



TMX

**Montréal
Exchange**



TMX | **Montréal
Exchange**



**Montréal
Exchange**

The Collar Strategy



Toronto Stock Exchange | TSX Venture Exchange | **Montréal Exchange** | Natural Gas Exchange | Montréal Climate Exchange | Boston Options Exchange

Canadian Derivatives Clearing Corporation | TMX Datalinx | Equicom | PC Bond | Shorcan

The Collar Strategy



- Also known as a “hedge wrap”.
- Involves a combination of two strategies:
 - Covered call
 - Protective put



The Collar Strategy



- Ownership of the underlying security
- Sale of a call option with strike price above the price of the underlying security (referred to as “ceiling”).
- Purchase of a put option with strike price below the price of the underlying security (referred to as “floor”).



When To Use



- Concerns of correction.
- Desire to hedge the downside risk associated with the long stock position.
- Long put option.
 - Establishes a minimum exit price.
- Short call option.
 - Reduces the cost of the protective put.



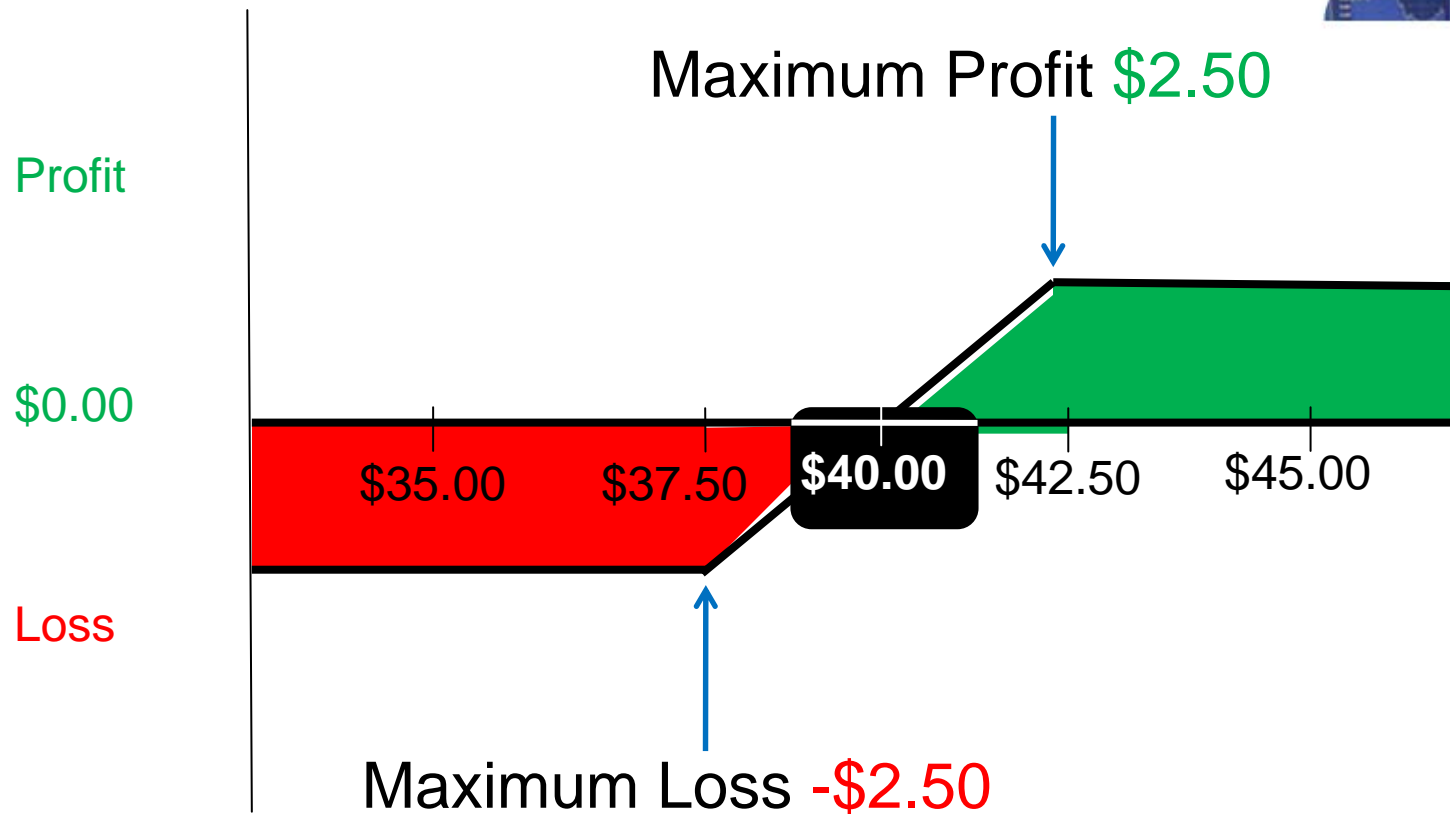
Hedging Stock Example



- Long 100 shares of XYZ at \$40.00.
- Sell 1-month \$42.50 covered call for \$0.25.
- Buy 1-month \$37.50 put for \$0.25.
- Downside risk to \$37.50.
- Upside potential to \$42.50.



Collar Risk Graph



Maximum profit: Call strike “ceiling” – Stock purchase price – Net premium paid
Maximum loss: Stock purchase price – Put strike “floor” – Net premium paid



Collar Performance



Stock Price	Stock P/L	\$42.50 Call P/L	\$37.50 Put P/L	Net Profit P/L
\$50.00	\$10.00	-\$7.25	-\$0.25	\$2.50
\$45.00	\$5.00	-\$2.25	-\$0.25	\$2.50
\$42.50	\$2.50	\$0.25	-\$0.25	\$2.50
\$40.00	\$0.00	\$0.25	-\$0.25	\$0.00
\$37.50	-\$2.50	\$0.25	-\$0.25	-\$2.50
\$35.00	-\$5.00	\$0.25	\$2.25	-\$2.50
\$30.00	-\$10.00	\$0.25	\$7.25	-\$2.50



The Reverse Collar Strategy



- Mirror image of the collar strategy
- Involves a combination of two strategies:
 - Long call
 - Short Put



The Reverse Collar Strategy



- Short the underlying security
- Purchase of a call option with strike price above the price of the underlying security (referred to as “ceiling”).
- Sale of a put option with strike price below the price of the underlying security (referred to as “floor”).



When to use



- Desire to hedge the upside risk associated with the short stock position.
- Long call option
 - Establishes a maximum exit price
- Short put option
 - Reduces the cost of the protective call



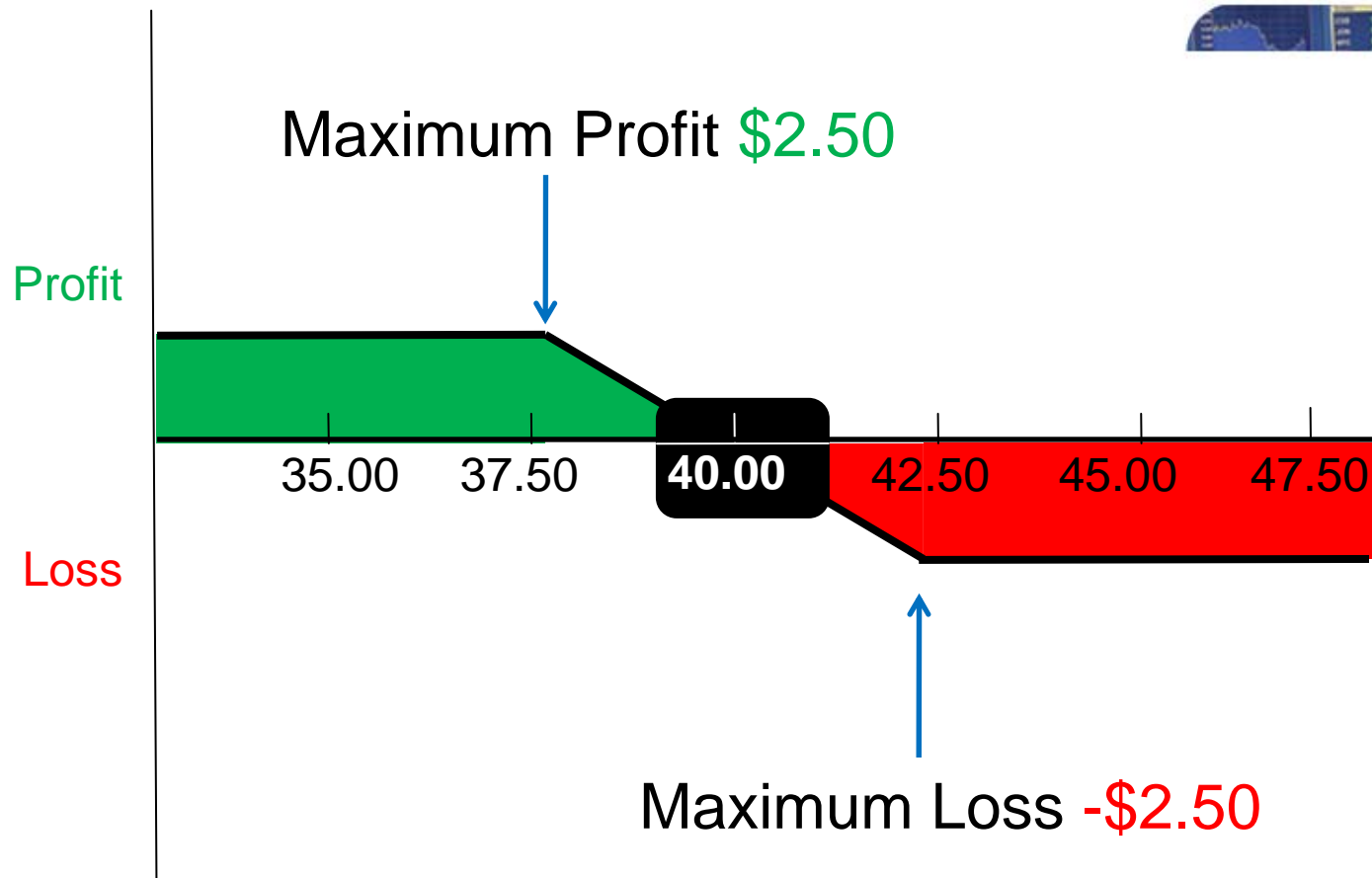
Hedging a Short Stock Example



- Short 100 shares of XYZ at \$40.00.
- Sell 1-month \$37.50 put for \$0.25.
- Buy 1-month \$42.50 call for \$0.25.
- Upside risk is limited to \$42.50.
- Downside potential is \$37.50.



Reversed Collar Risk Graph



Maximum profit: $\text{Short stock price} - \text{Short put strike price} - \text{Net premium paid}$

Maximum loss: $\text{Long call strike price} - \text{Short stock price} + \text{Net premium paid}$



Reversed Collar Performance



Stock Price	Stock P/L	\$42.50 Call P/L	\$37.50 Put P/L	Net Profit P/L
\$50.00	-\$10.00	\$7.25	\$0.25	-\$2.50
\$45.00	-\$5.00	\$2.25	\$0.25	-\$2.50
\$42.50	-\$2.50	-\$0.25	\$0.25	-\$2.50
\$40.00	\$0.00	-\$0.25	\$0.25	\$0.00
\$37.50	\$2.50	-\$0.25	\$0.25	\$2.50
\$35.00	\$5.00	-\$0.25	-\$2.25	\$2.50
\$30.00	\$10.00	-\$0.25	-\$7.25	\$2.50



Cylinder



- The collar strategy when using currency options is referred to as a “cylinder”.
- Canadian investors holding US dollar positions or Canadian exporters are at risk of a depreciating US dollar.
- Canadian importers are at risk of a an appreciating US dollar.



Cylinder – US Dollar Increase



- Importer wishes to hedge against an increase in the US Dollar.
- Purchases USX call options to offset the appreciation of the US dollar.
- Sells USX put options and collects a premium to offset the cost of the calls.
- Applies a strategy resembling the reverse collar.



Cylinder – US Dollar Decrease



- Investor/exporter wishes to hedge against a decrease in the US dollar.
- Purchases put options to offset the depreciation of the US dollar.
- Sells call options and collects a premium to offset the cost of the puts.
- Applies a strategy resembling a collar.



Fixing an Exchange Rate



- Investors and business owners may wish to fix a specific exchange rate.
- A USX cylinder can be applied to lock in a currency exchange rate months in advance.
- This involves the purchase and sale of a call and a put at the same USX strike price.



Cylinder – USD/CAD Increase



- USD/CAD is at 1.0500.
- Importer to make payment in three months.
- Amount due: \$1,000,000.00 USD
- Long 100 3-month calls, 105.00 @ 2.75 cents.
- Short 100 3-month Puts, 105.00 @ 2.50 cents.



Cost of the Cylinder



- Long 100 calls, 105.00 @ 2.75 cents.
 - $100 \times \$275.00 = \text{C}\$27,500.00$ DEBIT
- Short 100 puts, 105.00 @ 2.50 cents.
 - $100 \times \$250.00 = \text{C}\$25,000.00$ CREDIT
- Total cost = $\text{C}\$2,500.00$



Cylinder Performance

US\$1,000,000.00 – 3 months later

USD/CAD	Currency P/L	\$105.00 Calls P/L	\$105.00 Puts P/L	Net Profit P/L
1.1000	-\$50,000	\$22,500	\$25,000	-\$2,500
1.0500	\$0.00	-\$27,500	\$25,000	-\$2,500
1.0000	\$50,000	-\$27,500	-\$25,000	-\$2,500



Results for the Buyer



- Regardless of the fluctuation in the exchange rate, the currency conversion for the US dollar buyer is fixed at 105 or 1.0500 USD.
- The cost to fix the exchange rate for the 3-month period is limited to the net debit of the cylinder.



Cylinder – USD/CAD Decrease



- USD/CAD is at 1.0500.
- Exporter to receive payment in three months.
- Amount due: US\$1,000,000.00
- Long 100, 3-month puts, 105.00 @ 2.85 cents
- Short 100, 3-month calls, 105.00 @ 2.55 cents



Cost of Cylinder



- Long 100 puts, 105.00 @ 2.85 cents.
 - $100 \times \$285.00 = \text{C}\$28,500.00$ DEBIT
- Short 100 calls, 105.00 @ 2.55 cents.
 - $100 \times \$255.00 = \text{C}\$25,500.00$ CREDIT
- Total cost = $\text{C}\$3,000.00$



Cylinder Performance

US\$1,000,000.00 – 3 months later

USD/CAD	Currency P/L	\$105.00 Calls P/L	\$105.00 Puts P/L	Net Profit P/L
1.1000	\$50,000	-\$24,500	-\$28,500	-\$3,000
1.0500	\$0.00	\$25,500	-\$28,500	-\$3,000
1.0000	-\$50,000	\$25,500	\$21,500	-\$3,000



Results for the Seller



- Regardless of the fluctuation in the exchange rate, the currency conversion for the US dollar seller is fixed at 105 or 1.0500 USD.
- The cost to fix the exchange rate for the 3-month period is limited to the net debit of the cylinder.



