Synthetic Long Stock Position

For example, assume that a customer buys 100 shares of ABC stock at $50. If we wish to create a synthetic equivalent, we would:

Buy 1 ABC Jan 50 Call @ $5
Sell 1 ABC Jan 50 Put @ $5

If the market rises, the customer has unlimited gain potential on the long call, while the short put expires "out the money."

If the market stays exactly at $50, both contracts expire "at the money," and the customer has no gain or loss.

If the market drops, the customer loses on the short put, while the long call expires "out the money." He incurs the maximum loss on the short put if the stock becomes worthless.

To summarize, the synthetic equivalent of long stock is:

Long Call / Short Put = Synthetic Long Stock

Notice that to create the synthetic long stock position (a bullish strategy), we used both option positions that are bullish. This is an easy way to remember which option positions create a synthetic stock position.

Synthetic Short Stock Position

For example, assume that a customer shorts 100 shares of ABC stock at $50. If we wish to create a synthetic equivalent, we would:

Sell 1 ABC Jan 50 Call @ $5
Long 1 ABC Jan 50 Put @ $5

If the market rises, the customer has unlimited loss potential on the short call, while the long put expires "out the money."

If the market stays exactly at $50, both contracts expire "at the money," and the customer has no gain or loss.

If the market drops, the customer gains on the long put, while the short call expires "out the money." He incurs the maximum gain on the long put if the stock becomes worthless.

To summarize, the synthetic equivalent of short stock is:

Short Call / Long Put = Synthetic Short Stock

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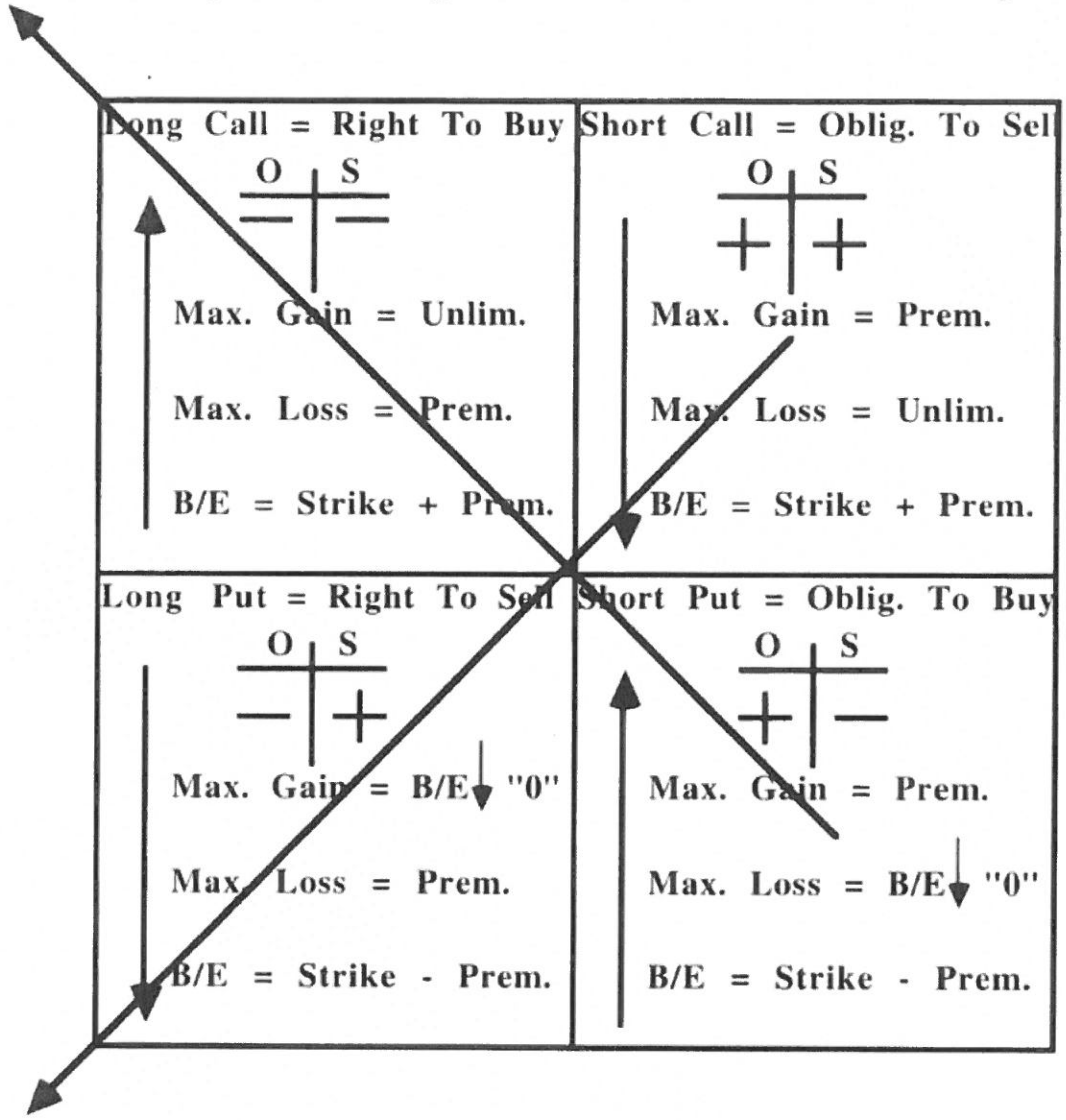
Again, a picture is worth a thousand words to remember the positions that create synthetic stock positions.

To Create Synthetic Long Stock Position: Take Both Up Arrows



To Create Synthetic Short Stock Position: Take Both Down Arrows

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SECTION 8: SYNTHETIC POSITIONS

8a. SYNTHETICS OVERVIEW

Synthetic Or "Equivalent" Positions

Why take a regular option position when you can use a synthetic instead? Synthetic option positions are "equivalent" positions used by professional traders for two reasons. The first is that the net cost of the synthetic position may be less than the cost of the actual option. The second is that traders can reverse positions in the market with synthetic positions in a way that reduces commission costs.

Synthetic option positions always involve taking a stock position along with a different option position. These are explained next, and must be memorized for the examination.

8b. SYNTHETIC LONG CALL

We will create our own synthetic long call position. Assume that the market price of ABC stock is at $50 and a customer is:

Long 1 ABC Jan 50 Call @ $5

The characteristics of this position are:

Unlimited Gain Potential;
Loss Is Limited to the Premium;
Breakeven Is at $55.

To create a "synthetic" long call, we must match these characteristics exactly with a stock position and another option position. To obtain the characteristic of unlimited upside gain potential, we must buy the stock.

Long 100 shares of ABC at $50

However, while we have matched the upside characteristic, we have not matched the downside. If the market drops, $5,000 could be lost on the long stock, while the long call would only lose $500. We must find the appropriate option position to limit downside loss. The option position that will limit downside loss on long stock is the purchase of a put. Assume that the following long put position is added:

Synthetic Long Call

Long 100 shares of ABC at $50
Long 1 ABC Jan 50 Put @ $5

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If the market drops, the long put will be exercised, and there will be no loss on the long stock position. The net loss is the premium paid of $5 for the put ($500). For this position, the breakeven point is $50 + $5 = $55.

The characteristics of the combined position exactly match those of the long call. Thus, being long stock/long put is the synthetic equivalent of a long call position.

Synthetic Long Call = Long Stock / Long Put

This was covered previously in the "Hedging Section" of this chapter. To recap, an equivalent strategy to buying stock and buying a protective put on that stock is to simply buy a call. From the standpoint of the "T" account:

Long Call Exercised

Option	Stock
—	—
"Minus" Because Call Premium Was Paid	"Minus" Because Stock Is Purchased On Exercise

Long Stock/Long Put

Option	Stock
—	—
"Minus" Because Put Premium Was Paid	"Minus" Because Stock Was Purchased

These strategies, from a math standpoint, are "Minus - Minus" strategies.

8c. SYNTHETIC SHORT CALL

We will create our own synthetic short call position. Assume that the market price of ABC stock is at $50 and a customer is:

Short 1 ABC Jan 50 Call @ $5

The characteristics of this position are:

Unlimited Loss Potential;
Gain Is Limited to the Premium;
Breakeven Is at $55.

To create a "synthetic" short call, we must match these characteristics exactly with a stock position and another option position. To obtain the characteristic of unlimited upside loss potential, we must short the stock.

Short 100 shares of ABC at $50

However, while we have matched the upside characteristic, we have not matched the downside. If the market drops, $5,000 will be gained on the short stock, while the short call only gains $500. We must find the appropriate option position to limit downside gain. The option position that will limit downside gain on short stock is the sale of a put option. Assume that the following short put position is added

Synthetic Short Call

Short 100 shares of ABC at $50
Short 1 ABC Jan 50 Put @ $5

If the market drops, the short put will be exercised, and there will be no gain or loss on the stock position (the stock that was sold for $50 will be purchased at $50 from the exercise of the short put). The net gain is the premium received of $5 for the put ($500).

For this position, the breakeven point is $50 + $5 = $55. At $55, the short put expires "out the money" and the $5 premium received from that contract exactly offsets the loss on the short stock position.

The characteristics of the combined position exactly match those of the short call. Thus, being short stock/short put is the synthetic equivalent of a short call position.

Synthetic Short Call = Short Stock / Short Put

This was covered previously in the "Income Strategies Section" of this chapter. To recap, an equivalent strategy to shorting stock and selling a put on that stock is to simply sell a call. From the standpoint of the "T" account:

Short Call Exercised

Option	Stock
+	+
"Plus" Because Call Premium Was Received	"Plus" Because Stock Is Sold On Exercise

Short Stock/Short Put

Option	Stock
+	+
"Plus" Because Put Premium Was Received	"Plus" Because Stock Was Sold

These strategies, from a math standpoint, are "Plus - Plus" strategies.

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8d. SYNTHETIC LONG PUT

We will create our own synthetic long put position. Assume that the market price of ABC stock is at $50 and a customer is:

Long 1 ABC Jan 50 Put @ $5

The characteristics of this position are:

Maximum Gain Occurs When The Stock Is Worthless;
Loss Is Limited to the Premium;
Breakeven Is at $45.

To create a "synthetic" long put, we must match these characteristics exactly with a stock position and another option position. To obtain the characteristic of increasing gain as the market drops, we must short the stock.

Short 100 shares of ABC at $50

However, while we have matched the downside characteristic, we have not matched the upside. If the market rises, the short stock position has unlimited loss potential, while the long put only loses the $500 premium. We must find the appropriate option position to limit upside loss. The option position that will limit upside loss on short stock is the purchase of a call option. Assume that the following long call position is added:

Synthetic Long Put

Short 100 shares of ABC at $50
Long 1 ABC Jan 50 Call @ $5

If the market rises, the long call will be exercised, and there will be no gain or loss on the stock position (the stock that was sold for $50 will be purchased at $50 from the exercise of the long call). The net loss is the premium paid of $5 for the call ($500).

For this position, the breakeven point is $50 - $5 = $45. At $45, the long call expires "out the money" and the $5 premium paid for that contract exactly offsets the gain on the short stock position.

The characteristics of the combined position exactly match those of the long put. Thus, being short stock/long call is the synthetic equivalent of a long put position.

Synthetic Long Put = Short Stock / Long Call

This was covered previously in the "Hedging Section" of this chapter. To recap, an equivalent strategy to shorting

stock and buying a protective call on that stock is to buy a put. From the standpoint of the "T" account:

Long Put Exercised

Option	Stock
−	+
"Minus" Because Put Premium Was Paid	"Plus" Because Stock Is Sold On Exercise

Short Stock/Long Call

Option	Stock
−	+
"Minus" Because Call Premium Was Paid	"Plus" Because Stock Was Sold

These strategies, from a math standpoint, are "Minus - Plus" strategies.

8e. SYNTHETIC SHORT PUT

We will create our own synthetic short put position. Assume that the market price of ABC stock is at $50 and a customer is:

Short 1 ABC Jan 50 Put @ $5

The characteristics of this position are:

Maximum Loss Occurs if the Stock Is Worthless;
Gain Is Limited to the Premium;
Breakeven Is at $45.

To create a "synthetic" short put, we must match these characteristics exactly with a stock position and another option position. To obtain the characteristic of maximum loss if the stock is worthless, we must buy the stock.

Long 100 shares of ABC at $50

However, while we have matched the downside characteristic, we have not matched the upside. If the market rises, there is unlimited gain potential on the long stock, while the short put only gains $500. We must find the appropriate option position to limit upside gain. The option position that will limit upside gain on long stock is the sale of a call option. Assume that the following short call position is added:

Synthetic Short Put

Long 100 shares of ABC at $50
Short 1 ABC Jan 50 Call @ $5

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If the market rises, the short call will be exercised, and there will be no gain on the long stock position. The net gain is the premium received of $5 for the call ($500).

For this position, the breakeven point is $50 - $5 = $45. At $45, the short call expires "out the money" and the $5 per share received in premiums reduces the cost of the stock to $45 per share.

The characteristics of the combined position exactly match those of the short put. Thus, being long stock/short call is the synthetic equivalent of a short put position.

Synthetic Short Put = Long Stock / Short Call

This was covered previously in the "Income Strategies Section" of this chapter. To recap, an equivalent strategy to buying stock and selling a call on that stock is to simply sell a put. From the standpoint of the "T" account:

Short Put Exercised

Option	Stock
+	—
"Plus" Because Put Premium Was Received	"Minus" Because Stock Is Purchased On Exercise

Long Stock/Short Call

Option	Stock
+	—
"Plus" Because Call Premium Was Received	"Minus" Because Stock Was Purchased

These strategies, from a math standpoint, are "Plus - Minus" strategies.

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8f. SYNTHETIC OPTIONS - APPLICATION

Now let's add these to our options chart:

Long Call = Right To Buy	Short Call = Oblig. To Sell
O S — | — Max. Gain = Unlim. Max. Loss = Prem. B/E = Strike + Prem.	O S + | + Max. Gain = Prem. Max. Loss = Unlim. B/E = Strike + Prem.
Long Put = Right To Sell	**Short Put = Oblig. To Buy**
O S — | + Max. Gain = B/E↓ "0" Max. Loss = Prem. B/E = Strike - Prem.	O S + | — Max. Gain = Prem. Max. Loss = B/E↓ "0" B/E = Strike - Prem.

Now, if you have written down this chart at the start of the test, here is how it is useful.

Sample Question: A customer buys 100 shares of ABC stock at $50 and sells 1 ABC Jan 50 Call @ $5 on the same day. This is equivalent to what options position?

Answer: Because the customer received the premium and paid for the stock, this is a "Plus-Minus" strategy.

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Option	Stock
+	−

By looking at the chart, a "+ -" position is created. by either buying the stock and selling a call on that stock; or by simply selling sell a put. So, the equivalent strategy to buying stock and selling a call against that stock is a short put.

Sample Question: A customer sells short 100 shares of ABC stock at $50 and sells 1 ABC Jan 50 Put @ $5 on the same day. This is equivalent to what options position?

Answer: Because the customer received the premium and sold the stock, this is a "Plus-Plus" strategy.

Option	Stock
+	+

By looking at the chart, a "+ +" position is created. by either shorting the stock and selling a put on that stock; or by simply selling a call. So, the equivalent strategy to shorting stock and selling a put against that stock is a short call.

8g. SYNTHETIC STOCK POSITIONS

Synthetic Or "Equivalent" Positions

Instead of combining a stock position and an option position to create a synthetic option, we can also combine two options positions to create a synthetic or equivalent stock position.

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