

Soya Saxa Soybeans



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“Today, farmers in over 30 states grow soybean, making soybeans the United states’ second largest crop in cash sales and number one value Crop export.” –American Soybean Association

Company Background

Soya Saxa Co.

- Soya Saxa, specializes in processing soybeans (type:S1) for production and sale of soybean derived products. Our company is ranked #13 in the *Farmer 500* survey, which speaks for itself.
- The company's asset base includes soy processing plants in the U.S., the largest soy refinery in the Midwest, grain elevators, and a transportation fleet that includes more than 100 rail cars, 300 trucks, 40 dry cargo barges and 3 ocean-going vessels.
- Our mission is to make Soya Saxa the company to initiate the beginnings of an industry-wide consolidation whereby we will consolidate the producers and alliances around the world spearheaded by the charisma of our four founders. Upon becoming distributors to form an international soy cartel - SOYPEC. We have forged numerous a global agribusiness powerhouse, we intend to genetically modify our soy to protect all humanity against the most common and curable diseases.
- We currently order our raw materials from over 25 different countries and upon processing we reach over 100 markets worldwide.
- Our products range from soymilk to soy sauce to soybean burgers. The versatile soybean has enabled our new venture to carry relatively low-risk due to the many different products we can produce from one central soybean. However, we cannot carelessly allow the soybean to shelter us from the price volatility we find in the financial markets. Price risk is managed by entering into futures contracts. Futures contracts are used in combination with forward purchasing of soy in order to take advantage of market fluctuations. This provides us with more favorable pricing opportunities. We order our soybeans, which are traded globally, on the open market.



Business Problem

Soya Saxa Soybeans of is planning to enter in to the U.S. tofu market beginning in mid-September of 2001. This requires additional need for soybeans for this new production line. In our initial production run, we estimate we will need 10 million bushels of whole soybeans. We would like to purchase our soybeans through the forward/futures market to minimize our risk of an unfavorable price change. We are using Soybeans (S1) as our underlying.

Market Trends

The advent of numerous farming technologies will transform supply and demand economics across the agricultural board. Facing re-orientation challenges in production and manufacturing methods, markets will have to respond or be left in the proverbial dust. Rapid increases in soybean production and use in the past century testify to the American soybean market's victory. Poised in the 21st century with some new and some old challenges, the United States' soybean industry is on a steady and successful path.

Even though tests lie on the horizon for the soybean industry, soybean supply in the U.S. is on a sturdy path. Many experts have voiced criticism over biotechnology-enhanced soybeans for its associated risks. Regulatory powers such as the FDA, EPA and the USDA have declared enhanced soybeans safe after years of testing. Incorporation of these new technologies will not only increase farmer's profitability but levels of beans produced. The U.S. produces more soybeans than anywhere else in the world with American farmers harvesting record averages in the past few years. The soybean supply in the United States is on a secure growth move.

Matching the positive outlook on supply, demand for the soybean is on the move. Dubbed the miracle crop, the soybean is the foremost provider of protein and oil. In fact, a 60 lb. bushel of soybeans yields about 48 lbs. of protein-rich meal and 11 pounds of oil. Recognizing the high value in the crop, the U.S. government enacted the Federal Agriculture Improvement and Reform Act of 1996, which has benefited U.S. Soybean producers in competing for domestic acres and foreign markets. The soybean's various uses affords it a distinguished position in that the crop can answer many of the American, as well as the Global, demand needs.

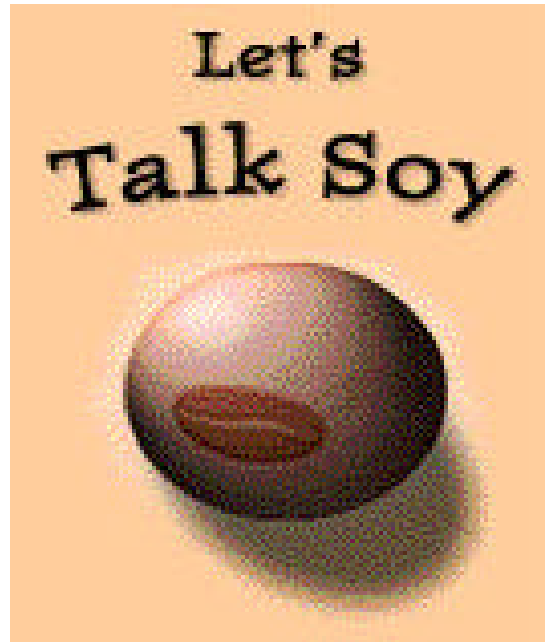
In conclusion, the soybean is a fundamental in food. Encouraged by the lack of regulatory policies, soybean supply will continue to render a positive picture. Demand should never see a dark side with the soybean's many essential uses. The soybean that grew up in China will continue to grow strong in Chicago, Illinois – the heart of the U.S. soybean industry.

Market Prices

Futures Prices	
<u>Date</u>	<u>Price</u>
May 2001	4.426
July 2001	4.376
September 2001	4.266
January 2002	4.400
July 2002	4.670

Call Option Prices	
<i>settlement date: September 12, 2001</i>	
<u>Strike Price</u>	<u>Settlement price</u>
3.800	0.514
4.000 ITM	0.370
4.200 ~ATM	0.262
4.400 OTM	0.186
4.600	0.132
4.800	0.960

Put Option Prices	
<i>settlement date: September 12, 2001</i>	
<u>Strike Price</u>	<u>Settlement price</u>
3.800	0.004
4.000 OTM	0.016
4.200 ~ATM	0.062
4.400 ITM	0.156
4.600	0.295
4.800	0.463



Market View

Prices: Increasing when compared to the forward price

Volatility: Our view is equal to the market therefore, stable

Value @ Risk

Underlying exposure = short 2000 contracts = value of \$42,660,000 at futures prices. (1 contract = 5000 bushels of soybeans).

Risk limit = \$2,500,000 with the probability of loss at 5%

We are permitted to loss up to \$2,500,000 but no more than 1 out of 20 times.

Expected market price per contract = \$21,481 (\$4.296/bushel)

Upper bound price per contract = \$24,042

Lower bound price per contract = \$19,193

Lower Critical Value = \$3.839

Upper Critical Value = \$4.808

After risk management calculations, we must hedge 1165 contracts and can have 835 contracts exposed.

For the underlying position of \$42,660,000, we must buy \$25,024,783 worth of soybeans.

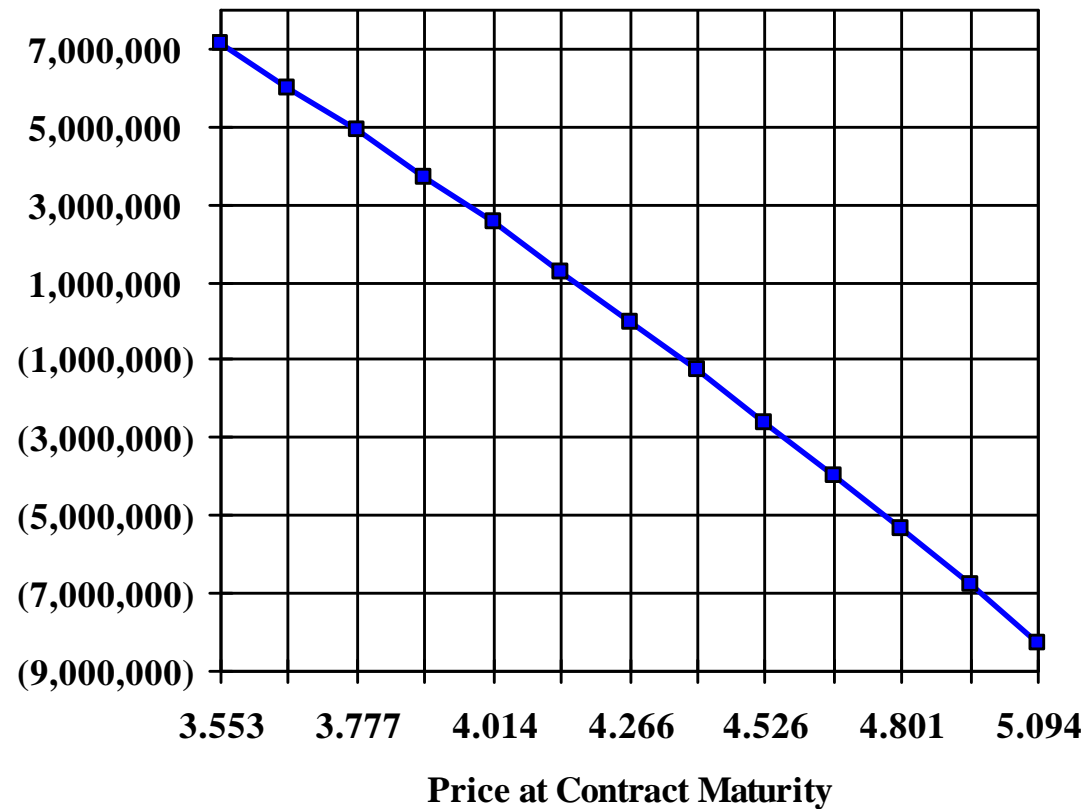


Unhedged Position

S
F
4.266
0.00
10,000,000

Short Forward Position

3.553	7,125,414
3.663	6,026,406
3.777	4,893,409
3.893	3,725,370
4.014	2,521,206
4.138	1,279,800
4.266	0
4.394	(1,279,800)
4.526	(2,597,994)
4.662	(3,955,734)
4.801	(5,354,206)
4.945	(6,794,632)
5.094	(8,278,271)



Map of

Level Of Confidence

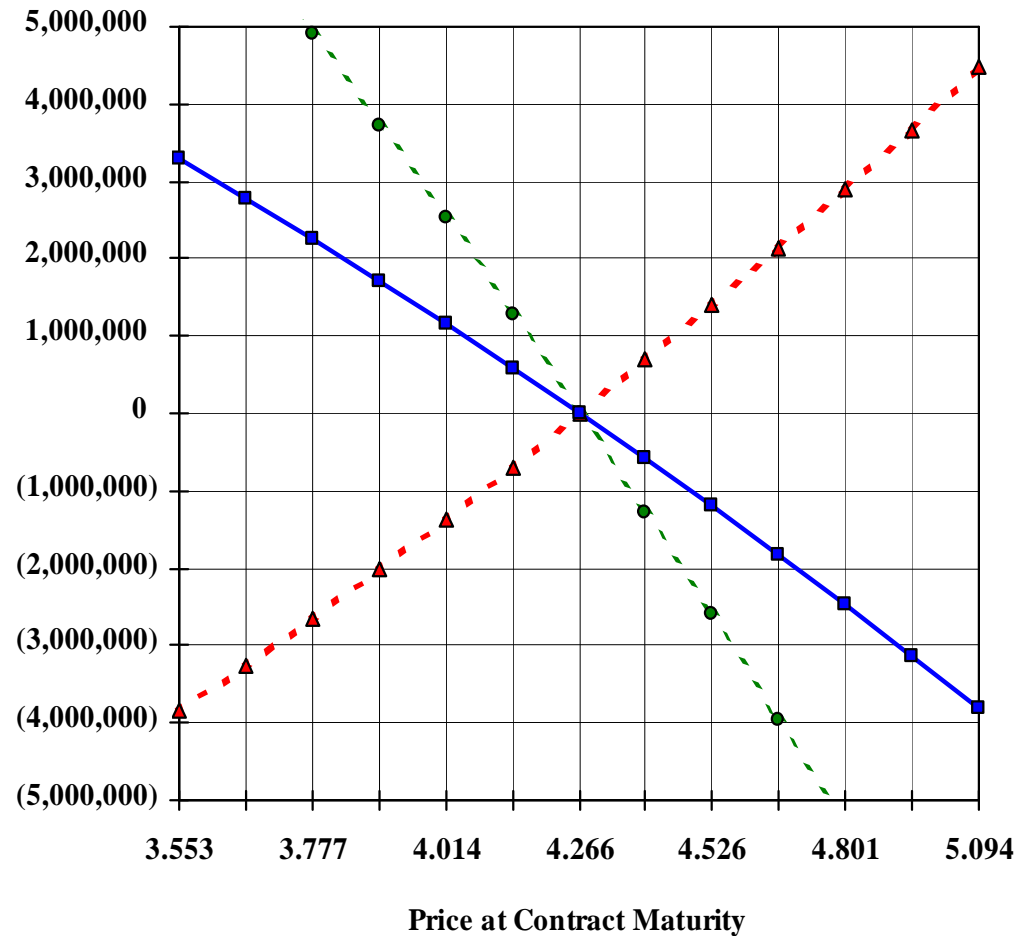
Direction Vs Market View	Uncertain	= Market	Certain
Up	<i>Alternative 1</i> Synthetic Long Call	<i>Alternative 2A</i> Synthetic +Citm <i>Alternative 2B</i> Synthetic -Pitm	<i>Alternative 4</i> Fractional Long Position
? Or Stable		<i>Alternative 3</i> Synthetic Short Straddle (+F-2C)	
Down			

Forward Hedge

S	L
F	F
4.266	4.266
0.00	0.00
10,000,000	5,400,000

Combined -10000000F+5400000F Position

	-10000000F	+5400000F	-10000000F+5400000F
3.553	7,125,414	(3,847,724)	3,277,691
3.663	6,026,406	(3,254,259)	2,772,147
3.777	4,893,409	(2,642,441)	2,250,968
3.893	3,725,370	(2,011,700)	1,713,670
4.014	2,521,206	(1,361,451)	1,159,755
4.138	1,279,800	(691,092)	588,708
4.266	0	0	0
4.394	(1,279,800)	691,092	(588,708)
4.526	(2,597,994)	1,402,917	(1,195,077)
4.662	(3,955,734)	2,136,096	(1,819,638)
4.801	(5,354,206)	2,891,271	(2,462,935)
4.945	(6,794,632)	3,669,101	(3,125,531)
5.094	(8,278,271)	4,470,266	(3,808,005)



Alternative 1

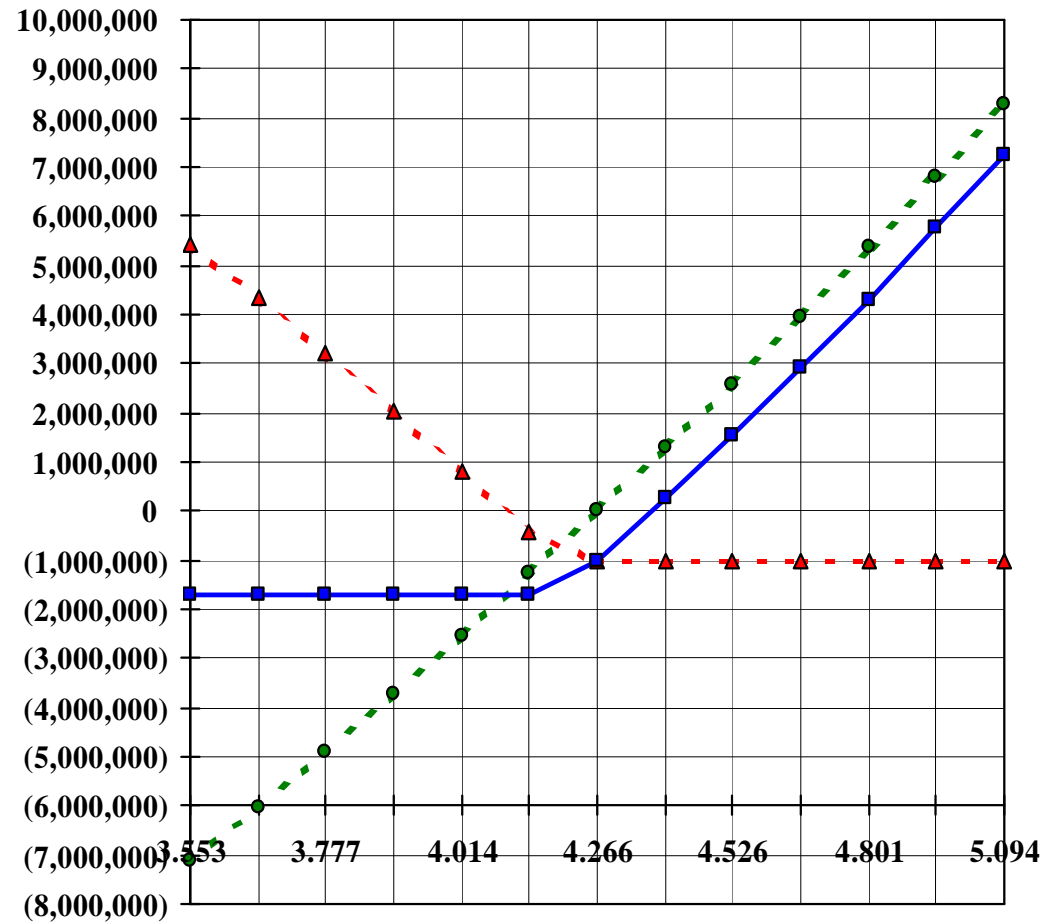
Synthetic Long Call

View: Up, unsure

L	L
F	P
4.266	4.2
0.00	0.104
10,000,000	10,000,000

Combined +10000000F+10000000P Position

	+10000000F	+10000000P	-10000000F+10000000P
3.553	(7,125,414)	5,425,414	(1,700,000)
3.663	(6,026,406)	4,326,406	(1,700,000)
3.777	(4,893,409)	3,193,409	(1,700,000)
3.893	(3,725,370)	2,025,370	(1,700,000)
4.014	(2,521,206)	821,206	(1,700,000)
4.138	(1,279,800)	(420,200)	(1,700,000)
4.266	0	(1,040,000)	(1,040,000)
4.394	1,279,800	(1,040,000)	239,800
4.526	2,597,994	(1,040,000)	1,557,994
4.662	3,955,734	(1,040,000)	2,915,734
4.801	5,354,206	(1,040,000)	4,314,206
4.945	6,794,632	(1,040,000)	5,754,632
5.094	8,278,271	(1,040,000)	7,238,271



Price at Contract Maturity

Alternative 2A

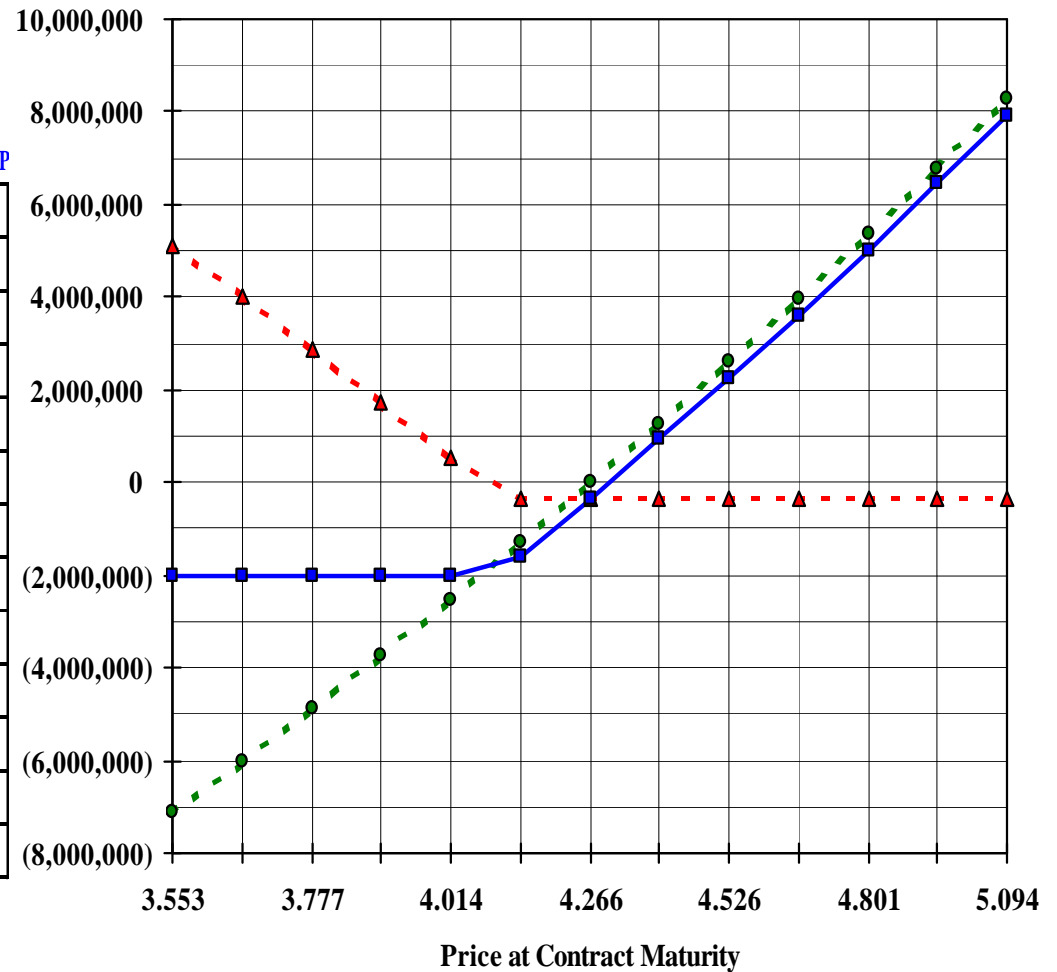
Synthetic +Citm

View: Up, less
 Unsure than +ATM

L	L
F	P
4.266	4.1
0.00	0.03
10,000,000	10,000,000

Combined +10000000F+10000000P Position

	+10000000F	+10000000P	-10000000F+10000000P
3.553	(7,125,414)	5,125,414	(2,000,000)
3.663	(6,026,406)	4,026,406	(2,000,000)
3.777	(4,893,409)	2,893,409	(2,000,000)
3.893	(3,725,370)	1,725,370	(2,000,000)
4.014	(2,521,206)	521,206	(2,000,000)
4.138	(1,279,800)	(340,000)	(1,619,800)
4.266	0	(340,000)	(340,000)
4.394	1,279,800	(340,000)	939,800
4.526	2,597,994	(340,000)	2,257,994
4.662	3,955,734	(340,000)	3,615,734
4.801	5,354,206	(340,000)	5,014,206
4.945	6,794,632	(340,000)	6,454,632
5.094	8,278,271	(340,000)	7,938,271



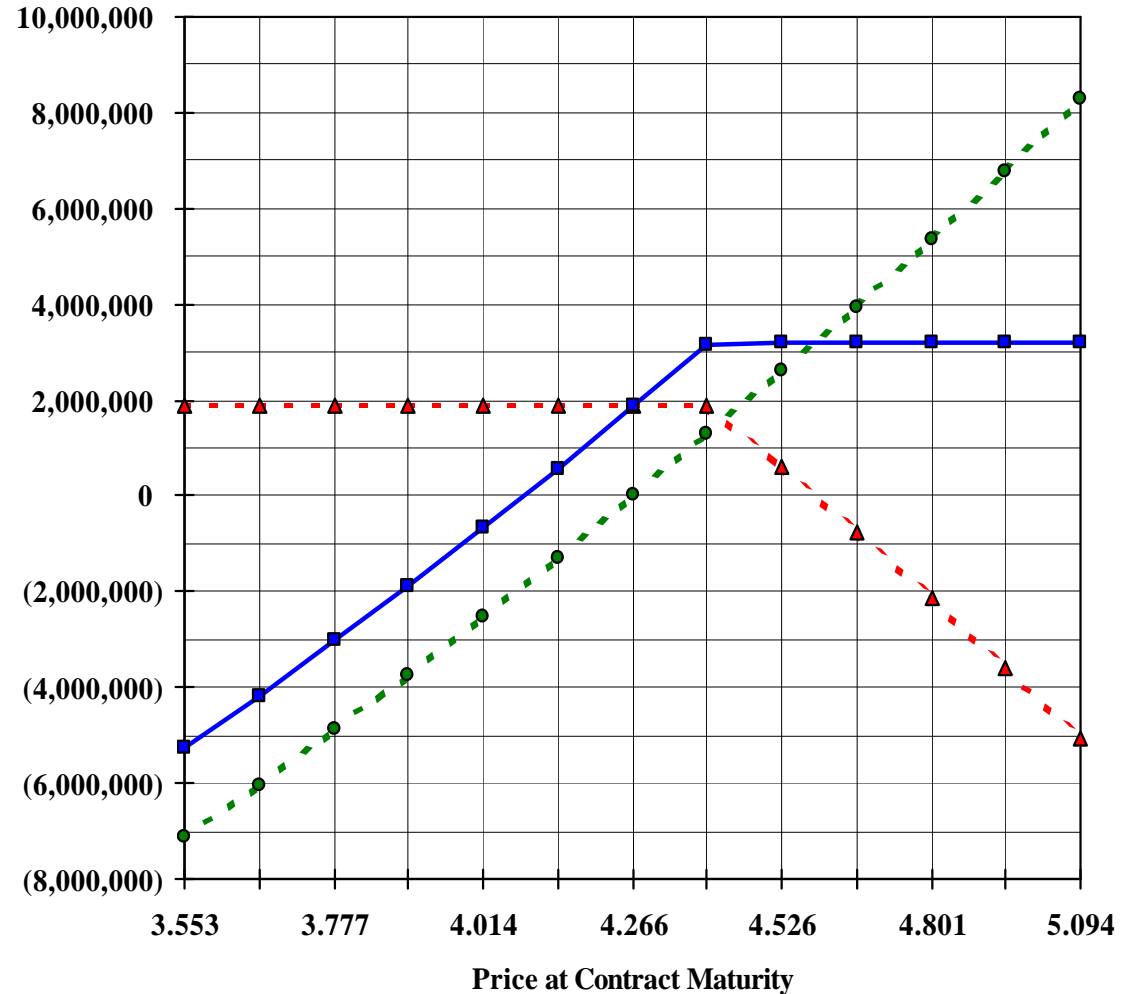
Alternative 2B

Synthetic -Pitm

View: Up, with cap at OTM level

L	S
F	C
4.266	4.4
0.00	0.19
10,000,000	10,000,000

Combined +10000000F-10000000C Position



	+10000000F	-10000000C	10000000F-10000000C
3.553	(7,125,414)	1,860,000	(5,265,414)
3.663	(6,026,406)	1,860,000	(4,166,406)
3.777	(4,893,409)	1,860,000	(3,033,409)
3.893	(3,725,370)	1,860,000	(1,865,370)
4.014	(2,521,206)	1,860,000	(661,206)
4.138	(1,279,800)	1,860,000	580,200
4.266	0	1,860,000	1,860,000
4.394	1,279,800	1,860,000	3,139,800
4.526	2,597,994	602,006	3,200,000
4.662	3,955,734	(755,734)	3,200,000
4.801	5,354,206	(2,154,206)	3,200,000
4.945	6,794,632	(3,594,632)	3,200,000
5.094	8,278,271	(5,078,271)	3,200,000

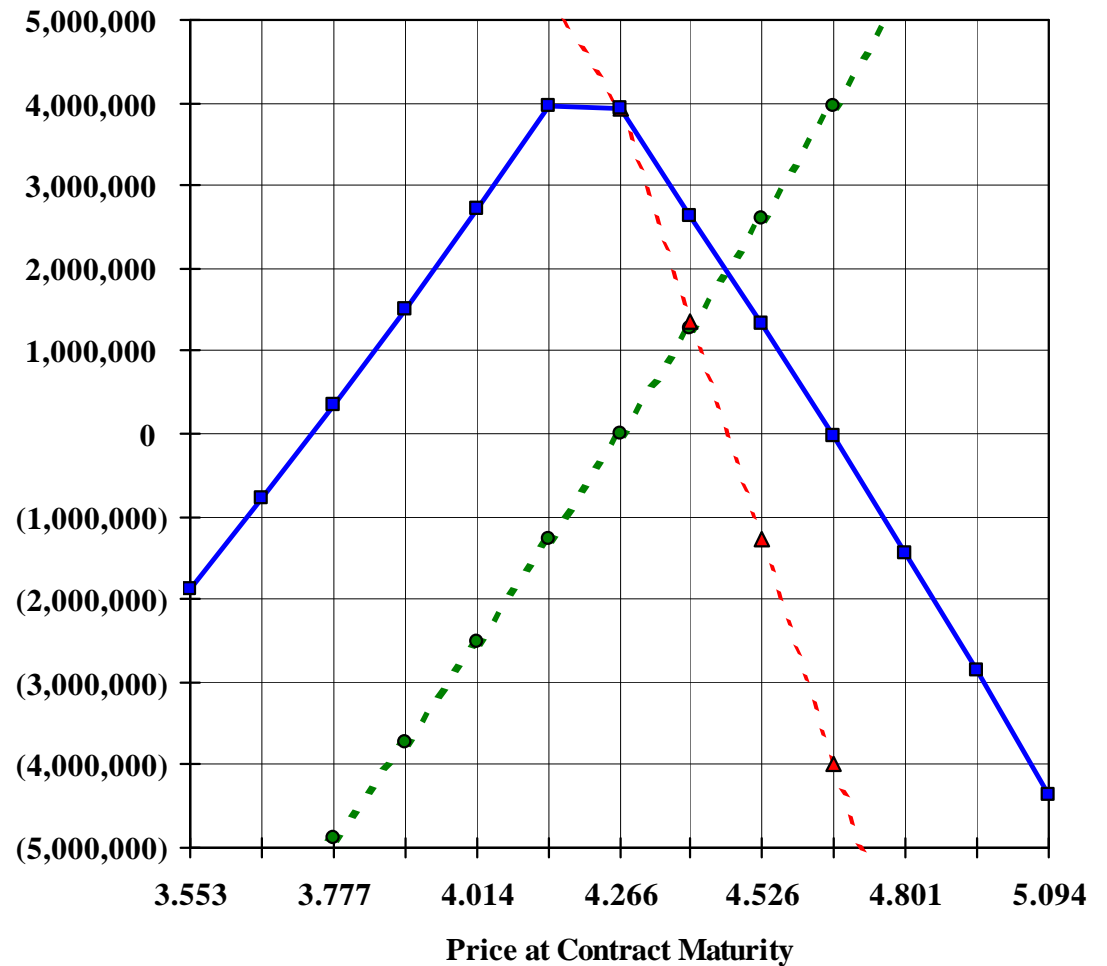
Alternative 3

Synthetic Short Straddle +F-2C

View: Stable
(neutral direction)

L	S
F	C
4.266	4.2
0.00	0.26
10,000,000	20,000,000

Combined +10000000F-20000000C Position



	+10000000F	-20000000C	+10000000F-20000000C
3.553	(7,125,414)	5,240,000	(1,885,414)
3.663	(6,026,406)	5,240,000	(786,406)
3.777	(4,893,409)	5,240,000	346,591
3.893	(3,725,370)	5,240,000	1,514,630
4.014	(2,521,206)	5,240,000	2,718,794
4.138	(1,279,800)	5,240,000	3,960,200
4.266	0	3,920,000	3,920,000
4.394	1,279,800	1,360,400	2,640,200
4.526	2,597,994	(1,275,988)	1,322,006
4.662	3,955,734	(3,991,468)	(35,734)
4.801	5,354,206	(6,788,412)	(1,434,206)
4.945	6,794,632	(9,669,264)	(2,874,632)
5.094	8,278,271	(12,636,542)	(4,358,271)

Alternative 4

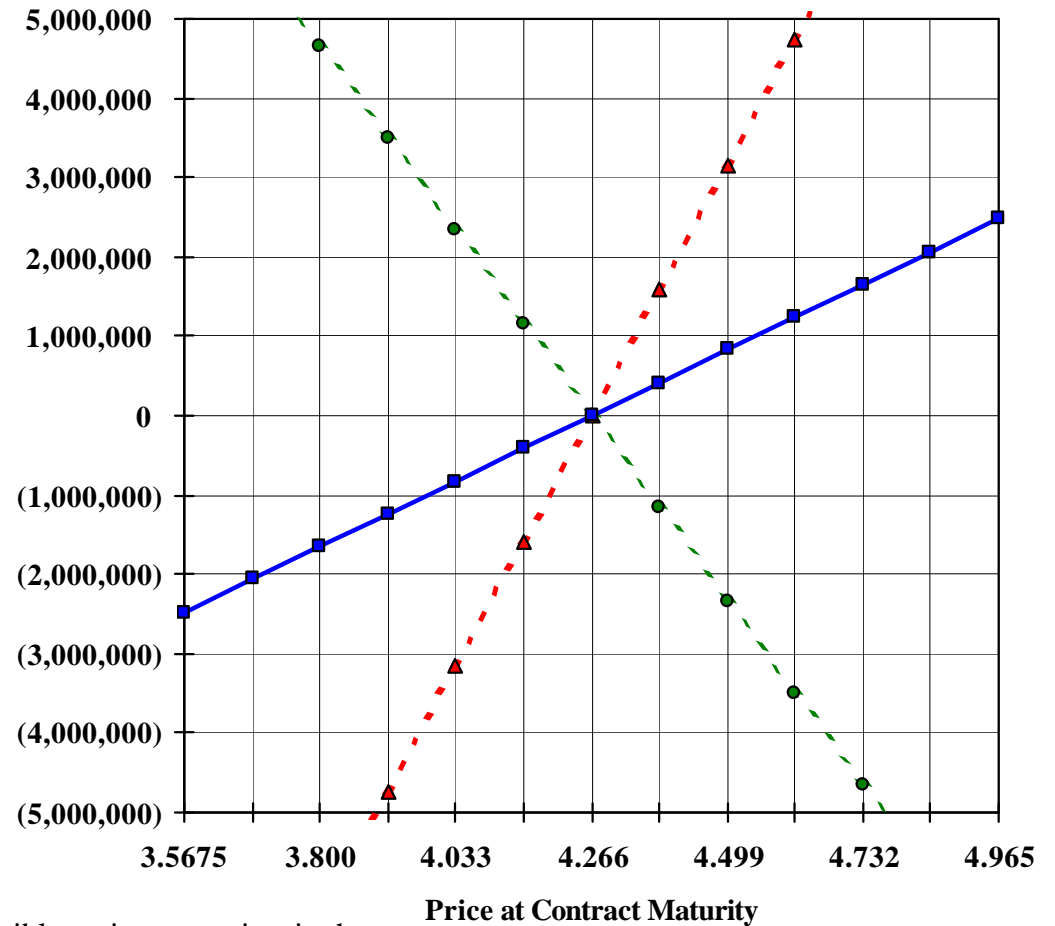
View: Up, sure

Fractional Positional Long

S	L
F	F
4.266	4.266
0.00	0.00
10,000,000	13,550,000

Combined $-10000000F+13550000F$ Position

	-10000000F	+13550000F	-10000000F+13550000F
3.5675	6,985,000	(9,464,675)	(2,479,675)
3.684	5,820,833	(7,887,229)	(2,066,396)
3.800	4,656,667	(6,309,783)	(1,653,117)
3.917	3,492,500	(4,732,337)	(1,239,838)
4.033	2,328,333	(3,154,892)	(826,558)
4.150	1,164,167	(1,577,446)	(413,279)
4.266	0	0	0
4.382	(1,164,167)	1,577,446	413,279
4.499	(2,328,333)	3,154,892	826,558
4.615	(3,492,500)	4,732,338	1,239,838
4.732	(4,656,667)	6,309,783	1,653,117
4.848	(5,820,833)	7,887,229	2,066,396
4.965	(6,985,000)	9,464,675	2,479,675



*Given our loss limit and our approach to take advantage of possible option scenarios, in the case that one is more certain about a view of up, sure, then one can sell at the money puts in accordance to this profit representation.



Recommended Position

- Our recommendation is option #2A: **Synthetic +Citm**, (+F+Potm), due to our expected movement of soybean prices.
- This position will allow Soya Saxa to **profit from an increase** in the price relative to the forward price. Given our loss limit, we do not see the price decreasing below our lower critical value, but at the same time, we do not want to cap our ability to profit from price increases.
- This position offers **more of an upside opportunity** than Synthetic Long Call (alternative 1) and we are more sure than +ATM.
- In the event of an unlikely price decrease, Soya Saxa could **lose no more than \$2,000,000** which is within our loss limit.
- This position does not place a limit on our profitability from rising prices as does Alternative #3 or a bull spread.
- This option is also attractive because it is **relatively inexpensive**. Other positions are too expensive due to the conservative nature of management.