BU5789: Futures and Options Markets
Professor Zhihong Shi

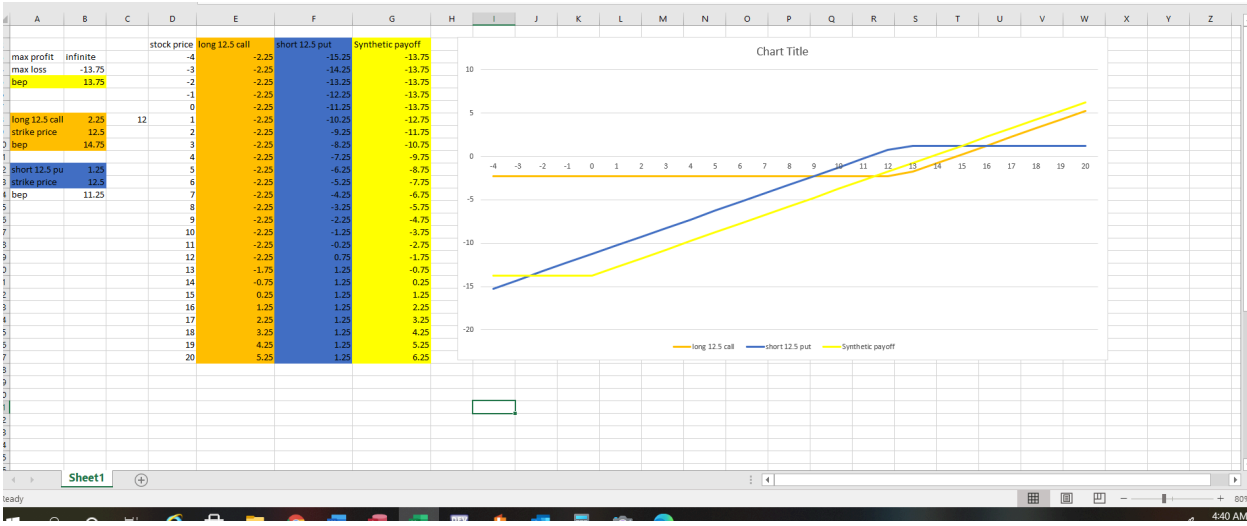
Assignment7: Call Strategies3
Calendar Spread, Condor Spread and Synthetic Stock

For all the payoff diagrams, please draw the payoff diagram for individual positions and combined position as they are shown in the notes and lectures.

1. **Synthetic Stock (source:CBOE education page)**
   XYZ is at $13.75. This stock is a relatively new listing, but is a strong competitor in its industry.
   Outlook:Bullish on XYZ. You are expecting a 15% increase in the stock over the next six months as news of its industry position comes out. You want to establish a large (1,000 share) position over the short-term, but do not want to pay $13,750 capital cost at onset. You also want to keep as much upside as possible, and are willing to accept downside risk of stock.

   Possible strategy: Synthetic Stock.
   - Buy 10 (contracts) June 12.50 calls at 2.25.
   - Sell 10 (contracts) June 12.50 puts at 1.25.

   Answer the following questions for the synthetic stock strategy above:
   a. Calculate the net debit (credit).
      - 1.25 – 2.25 = -1
   b. Draw the payoff chart for the synthetic stock .
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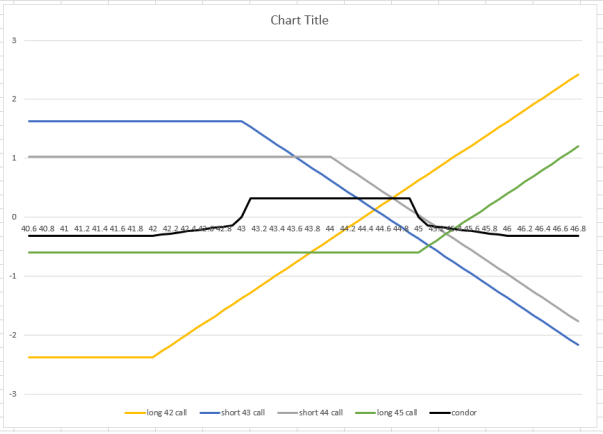
   c. Calculate the maximum profit, maximum loss
      - Max gain = infinite
      - Max loss = -13.75
   d. Is this still a neutral strategy? Why?

- This is not a neutral strategy this is a bullish strategy because there is infinite profit potential.

2. **Call Condor Spread (McMillan)**
   XYZ is at 43.57. One may be able to establish a CONDOR spread in the following way:
   Buy To Open 1 contract of Jan $42 Call at $2.38
   Sell To Open 1 contract of Jan $43 Call at $1.63
   Sell To Open 1 contract of Jan $44 Call at $1.03
   Buy To Open 1 contract of Jan $45 Call at $0.60

   a. Calculate the net debit (credit).
      - (-2.38 – 0.6) + 1.63 + 1.03 = -0.32
   b. Draw the payoff chart for the CONDOR spread.
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			long 42 call	short 43 call	short 44 call	long 45 call	condor
max profit	0.68	40.6	-2.38	1.63	1.03	-0.6	-0.32
max loss	-0.32	40.7	-2.38	1.63	1.03	-0.6	-0.32
bep	42	40.8	-2.38	1.63	1.03	-0.6	-0.32
bep2	45	40.9	-2.38	1.63	1.03	-0.6	-0.32
		41	-2.38	1.63	1.03	-0.6	-0.32
long 42 call	2.38	41.1	-2.38	1.63	1.03	-0.6	-0.32
strike price	42	41.2	-2.38	1.63	1.03	-0.6	-0.32
bep	44.38	41.3	-2.38	1.63	1.03	-0.6	-0.32
		41.4	-2.38	1.63	1.03	-0.6	-0.32
short 43 call	1.63	41.5	-2.38	1.63	1.03	-0.6	-0.32
strike price	43	41.6	-2.38	1.63	1.03	-0.6	-0.32
bep	44.63	41.7	-2.38	1.63	1.03	-0.6	-0.32
		41.8	-2.38	1.63	1.03	-0.6	-0.32
short 44 call	1.03	41.9	-2.38	1.63	1.03	-0.6	-0.32
strike price	44	42	-2.38	1.63	1.03	-0.6	-0.32
bep	45.03	42.1	-2.28	1.63	1.03	-0.6	-0.3
		42.2	-2.18	1.63	1.03	-0.6	-0.28
long 45 call	0.6	42.3	-2.08	1.63	1.03	-0.6	-0.26
strike price	45	42.4	-1.98	1.63	1.03	-0.6	-0.24
bep	45.6	42.5	-1.88	1.63	1.03	-0.6	-0.22
		42.6	-1.78	1.63	1.03	-0.6	-0.2
		42.7	-1.68	1.63	1.03	-0.6	-0.18
		42.8	-1.58	1.63	1.03	-0.6	-0.16
		42.9	-1.48	1.63	1.03	-0.6	-0.14
		43	-1.38	1.63	1.03	-0.6	0
		43.1	-1.28	1.53	1.03	-0.6	0.32
		43.2	-1.18	1.43	1.03	-0.6	0.32
		43.3	-1.08	1.33	1.03	-0.6	0.32
		43.4	-0.98	1.23	1.03	-0.6	0.32
		43.5	-0.88	1.13	1.03	-0.6	0.32



   c. Calculate the maximum profit, maximum loss.
      - Max profit = 0.68
      - Max loss = 0.32
   d. Is this still a neutral strategy? Why?
      - This is classified as neutral strategy, because max profit is around stock price.
   e. What is the difference between a BUTTERFLY spread and a CONDOR spread?
      - The difference is that in condor spread both short calls have different strike price, however in butterfly spread both short calls have similar strike price.

Answer the following questions based on the articles attached in the assignment.

3. Variation of call calendar spread (Barron's:Prime Time for an Amazon Trade, Oct. 17, 2017)
   a. When is the article published?
      - 10/18/2017
      What is the current stock price of Amazon on the date the article was published?

- $1007

b. What is the forecast of the stock price according to the article? What is its price range over the past year?
   - Price range throughout the year was from $710.10 - $1,083.31

c. What is the strategy recommended with the Oct. $1050 calls and Jan. 1090 calls?
   - The recommended strategy was to Short Oct $1050 call & go long Jan $1090 call

d. How does the strategy work?
   - This strategy involves selling the October call and lower the risk with a January call. If at expiration with the October call the stock price is below $1050 then both contracts are at a loss.

4. Variation of synthetic stocks (Barron's - There's a Lot of Pent-Up Demand for What Disney Has to Offer. Here's a Way to Play It. Mar. 11, 2021)
   a. When is the article published?
   - March 11 2021

   What is the current stock price of Disney on the date the article was published?
   - Around $195.38

   b. What is the forecast of the stock price according to the article? What is its price range over the past year?
   - They forecasted positive future because of reopening of the states. Price range was between $479.07 - $203.02.

   c. What is the strategy recommended with calls and puts?

   The strategy suggested was to buy may 200 call and sell May 190 put. 8.75 – 8.00 = .75 as your cost.

   d. Explain how does the strategy work using the payoff diagram.

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			long 200 call	short 190 call	combined
max profit	infinite	186	-8.75	-12	-20.75
max loss	-190.75	187	-8.75	-11	-19.75
bep	210.75	188	-8.75	-10	-18.75
		189	-8.75	-9	-17.75
		190	-8.75	-8	-16.75
long 200 call	8.75	191	-8.75	-7	-15.75
strike price	200	192	-8.75	-6	-14.75
bep	208.75	193	-8.75	-5	-13.75
		194	-8.75	-4	-12.75
short 190 put	8	195	-8.75	-3	-11.75
strike price	190	196	-8.75	-2	-10.75
bep	198	197	-8.75	-1	-9.75
		198	-8.75	0	-8.75
		199	-8.75	1	-7.75
		200	-8.75	2	-6.75
		201	-7.75	3	-4.75
		202	-6.75	4	-2.75
		203	-5.75	5	-2.75
		204	-4.75	6	-2.75
		205	-3.75	7	-2.75
		206	-2.75	8	-1.75
		207	-1.75	8	-0.75
		208	-0.75	8	0.25
		209	0.25	8	1.25
		210	1.25	8	2.25
		211	2.25	8	3.25
		212	3.25	8	4.25
		213	4.25	8	5.25
		214	5.25	8	6.25
		215	6.25	8	7.25

