



**Montréal  
Exchange**

# Expanding on Alternative Investments



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

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# What is a Futures Contract?



- Futures are contracts to buy or sell a specific product:
  - At a specific price
  - On a specific date
- Zero-sum game – one buyer for every seller.
- If not closed before expiration, both parties of a "futures contract" must fulfill the contract on the settlement date.

# Cash Market vs. Futures



## Cash or Spot Price

## Futures

Not represented by one central location. There is a network of buyers/sellers.

Futures market traded at a central location known as an exchange.

Reflects the value under current market conditions.

Reflects spot price plus the opportunity cost that arises from delayed settlement.

Price reflects immediate settlement and delivery.

Price reflects a “Cost of Carry” such as financing, storage and insurance.

Participants usually assume the risk of counterparty default.

Clearing corporation assumes the risk.

# Pricing



## **Contango** (lower price for shorter timeframe)

- The later expiration months are more expensive to spot price as they are discounting the cost to carry or interest rates.

## **Backwardation** (higher price for shorter timeframe)

- If there is an immediate shortage, the spot price will increase while the longer term prices will be reflecting new available supply in the future and therefore not increase at the same rate.

# Settlement



## Physical Delivery

- The amount specified in the contract is delivered by the seller to the exchange, and by the exchange to the buyer.
- Only a minority are delivered as it is common practice to close the contracts before the expiration date.

## Cash Settlement

- The parties settle by paying/receiving the profit/loss at the expiration of the contract.

# Which Contract Month?



Month	Symbol
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U
October	V
November	X
December	Z

# What Products Trade as Futures?



Continually evolving.

- Commodities
- Foreign Exchange
- Money Markets, Bond Markets and Interest Rates
- Equity Indices
- Individual Stocks
- Specialty Products

# Options vs. Futures



## Options

## Futures

Buyer has the a right, not the obligation to take possession of the underlying

Buyer and seller have an obligation unless the position is closed prior to expiration

Only has a value on expiration if it is “In-The-Money”

Has a value as soon as the price changes in relation to the entry price

Profit or loss not realized until position offset

Position “Marked-To-Market” at the end of every trading day.

Pay a premium

No upfront cost, put up a “performance bond” or “Good Faith Deposit”

# Stock Index Futures



- Stock index futures closely follow the price movement of their respective indices,
- Typically referred to as the “underlying” or “cash” indices.
  - S&P/TSX 60 - Symbol: **SXF**
  - S&P/TSX 60 Mini – Symbol: **SXM**

# S&P/TSX 60 Futures - SXF



## Contract Specifications

- Contract multiplier = \$200.00 X the futures value
- Contract months = March, June, September, December.
- Quoted in points expressed to 2 decimal points.

# SXF Contract Specifications



- Last Trading Day
  - Trading day prior to Final Settlement Day.
- Final Settlement Day
  - 3<sup>rd</sup> Friday of the contract month.
- Cash settled based on the official opening level of the index on the Final Settlement Day

# SXF Trading Hours



- Early Session: 6:00 a.m. to 9:15 am EDT
- Regular Session: 9:30 a.m. to 4:15 p.m. EDT

# S&P/TSX 60 Futures – SXF



Contract multiplier = \$200.00 X the futures value

- Example

Futures value X **\$200** (800.00 X **\$200.00** = **\$160,000.00**)

1 point or tick = .10 therefore a 1 point move = +/- \$20.00

- Example

If the index increases from 800.00 to 800.10 = + **\$20.00**

# S&P/TSX 60 Index Mini - SXM



## Contract Specifications

- Contract multiplier
  - \$50.00 X the futures value
- Contract months
  - March, June, September, December.
- Quoted in index points.

# SXM Contract Specifications



- Last Trading Day
  - Trading day prior to Final Settlement Day.
- Final Settlement Day
  - 3<sup>rd</sup> Friday of the contract month.
- Cash settled based on the official opening level of the index on the Final Settlement Day.

# SXM Trading Hours



- Early Session: 6:00 a.m. to 9:15 am EDT
- Regular Session: 9:30 a.m. to 4:15 p.m. EDT

# S&P/TSX 60 Index Mini - SXM



Contract multiplier = \$50.00 X the futures value

- Example

Futures value X **\$50** (800.00 X **\$50.00** = **\$40,000.00**)

1 point or tick = .10 therefore a 1 point move = +/- \$5.00

- Example


If the index increases from 800.00 to 800.10 = + **\$5.00**

# SXM Directional Trade



- Your view is that the S&P/TSX 60 will drop.
- The index is valued at 800.00
- To trade your view, you could sell 1, **SXM** future.
- Remember each 0.10 will result in +/- \$5.00

# SXM Directional Trade

S&P/TSX 60 VALUE	SHORT SXF P&L
802.50	-\$125.00
802.00	-\$100.00
801.75	-\$95.00
801.50	-\$75.00
801.00	-\$50.00
800.90	-\$45.00
 <b>800.00</b>	<b>0</b>
799.10	\$45.00
799.00	\$50.00
798.50	\$75.00
798.20	\$90.00
798.00	\$100.00

# SXM Hedging



- Investor holds a diversified portfolio.
- Concerned about the short term risk in the markets.
- Looking to reduce exposure to the markets.

# Obstacles



If investor sells:

- Forego dividend income.
- Incur transaction costs in selling.
- Tax implications in selling.

# SXM Hedging Alternative



- Hedging allows investors to maintain all existing positions, receive the dividends, no tax disposition.

# SXM Hedge



- Has a portfolio of \$260,000.00 of Canadian blue chip stocks.
- Looking to hedge risk over a 1-2 month period and elects to use **SXM** Futures.
- To hedge, the investor must SELL or SHORT the futures contract.

# How Many Index Futures to Sell?



- Must determine the BETA of your portfolio.

## BETA

- The amount of variance in the value of a portfolio in comparison to the overall market.
- Beta = 0 security is not at all correlated.
- Beta = 1 security is correlated with the market.
- Beta < 1 security is less correlated.
- Beta > 1 security is more correlated.

# Portfolio Hedge Example

COMPANY	WEIGHT IN PORTFOLIO	BETA
Royal Bank RY	0.10	1.31
Postash Corp POT	0.10	1.2
Encana ECA	0.10	1.1
Barrick Gold ABX	0.10	.6
Manulife Financial MFC	0.10	2.18
Canadian Natural Resources CNQ	0.10	1.78
Goldcorp Inc GG	0.10	.69
Toronto-Dominion Bank TD	0.10	1.46
Bank of Nova Scotia BNS	0.10	1.35
Research In Motion RIM	0.10	2
<b>Average Beta</b>	1.00	1.36

- Assume an investor has a portfolio of \$260,000.00

# How Many Futures to Sell?



- S&P/TSX 60 is at 800
- Portfolio Beta = 1.36
- **\$353,600** ( $\$260,000 \times 1.36$ ) = 8.84  
40,000 (800 X 50)

The investor will sell 8 or 9 SXM contracts to hedge the portfolio.

# Impact of SXM Hedge



S&P/TSX 60 VALUE	Short SXM P&L - 9 Contracts	Portfolio P&L	Net Result
860.00	-\$27,000.00	\$26,520.00	-\$480.00
840.00	-\$18,000.00	\$17,680.00	-\$320.00
820.00	-\$9,000.00	\$8,840.00	-\$160.00
<b>800.00</b>	<b>0</b>	<b>0</b>	<b>0</b>
780.00	\$9,000.00	-\$8,840.00	\$160.00
760.00	\$18,000.00	-\$17,680.00	\$320.00
740.00	\$27,000.00	-\$26,520.00	\$480.00

# Outcome



- Investor reduced exposure to the market without having to close any positions.
- During that time:
  - Investor did not interrupt the dividend stream.
  - Incurred minimal transaction costs.
  - No tax disposition of stock holdings.

# Conversion of SXF SXM



- SXF contracts can be offset with SXM contracts.

Example:

- Investor is short 1 SXF contract.
- Investor can buy 4 SXM contracts at different intervals and offset the contracts on settlement.

# Why Use Futures?



- To fix an anticipated purchase or sale of a commodity or security.
- To hedge a portfolio.
- Trade a directional view
- To capitalize on leverage.

