (Standardized Portfolio ANalysis of risk)
- LCH.Clearnet have a free Windows application to allow you to calculate margin requirements

Margin

- Margin requirements are highest for options that:
  - Are deeply in the money
  - Have an underlying equity that is very volatile
  - Have a long time to expiry
- Margin might be 5% for an OTM position in a utility company that is close to expiry, or 50% for an ITM position in a mining company whose share price has just tanked

Strategies for selling options

Covered Calls

- You hold 1000 shares (or a multiple)
- You agree to sell your shares at a pre-determined price if you are assigned any time between now and expiry
- For making that promise, you receive a premium up front
- If you are assigned, then your shares are called away at the pre-determined price, but you keep the option premium received
- Otherwise you keep your shares and the premium received

Buy-write

- You buy 1000 shares (or a multiple) and immediately write a call option against them
- I'm not a fan – for me the time to buy shares is usually not the time to be writing calls

Naked Calls

- You write a call without owning the shares
- Potential losses are unlimited if the share price shoots up
- Some brokers won't allow them

Naked Puts

- You agree to buy shares at a pre-determined price if you are assigned any time between now and expiry
- Potential losses are large if share price plunges, but no larger than if you had bought the shares instead of writing the option
- Writing puts can be a great way of acquiring shares at less than today's market price.
- However, there is a possibility that the share price will rise, you won't be assigned, and you will miss out on this upside

Risk management: common sense

- Don't write puts unless you would be happy to own the shares in question
- Don't write calls against shares that you wouldn't be happy to sell. Consider capital gains implications
- Always have margin in reserve. Otherwise, if positions move against you, you will be forced to close them at a loss to meet the margin call
- Don't keep all your eggs in one basket

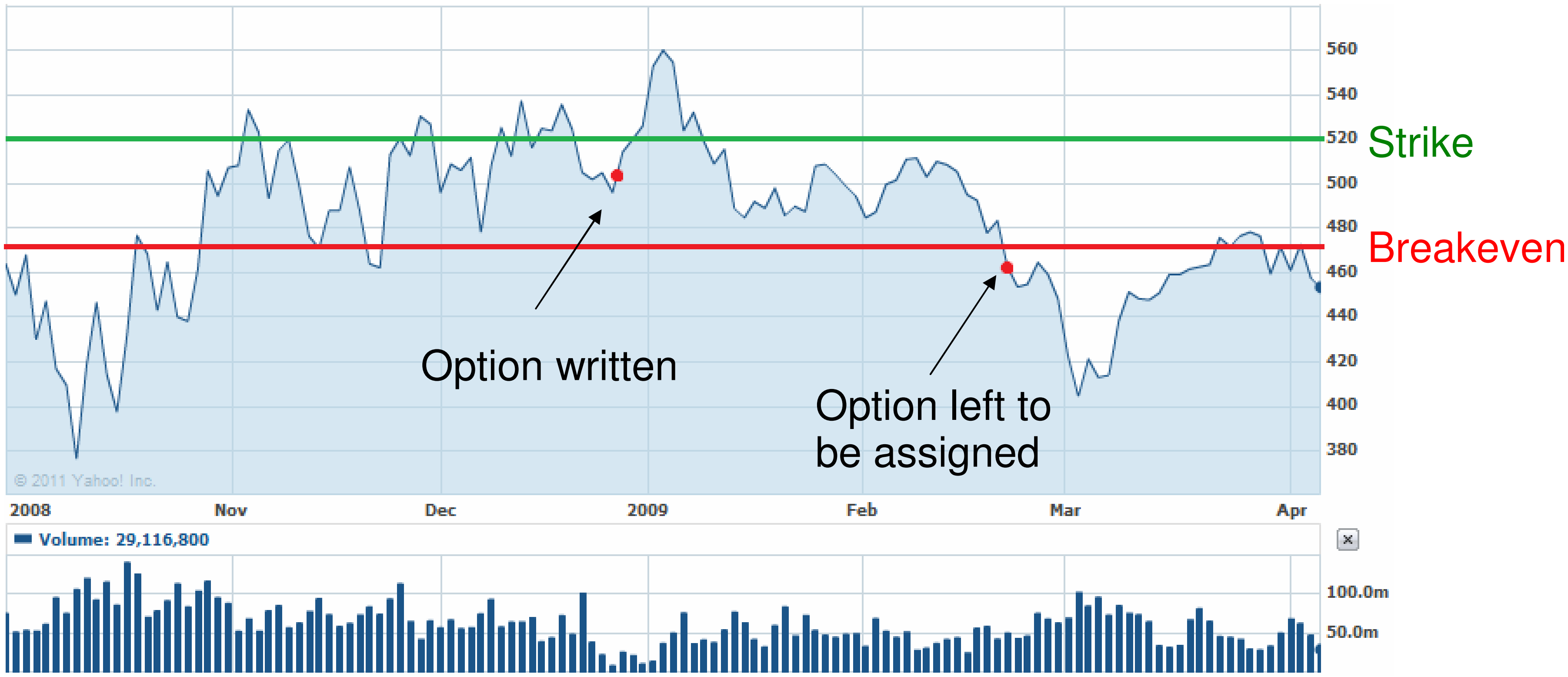
Example trades

- These first 3 trades were all initiated in Dec 2008, and all were for Feb 2009 expiry

Trade 1:

- BP shares were at 503 on 22nd Dec 2008, and I was keen to buy some
- I wrote an ITM (aggressive) put for Feb 2009 with the expectation that it would be assigned

BP Feb 2009 520 naked put



Trade 2:

BHP Billiton shares were trading at approx 1250, and I was holding 1000 shares

I wrote an OTM call with the intention of collecting the premium and keeping my shares

BHP Billiton Feb 2009 1400 covered call

Trade 3:

Rio Tinto shares were trading at approx 1375, and I was holding 1000 shares

I wrote an call which was a long way OTM in the hope that I could collect the premium and keep my shares

Rio Tinto Feb 2009 1700 covered call – assigned early

Trade 4:

Glaxo shares were trading at approx 1243, and I decided I would be happy to buy 1000 if the price slipped

I wrote a long-dated OTM put

GSK June 2010 1200 naked put

Dividends and options

- No free money to be made – dividends are already factored into option prices
- Options can be used to calculate expected dividend payments

Limited risk writing strategies

- Write a put option and hedge it with a short spreadbet or similar
- Spreads: write an option and buy a cheaper option in the same chain as 'insurance'
- For example: write a 1400 put and buy a 1200 put, which would create a bull put spread. You are liable for £14,000 of shares if the share price crashes, but the long put entitles you to sell them for £12,000. Your maximum risk has been reduced from £14,000 to £2,000.

Advantages of using written options to complement an equity portfolio

- Excellent way to generate additional income from a share portfolio
- Time decay allows you to make money in sideways / range-bound markets
- In some situations you can be wrong and still make a profit!
- Can trade in a SIPP

Disadvantages of using written options to complement an equity portfolio

- Limited choice of UK equities
- Limited choice of brokers
- Large / inflexible contract size
- Dealing costs
- Subject to CGT
- Risk?

Thanks for listening!

Any questions?