

**MONTREAL EXCHANGE**

**SCF – S&P/TSX  
Composite™  
Index Mini  
Futures**

Reference Manual



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# Introduction

Retail investor participation in stock markets has grown substantially in recent years. The private investor has become increasingly sophisticated and is now employing a multitude of investment strategies. An increasing number of private investors are beginning to enhance and hedge their portfolios by trading stock index futures.

Stock index futures are basically contracts to buy a basket of stocks, or a stock index, in the future. They usually expire quarterly, and an investor's position is marked-to-market every day. They are cash-settled, so an investor's account is debited or credited at expiration if the position is held until that time.

To make stock index futures trading more affordable, the Montréal Exchange designed a contract that is smaller than the traditional larger-sized stock index futures contracts that institutional investors are benchmarked to. Hence, the Exchange developed the S&P/TSX Composite™ Index Mini Futures (hereinafter "the SCF futures contract") targeted at a wider audience of investors with a contract size that would comfortably fit (mini sized) an investor's portfolio and that allows investors to trade the contract on a regular basis as well. SCF futures contracts provide investors with an opportunity to take advantage of the tools that are used by financial institutions and to exploit attractive opportunities offered by the futures market.

The underlying S&P/TSX Composite™ Index (hereinafter the "composite index") is based upon the price performance of the largest stocks listed on the Toronto Stock Exchange. The composite index is float capitalization weighted, meaning that each individual company's shares influence the index according to the company's market value (that is, the total number of shares outstanding multiplied by the current share price). Therefore, a 10% change in the share price of a company with a large market capitalization would have a greater effect on the level of the index compared to a 10% change in the price of a company with a lower market capitalization.

Typical of all stock index futures contracts, the SCF futures contract is a cash-settled contract. This means that when the futures contract expires, the investor never actually receives or delivers the underlying stocks that are constituents of the index, instead cash is transferred. The amount of cash paid or received is determined by the difference in the level of the index at the time the transaction was originally entered into and its levels at the expiration of the futures contract. This alleviates the inconvenience of physical delivery of the underlying stocks that are constituents of the index, which is both costly and cumbersome to administer.

SCF futures contracts are agreements to buy or sell the value of the futures contract. Specifically, the buyer of a futures contract establishes a long position and the seller of a contract establishes a short position. However, before placing an order to trade an SCF futures contract, investors must post an initial margin or good-faith deposit with their broker—who in turn will post the collateral with the Canadian Derivatives Clearing Corporation (CDCC). As with all futures contracts, the buyer or the seller of the contract is required to deposit only a fraction of the value of the contract (the initial margin) to gain market exposure. Subsequently, all opened futures positions are marked-to-market, based on each day's closing price, with gains and losses settled by a daily cash transfer between the long and short position holders. This transfer of cash is known as variation margin. The CDCC acts as an intermediary in this process and guarantees each counterparty's solvency—thereby eliminating the concern of counterparty risk.

## Why trade the SCF futures contract

Investors can benefit by trading the SCF futures for a number of compelling reasons.

### Efficiency

Trading stock index futures is more efficient compared to buying and selling equity securities in the index as the SCF futures contract provides a fast and cost-effective means to get exposure to the broader market in a single transaction.

### Liquidity

Substantial liquidity with narrow bid/offer spreads as a result of concentrated activity in standardized contracts with broad-based market appeal.

## Flexibility

The ability to employ a variety of trading strategies, such as hedging strategies (to insure a portfolio of stocks against adverse price movements) and spreading strategies (playing one index against another).

Moreover, there are no restrictions for short selling the SCF futures contract to take advantage of a declining market. Hence, investors avoid the complications and costs associated with borrowing stocks in the cash market.

## Leverage

The SCF futures contract requires an initial margin deposit that represents a small percentage of the value of the contract. For example, the investor of an SCF futures contract must put up an initial margin deposit ranging anywhere from 5% to 20% of the value of contract—depending on market conditions—freeing up more capital with index futures compared to stocks.

In addition, spread trades between two different S&P/TSX index futures contracts benefit from significant reductions in margin requirements. Specifically, for an investor interested in trading the spread between blue chip stocks and the broader market—the S&P/TSX 60™ Index Futures (hereinafter “the SXF futures contract”) versus a corresponding number of SCF futures contracts—the Exchange provides a spread credit relief of 80% on the total margin required to be deposited for the two contracts.

## Reduced transaction costs

Lower trading costs with index futures, with no management fees, compared to trading a basket of stocks in the composite index.

# Determining the contract value and the value of one index point for the SCF futures contract

## Contract value

The value of an SCF futures contract is determined by multiplying the current level of the contract by C\$5 (the contract multiplier).

For example, with the SCF futures contract trading at a level of 8,000 index points, the value of one contract would be C\$40,000 (8,000 index points x C\$5 per index point).

## Value of one index point (tick value)

The value of one index point (tick value) is C\$5 per SCF contract.

For example, a move of five ticks in the contract, from 8,000 to 8,005 index points, equals C\$25. A long position would be credited C\$25 and a short position would be debited C\$25.

# The S&P/TSX Composite™ index

The composite index has been the premier indicator of market activity and principal broad market measure for Canadian equity markets since its introduction in 1977. The index covers approximately 95%<sup>1</sup> of the market capitalization for Canadian-based, Toronto Stock Exchange listed companies and is widely recognized as the barometer for the overall stock market performance in Canada. The index serves the basis for numerous sub-indices, which break down the Canadian market by different factors including size, Global Industry Classification

1. The composite index factsheet is available at [http://www2.standardandpoors.com/spf/pdf/index/SP\\_TSX\\_Composite\\_Factsheet.pdf](http://www2.standardandpoors.com/spf/pdf/index/SP_TSX_Composite_Factsheet.pdf).

Standard (GICS®) and income trust inclusion versus non-inclusion. S&P/TSX Canadian indices are calculated and managed by Standard & Poor's and the Toronto Stock Exchange is the owner and distributor of all S&P/TSX equity index data.

The composite index has 220 constituent stocks with a total market capitalization of C\$1.1 trillion (float adjusted market capitalization of C\$941 billion) as at December 31, 2008.

The composite index serves the dual purpose of a benchmark and an investable index for Canadian pension funds and mutual funds. The index is designed to offer the representation of a broad benchmark index while maintaining the liquidity characteristics of narrower indices—making the index ideal for portfolio management and index replication. Approximately C\$38 billion is indexed to the composite index as at December 31, 2008.

The composite index includes both common stocks and income trust units. Constituents of the composite index are also members of either the S&P/TSX Equity indices (the S&P/TSX Equity or the S&P/TSX Equity Completion) or the suite of indices which include income trusts (S&P/TSX Income Trust, S&P/TSX Capped REIT, S&P/TSX Capped Energy Trust, S&P/TSX 60, or S&P/TSX Completion), or both. The composite index is maintained by the S&P/TSX Canadian Index Committee, which comprises a team of seven, including four members from Standard & Poor's, and three from the Toronto Stock Exchange.

## Index methodology

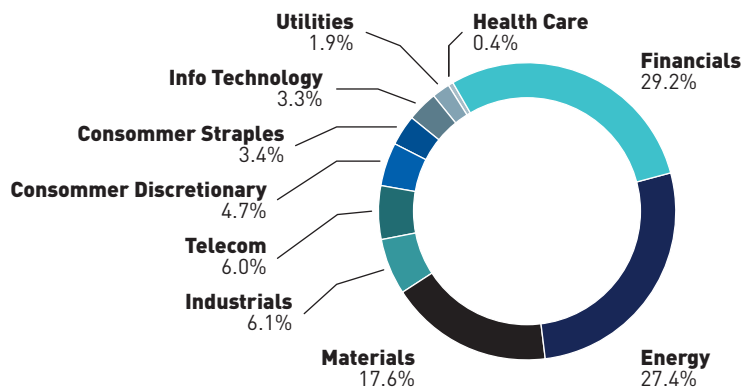
The S&P/TSX Canadian Index Committee follows a set of published guidelines<sup>2</sup> for maintaining the index.

These guidelines provide the transparency required and fairness needed to enable investors to replicate the index and achieve the same performance as the composite index. The Index Committee reviews constituents quarterly to ensure adequate market capitalization and liquidity. Both criteria are assessed using the previous twelve months' worth of data. Quarterly review changes take effect after the close on the third Friday of March, June, September, and December. The weighting of constituents in the composite index is determined by the float adjusted market capitalization of each stock. The number of constituent stocks is a floating number subject to change at each rebalancing date. Every index constituents' float adjustment is reviewed on a quarterly basis.

## Index sector classification and sector weights

The composite index provides a diversified exposure to the different sectors of the Canadian stock market. Constituent stocks of the composite index are classified by the Global Industry Classification Standard (GICS®). These sectors, consistent across all Standard & Poor's indices, are consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, telecommunication services and utilities.

**S&P/TSX Composite Sector Weights**  
(as at December 31, 2008)



Source: Standard and Poor's

2. Complete details of these guidelines, including the criteria for index additions and removals, policy statements, and research papers are available on the Standard and Poor's Web site at [http://www2.standardandpoors.com/spt/pdf/index/SP\\_TSX\\_Canadian\\_Indices\\_Methodology\\_Web.pdf](http://www2.standardandpoors.com/spt/pdf/index/SP_TSX_Canadian_Indices_Methodology_Web.pdf).

## Composite Index Weekly Price Performance



Source: Bloomberg L.P.

# Strategies for the SCF futures contract

## Spreading the SCF futures against the SXF futures

The composite index and the S&P/TSX 60™ Index (hereinafter “the 60 index”) are the two most widely recognized stock indices in Canada.

The composite index has provided investors with a premier indicator of market activity for Canadian equity markets since its launch in 1977. The index captures approximately 95% of the market capitalization for Canadian-based, Toronto Stock Exchange listed companies and is widely recognized as the barometer for the overall stock market performance in Canada making it a popular measure of the Canadian stock market, especially among the media and investors.

The 60 index is the leading large capitalization index for the Canadian stock market and is recognized as the benchmark for institutional investors. Designed to represent leading companies in leading industries, the 60 index covers approximately 73%<sup>3</sup> of Canada’s equity market capitalization.

## How to structure a spread using stock index futures

Market participants trade stock index futures spreads to profit from shifts in relative value among market sectors. A popular strategy that takes advantage of the different index levels and contract multipliers of the SCF and the SXF futures contracts is to set up a spread trade using the two index futures contracts. The spread strategy uses a convention based on the dollar values of the contracts to price the spread and to determine the optimal ratio of contracts to buy and sell.

Trading convention for spreads dictates that one:

1. buys the spread when it is expected to widen, and
2. sells the spread when it is expected to narrow.

In the following spread strategies presented, buying the spread means buying the SXF futures contract and selling the SCF futures contract, and selling the spread means selling the SXF futures contract and buying the SCF futures contract.

3. The 60 index factsheet is available at [http://www2.standardandpoors.com/spi/pdf/index/SP\\_TSX\\_60\\_Factsheet.pdf](http://www2.standardandpoors.com/spi/pdf/index/SP_TSX_60_Factsheet.pdf).

## Strategy 1

An investor believes that Canadian equity markets are due to rally over the next week after a period of prolonged weakness. Specifically, the investor believes that large-cap stocks will outperform the broader market. The investor decides to use index futures contracts to benefit from the high leverage they provide. However, the margin that the investor is required to deposit with a broker to buy or sell one SXF or SCF futures contract is too high given his risk profile. Therefore, the investor uses a spread strategy to play one index off of the other that requires only a fraction of the margin requirement for an outright index futures position. Specifically, the investor buys the spread with the expectations that it will widen by simultaneously buying an SXF futures contract and selling an SCF futures contract.

### STRATEGY 1

#### Buying the spread in anticipation of a widening spread (1:1 spread ratio)

	Action	# of Contracts	60 Index Level (A)	Contract Multiplier (C\$) (B)	Contract Value (C\$) (C) = (A) x (B)	Action	# of Contracts	Composite Index Level (D)	Contract Multiplier (C\$) (E)	Contract Value (C\$) (F) = (D) x (E)	Spread Contract Value (C\$) (C) – (F)
<b>Today</b>	Buy	1	523.30	200	(104,660)	Sell	1	8,695	5	43,475	(61,185)
<b>After 5 days</b>	Sell	1	540.50	200	108,100	Buy	1	8,900	5	(44,500)	63,600
<b>Net Spread</b>					3,440					(1,025)	2,415

Both the SCF and the SXF futures contracts rose during the period. However, the spread widened because the contract value of the SXF futures rose more than the contract value of the SCF futures (3.29% compared to 2.36%, respectively).

In this scenario, the spread strategy resulted in a profit of C\$2,415 on a margin deposit of C\$4,670 for a return on capital of 52% over the five-day period.

## Strategy 2

An investor believes that Canadian equity markets are due to resume their downtrend over the next month after a brief three-week rally. Specifically, the investor believes that large-cap stocks will outperform the broader market. The investor decides to use index futures contracts to benefit from the high leverage futures contracts provide. However, the margin that the investor is required to deposit with a broker to buy or sell one SXF or SCF futures contract is too high given his risk profile. Therefore, the investor uses a spread strategy to play one index off of the other that requires only a fraction of the margin requirement for an outright index futures position. Specifically, the investor sells the spread with the expectations that the spread will narrow by simultaneously selling an SXF futures contract and buying an SCF futures contract.

Both the SCF and the SXF futures contracts fell during the period. However, the spread narrowed because the contract value of the SXF futures fell more than the contract value of the SCF futures (6.65% compared to 6.27%, respectively).

In this scenario, the spread strategy resulted in a profit of C\$4,235 on a margin deposit of C\$4,670 for a return on capital of 91% over the 30-day period.

### STRATEGY 2

#### Selling the spread in anticipation of a narrowing spread (1:1 spread ratio)

	Action	# of Contracts	60 Index Level (A)	Contract Multiplier (C\$) (B)	Contract Value (C\$) (C) = (A) x (B)	Action	# of Contracts	Composite Index Level (D)	Contract Multiplier (C\$) (E)	Contract Value (C\$) (F) = (D) x (E)	Spread Contract Value (C\$) (C) – (F)
<b>Today</b>	Sell	1	523.30	200	104,660	Buy	1	8,695	5	(43,475)	61,185
<b>After 30 days</b>	Buy	1	488.50	200	(97,700)	Sell	1	8,150	5	40,750	(56,950)
<b>Net Spread</b>					6,960					(2,725)	4,235

## Structuring the spread using a spread ratio

Depending on the trader's risk profile, a trader can trade different quantities of each index futures contract when executing a spread strategy. Specifically, a trader must decide on how many contracts of the respective index futures contracts to buy and sell. A spread ratio provides a convenient way to track the spread between the respective indices. For traders who prefer to trade small quantities, trading the spread with a ratio of 1:1 is a reasonable choice. However, for traders that are accustomed to trading size, a ratio with larger quantities for each leg of the spread may be the preferred methodology.

When trading the spread between the SXF and the SCF futures contracts, different contract values must be considered when structuring the trade. Ideally, a trader will structure a spread at the outset using a ratio that reflects contract values that are very similar for both index futures—that is, a spread that is structured at the outset as dollar neutral. This results in a spread with a difference in contract values between the two indices that is close to zero.

To determine an appropriate spread ratio when initiating a spread trade, one divides the contract value of the SXF futures contract by the contract value of the SCF futures contract.

### How to determine a spread ratio that is dollar neutral when executing a spread trade at the outset

Dollar Value of the SXF Futures Contract (C\$) (A) = 104,660

Dollar Value of the SCF Futures Contract (C\$) (B) = 43,475

Spread Ratio (A) / (B) = 2.41 contracts

This indicates that a trader needs 2.41 SCF futures contracts for every one SXF futures contract to structure a spread trade that is dollar neutral at the outset. The spread ratio can be scaled down or up depending on a trader's risk profile. However, scaling down the spread trade using a spread ratio of less than 2.41 will result in a spread that is established at a level substantially different from being dollar neutral at the outset.

Of note, since fractional parts of a futures contract cannot be traded (that is, one cannot buy or sell 0.41 of a futures contract), the spread must be structured in whole contract numbers.

Traders can consider the following three ratio alternatives to structure spread trades between the SXF and SCF futures contracts.

- a. 1:1 ratio = One SXF to one SCF
- b. 2:5 ratio = Two SXF to five SCF
- c. 5:12 ratio = Five SXF to twelve SCF

## Structuring the spread with a spread ratio that is dollar neutral (5:12 spread ratio)

### Strategy 3

Based on current index levels and contract values of the SXF and SCF futures contracts, a trader establishes a dollar neutral spread trade using a spread ratio of 5:12 with the expectation that the spread between the two contracts will widen with the SXF futures contract outperforming the SCF futures contract. The trader uses a spread ratio of five SXF futures contracts to twelve SCF futures contracts so that the difference between the contract values of the two indices is close to zero (that is, with a spread trade that is dollar neutral at the outset). Consequently, the trader buys the spread by simultaneously buying five SXF futures contracts and selling twelve SCF futures contracts.



### STRATEGY 3

#### Dollar neutral spread strategy using a 5:12 spread ratio

	Action	# of Contracts	60 Index Level (A)	Contract Multiplier (C\$) (B)	Contract Value (C\$) (C) = (A) x (B)	Action	# of Contracts	Composite Index Level (D)	Contract Multiplier (C\$) (E)	Contract Value (C\$) (F) = (D) x (E)	Spread Contract Value (C\$) (C) – (F)
<b>Today</b>	Buy	5	523.30	200	(523,300)	Sell	12	8,695	5	521,700	(1,600)
<b>After 30 days</b>	Sell	5	540.50	200	540,500	Buy	12	8,900	5	(534,000)	6,500
<b>Net Spread</b>					17,200					(12,300)	4,900

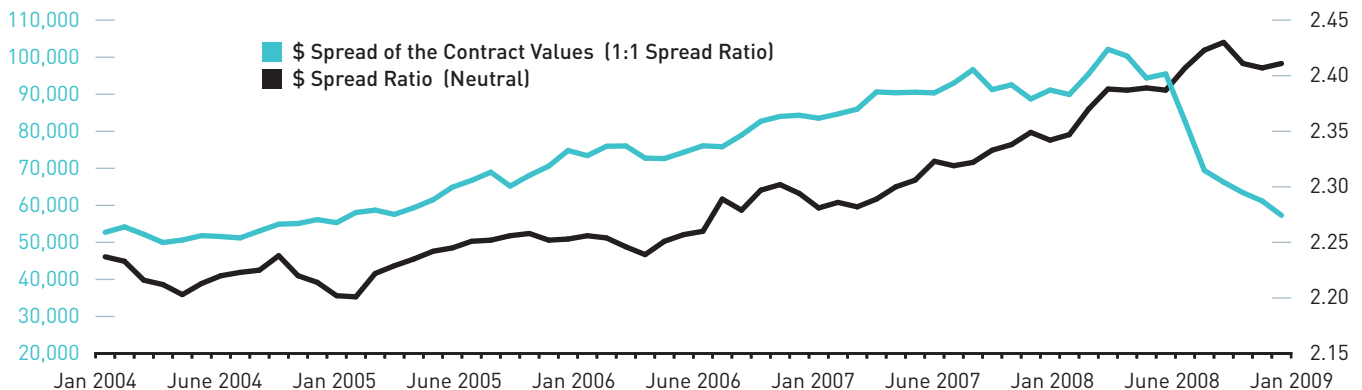
In this scenario, the spread strategy resulted in a profit of C\$4,900 on a margin deposit of C\$32,800 for a return on capital of 15% over the five-day period. In contrast, had the trader chosen to take a position in the market by executing only one leg of the spread (that is, taking an outright position in either the SXF futures contract or the SCF futures contract), the margin required to be deposited by the broker would be one of the following:

- C\$83,000 for five SXF futures contracts (C\$16,600 per contract); or
- C\$81,000 for twelve SCF futures contracts (C\$6,750 per contract).

The advantage of using spreads to gain exposure to the stock market is that the investor is required to deposit only a fraction of the margin with the broker for an outright position in multiple index futures contracts—thus freeing up a large amount of capital.

#### Historical Performance

(Spread of the notional contract values of the sxf and scf futures contracts using a 1:1 spread ratio that is not dollar neutral and spread ratio required for the spread trade to be dollar neutral at the outset)



Source: Montréal Exchange Research Department

#### Spread margin requirements

The Montréal Exchange's clearing house, the Canadian Derivatives Clearing Corporation (CDCC), offers investors spread credit margin relief for spread trades between two different stock index futures contracts.

Specifically, the Exchange offers a spread credit rate of 80% for a spread established between the SXF and the SCF futures contracts. Therefore, the margin required to be deposited by an investor for a spread would only be 20% of the margin required for an outright long or short position for one index futures contract.

#### How to calculate spread margins

Traders can consider the following three spread ratio alternatives to structure spread trades between the SXF and the SCF futures contracts.

- 1:1 ratio = One SXF to one SCF
- 2:5 ratio = Two SXF to five SCF
- 5:12 ratio = Five SXF to twelve SCF

The margin required to be deposited for any one of the three spread ratios alternatives listed above can be calculated as follows:

### Margin required with a 1:1 spread ratio

Spread Strategy	# of Futures Contracts	Outright Margin (per Contract, C\$)	Outright Margin Total (C\$)
60 Index	1	16,600	16,600
Composite Index	1	6,750	6,750
<b>Total Margin - Outrights</b>			23,350

### Spread Credit Rate of 80%

	# of Futures Contracts	80% Credit Rate (per Contract, C\$)	Spread Margin
60 Index	1	3,320	3,320
Composite Index	1	1,350	1,350
<b>Total Margin - Spread</b>			4,670

### Margin required with a 2:5 spread ratio

Spread Strategy	# of Futures Contracts	Outright Margin (per Contract, C\$)	Outright Margin Total (C\$)
60 Index	2	16,600	33,200
Composite Index	5	6,750	33,750
<b>Total Margin - Outrights</b>			66,950

### Spread Credit Rate of 80%

	# of Futures Contracts	80% Credit Rate (per Contract, C\$)	Spread Margin
60 Index	2	3,320	6,640
Composite Index	5	1,350	6,750
<b>Total Margin - Spread</b>			13,390

### Margin required with a 5:12 spread ratio

Spread Strategy	# of Futures Contracts	Outright Margin (per Contract, C\$)	Outright Margin Total (C\$)
60 Index	5	16,600	83,000
Composite Index	12	6,750	81,000
<b>Total Margin - Outrights</b>			164,000

### Spread Credit Rate of 80%

	# of Futures Contracts	80% Credit Rate (per Contract, C\$)	Spread Margin
60 Index	5	3,320	16,600
Composite Index	12	1,350	16,200
<b>Total Margin - Spread</b>			32,800

Note: Margin requirements as at February 20, 2009 based on the value of one SXF futures contract of C\$98,540, and the value of one SCF futures contract of C\$41,354. The Montréal Exchange, in collaboration with the CDCC, determines the margin requirements for all futures contracts. Margin requirements are updated monthly or when justified by market conditions. Margin requirements are published monthly on the Montréal Exchange Web site.

# Hedging a portfolio of small-cap Canadian stocks

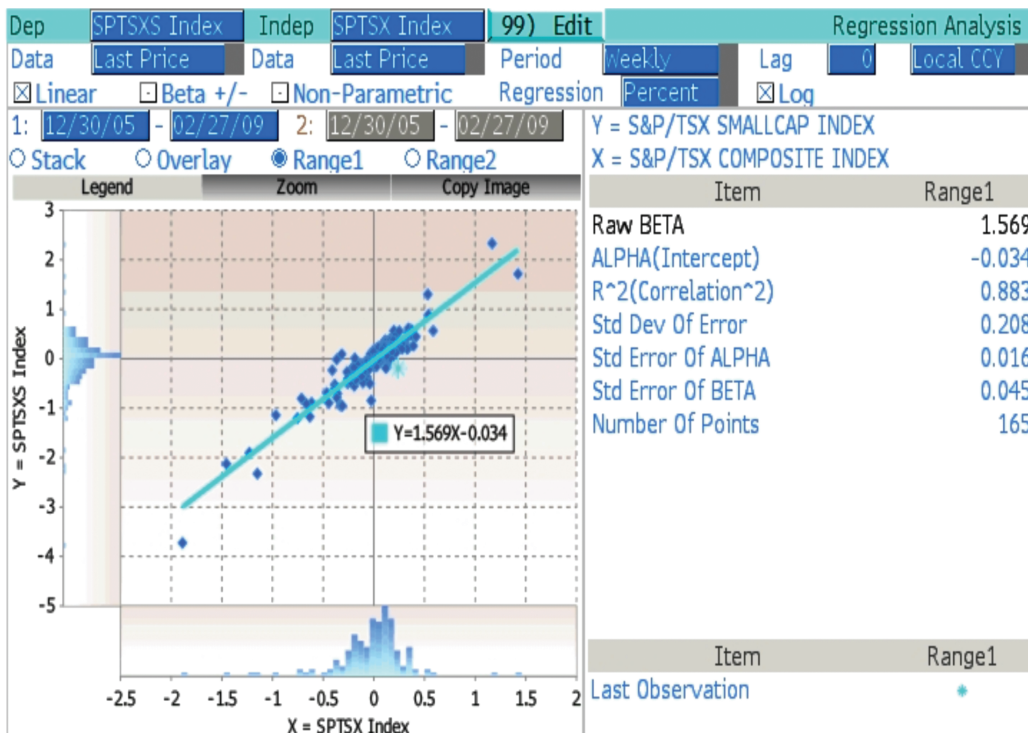
An investor holds a portfolio comprised of well-diversified small-cap Canadian stocks with a total value of C\$2,500,000. Since the investor expects considerable uncertainty in the Canadian equity markets in the coming months, the investor wants to reduce the risk of the portfolio without incurring the transaction costs of selling any part of the portfolio and for tax implications. However, the investor does not want to risk relinquishing the potential for a considerable price appreciation in the portfolio should the market continue to rise. Hence, the investor decides to use a low cost and efficient strategy by hedging (to insure) 50% of the portfolio using stock index futures.

The SCF futures contract is trading at a level of 8,180 index points and one index point is worth C\$5 (the contract multiplier).

Based on data gathered by the investor showing that the composite index will be closest in terms of correlation to a portfolio of small-cap Canadian stocks, the investor decides to use SCF futures contracts to hedge the portfolio.

In addition, the investor obtains data confirming that the portfolio of small-cap stocks has a beta (sensitivity to the market) of 1.57 relative to the composite index.

1) Edit		2) Actions			S&P/TSX INDEX MATRIX				
12/31/2005	-	02/27/2009	Weekly	Calculation	R2	Local CCY			
R2 Matrix (8 Rows x 8 Columns)									
Security	TSX	TSX 60	MID	SMALL	GOLD	FIN	ENGY	IT	
1) TSX	1.000	0.993	0.944	0.875	0.152	0.602	0.848	0.271	
2) TSX 60	0.993	1.000	0.903	0.827	0.144	0.619	0.830	0.283	
3) MID	0.944	0.903	1.000	0.932	0.156	0.522	0.814	0.228	
4) SMALL	0.875	0.827	0.932	1.000	0.182	0.418	0.779	0.186	
5) GOLD	0.152	0.144	0.156	0.182	1.000	0.009	0.167	0.000	
6) FIN	0.602	0.619	0.522	0.418	0.009	1.000	0.365	0.258	
7) ENGY	0.848	0.830	0.814	0.779	0.167	0.365	1.000	0.107	
8) IT	0.271	0.283	0.228	0.186	0.000	0.258	0.107	1.000	



51) Regression 52) Spread 53) Ratio 54) Correlation  
 Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2009 Bloomberg Finance L.P.  
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The investor calculates the number of SCF futures contracts required to hedge 50% of the portfolio of small-cap Canadian stocks as follows:

$$\text{Number of Futures} = \frac{\text{Value of Exposure}}{\text{Value of Futures Contract}}$$

$$\text{Number of Futures} = \frac{-\text{Degree of Hedge} \times \text{Portfolio Value}}{\text{Index Futures Level} \times \text{Contract Multiplier}} \times \text{Beta}$$

$$\text{Number of Futures} = \frac{-0.50 \times \$2,500,000}{8,180 \times 5} \times 1.57$$

$$\text{Number of Futures} = -48 \text{ contracts}$$

Hence, the investor needs to sell 48 SCF futures contracts to hedge 50% of the portfolio of small-cap Canadian stocks.

## Index arbitrage: deviations from fair value of the SCF futures

A trader monitors the level of the composite index at 8,378.70 index points. The fair value and the actual trading level of the SCF futures contract is 8,275.60 index points. Ahead of an important central bank announcement, the SCF futures contract rises abruptly to 8,300.00 cutting through several large stop buy orders, while the underlying index remains unchanged at 8,378.70. As a result, the SCF futures contract is trading 24.40 points above its theoretical price.

	Spot Index Level	Futures (Actual Trading Price)	Theoretical Futures Price	Fair Value	Dividends (in Index Points)
Composite index	8,378.70	8,300.00	8,275.60	-103.10	125.02
Risk free rate			0.77%		
Days to expiration of the SCF futures contract			124 days		

Source: Montréal Exchange Research Department

To profit from the overpriced SCF futures contract, the trader borrows funds to finance an investment in the underlying stocks of the composite index and sells the overpriced SCF futures. The trader decides to take advantage of the mispriced futures by selling 75 SCF futures contracts at 8,300.00 and simultaneously buying a basket of stocks that are constituents of the composite index with their corresponding index weighting at a cost reflecting the index spot level of 8,378.70 index points. The trade is carried until the expiration of the SCF futures contract when the trade is unwound as follows:

### Cash leg of the arbitrage trade

With the index levels of the composite spot index and SCF futures converging at 8,525.00 index points at expiry, the trader sells back the composite index basket at a the spot level of 8,525.00 for a profit of 249.40 index points (8,525 minus the fair value of 8,275.60). The fair value of the index reflects the cost of buying the basket of composite index stocks (at a cost that reflects the original index level of 8,378.70) less the cost of carrying the stocks until the expiration of the futures contract 124 days later (103.10 index points).

### Futures leg of the arbitrage

The SCF futures contract is cash settled at expiry at a level of 8,525.00 index points, for a loss of 225 index points.

### Profit/loss of the arbitrage trade

Hence, the realized profit is 24.40 index points, reflecting the gain of 249.40 index points on the cash basket (cash leg of the trade) and a loss of 225 index points on the index futures (futures leg of the trade). Since each index

point for an SCF futures contract is worth C\$5 and the number of futures contracts traded as part of the cash-and-carry arbitrage strategy is 75 contracts, the trader realizes a profit of C\$9,150 (24.40 index points x C\$5 per index point x 75 contracts) excluding trading costs.

### Profit / Loss from the Combined Cash Leg and Futures Leg of the Arbitrage Trade

CASH-AND-CARRY TRANSACTION	Amount (in Index Points)	Remarks
Gain on the cash leg of the arbitrage trade	249.40 index points	
Loss on the futures leg of the arbitrage trade	225.00 index points	
Net gain on the combined cash leg and futures leg of the arbitrage trade	$249.40 - 225.00 = 24.40$ index points	Difference between the gain on the cash leg of the arbitrage trade and the loss on the futures leg of the arbitrage trade.

### Cash Leg of the Arbitrage Trade

BASKET OF COMPOSITE INDEX STOCKS TRANSACTION	Amount (in Index Points)	Remarks
Purchase basket of composite index stocks	8,378.70 index points	Borrow funds to finance the purchase of the basket of stocks at the spot level of the composite index
Financing costs until the expiration of the SCF futures contract	$8,378.70 \times (0.0077 \times 124/365) = 21.92$ index points	Financing costs to fund the purchase of the basket of stocks: Short-term financing rate x Number of days/365
Dividends received	125.02 index points	Dividend income received from the basket of composite index stocks during the holding period
Cost of the cash-and-carry trade (theoretical fair value)	$8,378.70 + 21.92 - 125.02 = 8,275.60$ index points	Investment + Financing – Income
Sale of the basket of composite index stocks 124 days later	8,525.00 index points	Unwinding of the cash leg of the trade at the spot level of the composite index 124 days later
Gain / Loss Cash leg of the arbitrage trade	$8,525.00 - 8,275.60 = 249.40$ index points	Proceeds from the sale of the basket of stocks at the expiration of the SCF futures contract less the costs incurred to purchase the stocks and hold them until the expiration of the SCF futures contract

### Futures Leg of the Arbitrage Trade

INDEX FUTURES TRANSACTION	Amount (in Index Points)	Remarks
Sell SCF futures contract	8,300.00 index points	Sell overpriced SCF futures contract that is priced at 24.40 index points above its theoretical price
Buy SCF futures contract	8,525.00 index points	Unwinding of the futures leg of the arbitrage trade at the cash settlement price of the SCF futures contract at expiration 124 days later
Gain / Loss Futures leg of the arbitrage trade	$8,300.00 - 8,525.00 = 225.00$ index points	Difference between the initial futures position and the offsetting futures position

## Advantages of exchange-traded products

The Montréal Exchange offers a complete index product line that will allow you to implement any of the above strategies. When considering these alternative venues, investors should fully appreciate that the exchange mechanism offers some unique advantages. The clearing corporation's rigorous margining system, which settles cash flow and obligations on a daily basis, is the primary safeguard that ensures that profitable positions will, in fact, realize the gains that they are due. Because the clearing corporation effectively serves as the buyer to all sellers and the seller to all buyers, the risk of counterparty default is eliminated.

Aside from the credit risk considerations, the concentration of trading activity in standardized exchange contracts generally translates to better liquidity, tighter bid-ask spreads, lower transaction costs and unquestionably greater price transparency than will be the case with the over-the-counter alternatives.

# Canadian Derivatives Clearing Corporation (CDCC)

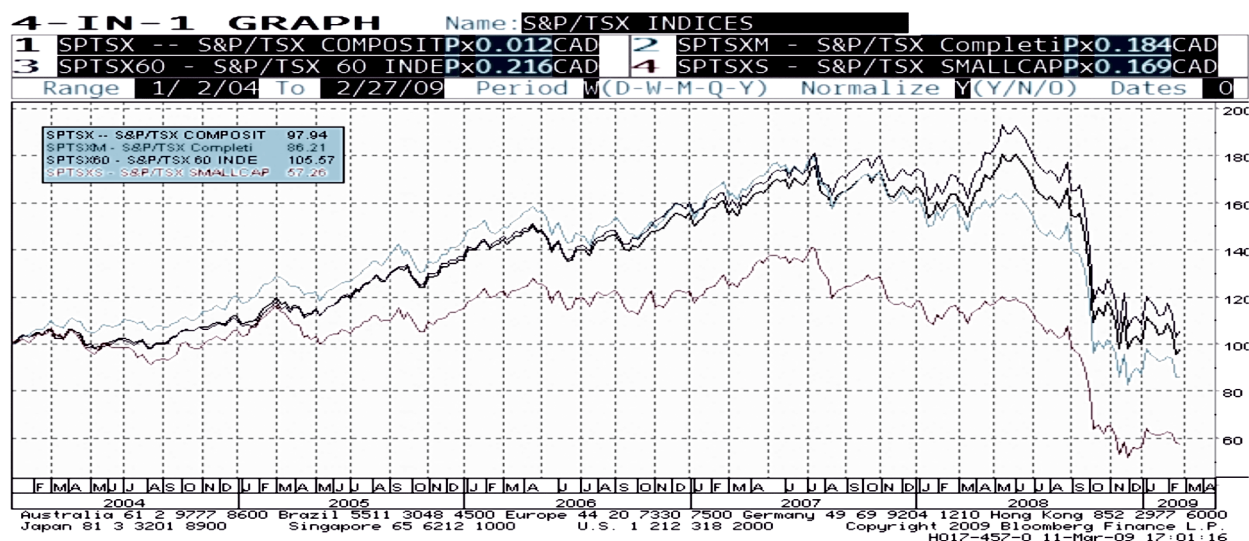
The Canadian Derivatives Clearing Corporation is the issuer, clearing house and guarantor of exchange-traded derivative contracts listed on the Montréal Exchange. The CDCC also guarantees all over-the-counter (OTC) products that are cleared through its Converge clearing service.

The CDCC requires each member to maintain margin deposits with the clearing house in order to cover the market risk associated with each participant's position. The assessment of this risk is based on a set of well-defined criteria established by the clearing house. Margins are collected daily or more frequently during periods of market volatility.

As a clearing house for exchange-traded derivative instruments and Converge products, the CDCC ensures the integrity and stability of the derivatives market through its guarantee. The CDCC provides stability to the market place by assuming the derivative related obligations of a defaulting member towards counterparty clearing members. To ensure its ability to fulfill its obligations under this guarantee, the Corporation maintains a rigorous risk management process.

# Annex 1: Historical index data

## S&P/TSX Indices - Relative Performance



## Correlation Matrix of Benchmark World Equity Indices Based on Weekly Returns

From December 30, 2003 to February 27, 2009

SECURITY	S&P/TSX Composite	S&P 500	Dow Jones Industrial Ave.	Nasdaq 100	DJ Euro Stoxx 50	FTSE 100	DAX	Nikkei 225	S&P/ASX 200
S&P/TSX Composite	100%	79%	74%	70%	78%	81%	76%	68%	72%
S&P 500	79%	100%	98%	90%	86%	86%	87%	71%	67%
Dow Jones Industrial Ave.	74%	98%	100%	86%	85%	84%	85%	70%	63%
Nasdaq 100	70%	90%	86%	100%	76%	73%	78%	65%	59%
DJ Euro Stoxx 50	78%	86%	85%	76%	100%	94%	97%	76%	73%
FTSE 100	81%	86%	84%	73%	94%	100%	91%	74%	75%
DAX	76%	87%	85%	78%	97%	91%	100%	76%	69%
Nikkei 225	68%	71%	70%	65%	76%	74%	76%	100%	75%
S&P/ASX 200	72%	67%	63%	59%	73%	75%	69%	75%	100%

Source: Bloomberg L.P.

## Correlation Matrix of S&P/TSX Canadian Indices Based on Weekly Returns

From December 31, 2005 to February 27, 2009

SECURITY	TSX	TSX 60	Mid	Small	Gold	Fin	Energy	IT
TSX	100%	100%	97%	94%	38%	78%	93%	54%
TSX 60	100%	100%	95%	92%	37%	79%	92%	55%
Mid	97%	95%	100%	97%	40%	73%	91%	50%
Small	94%	92%	97%	100%	40%	67%	89%	45%
Gold	38%	37%	40%	40%	100%	-11%	39%	5%
Fin	78%	79%	73%	67%	-11%	100%	63%	52%
Energy	93%	92%	91%	89%	39%	63%	100%	36%
IT	54%	55%	50%	45%	5%	52%	36%	100%

Source: Bloomberg L.P.

# For more information

Please contact Montréal Exchange if you have any additional questions or require further clarification.

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