MONTRÉAL EXCHANGE

SXF S&P/TSX 60 Index Standard Futures

TMX THE FUTURE IS YOURS TO SEE.

Canadian Index Derivatives – Trading the S&P/TSX 60 Index Standard Futures (SXF)

The SXF is the benchmark derivative product, listed at the Montréal Exchange, for investors trading and hedging the Canadian equity market. This future enables participants to acquire exposure (either long or short) to the entire S&P/TSX 60 Index in a **single, cost effective transaction.** The S&P/TSX 60 Index is a capitalization-weighted index of the 60 largest and most liquid stocks listed on the TSX, measuring some $1.75 trillion of the market capitalization of listed securities in Canada during 2018. The S&P/TSX 60 addresses the needs of investment managers who require a portfolio index of the large-cap market segment of the Canadian equity market.[1]

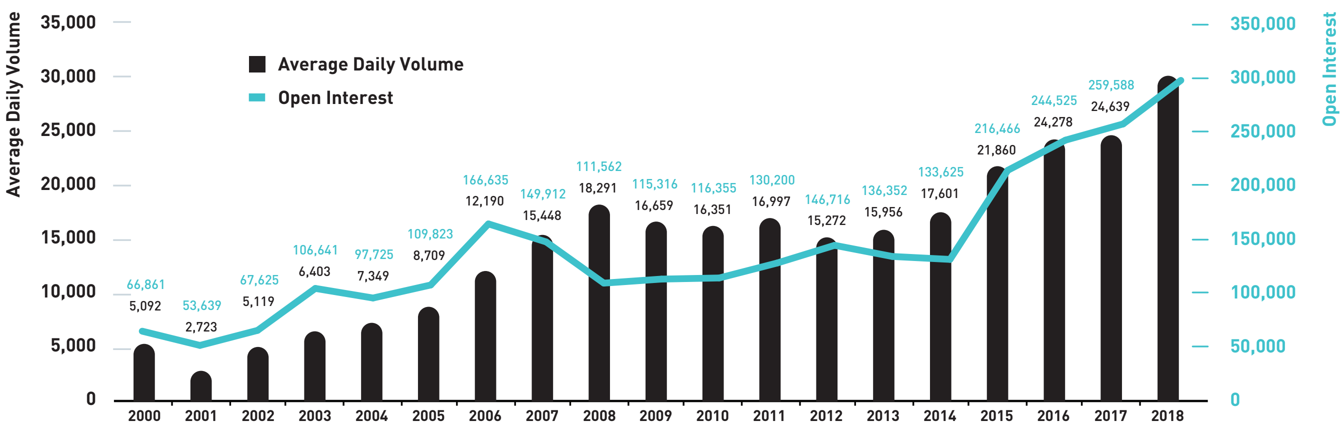
Index futures are instruments that institutional investors use to hedge exposure, overlay cash and facilitate allocation shifts. The market value of the SXF futures contract is equivalent to its current value multiplied by C$200.

The Average daily volume (ADV) of SXF during 2018 was over 30,000 contracts, representing an ADV of approximately C$5.5 billion in notional value.

SXF ADV and Open Interest (OI) have steadily grown over the last 18 years. The year-over-year increase in ADV for 2018 was 23%. OI has also seen a year-over-year increase of 15%.

FIGURE 1

SXF Average Daily Volume & Open Interest (2000-2018)



Over the last 10 years, the SXF market has clearly exhibited steady growth in the dollar value traded as a percentage of the index constituents' cash market. SXF notional value traded grew from C$1.125 trillion in 2017 to C$1.40 trillion in 2018, representing an increase of 24%; whereas the sum of value traded of S&P/TSX 60 constituents across all Canadian equity marketplaces grew from C$1.496 trillion in 2017 to C$1.575 trillion in 2018, representing an increase of 5%.

1. http://ca.spindices.com/indices/equity/sp-tsx-60-index

10 reasons to trade SXF

REASON #1

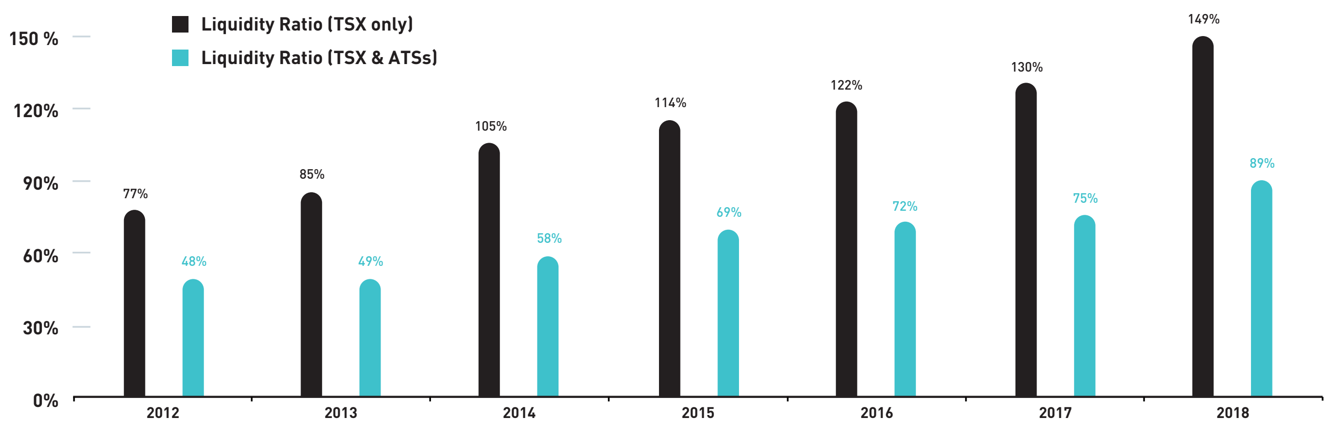
Gain exposure to the Canadian stock market

Excellent Economic Fundamentals

According to Forbes, Canada ranks amongst the top 10 countries for business[2], leading G7 countries in long-term real GDP growth between 2008 and 2017[3]. The Canadian economy has boasted one of the strongest job creation records within the G-7 since the credit crisis; four credit rating agencies: Moody's Investors Service, Fitch Ratings, Standard & Poor's and DBRS have all reaffirmed their top ratings for Canada.[4] With the world's 2nd most stable and secure banking system ranking according to the World Economic Forum[5], investing in Canada makes sense. SXF futures contracts can be used to synthetically create or increase Canadian market exposure of a portfolio. Trading index futures can effectively capture value-added opportunities.

FIGURE 2

Liquidity Ratio (SXF vs S&P/TSX 60)
$Value Traded of SXF as a percentage of $Value Traded on the TSX (only) Cash Market and TSX - ATSs Cash Market



Synthetic index replication using futures contracts has proven to be a very cost-effective and cash-efficient vehicle for obtaining equity market exposure, facilitating the replication of the equity index performance. There is no need to process corporate actions, no adjusting the portfolio for changes in market capitalization and index composition, and no re-investing of dividends to achieve a fully invested portfolio. Not buying all the underlying stocks means you don't receive dividends, but, not spending that money means you earn "carry," and that money can also be invested.

Steps:

1. Post the necessary margin and invest the remaining cash in money market instruments.
2. The return on futures will produce the equivalent of an index return less the financing cost.
3. Returns generated from the futures and money market instruments will replicate the index value.
4. Roll the position if necessary.

Clients implementing synthetic indexing have further benefited from competitive roll costs resulting in superior returns relative to passive indexing in the cash market. Historically, the roll on SXF futures contracts has traded at a discount to fair value, offering a "cheap" source of market exposure. More recently, due to the historical low level in Bank of Canada's rate and strong dividend payments across the S&P/TSX 60 constituents, SXF has presented a positive carry, providing a net benefit beyond price movements.

2. Source: https://www.forbes.com/best-countries-for-business/list/
3. Source : https://www.international.gc.ca/economist-economiste/assets/pdfs/invest/invest_investir_ENG.pdf
4. Source : https://tradingeconomics.com/canada/rating
5. Source : http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf

REASON #2

Provide hedging or insurance protection for a stock portfolio in a falling market / Maintain stock portfolio value during a market correction

> ...stock index futures and options "provide economic value to their users. By enabling pension funds and other institutional users to hedge and adjust positions quickly and inexpensively, these instruments have come to play an important role in portfolio management."
> - Alan Greenspan [6]

As an alternative to options, you can hedge an equity portfolio, when anticipating a decline in the market, by short selling stock index futures. Often used by institutional investors when the market direction is uncertain or volatile to offset downturns, it is a dynamic hedging strategy that protects degradation of the portfolio value, much like buying index put options.

If a market correction is predicted once you have compiled a solid stock portfolio for long-term investing, and you don't necessarily want long term "insurance" but rather short-term protection, you can sell SXF just to weather the dip.

Covering exposure by selling SXF allows you to generate profits from a fall in the futures market, thereby offsetting any losses in the cash market. By holding SXF until the correction is over, you can still accrue dividends on your portfolio stocks. Initiating a short SXF position helps protect a portfolio without unwinding any equity positions. To determine how many futures contracts to short, you would use the following formula:

$$\#\ \text{SXF} = \frac{\text{Value of equity portfolio x ßeta}}{\text{SXF current value x C\$200}}$$

REASON #3

Cash equitization

Clients can also "equitize" cash by trading index futures in order to fully invest in the equity markets at a minimal cost.

If there is a portion of a portfolio left unallocated (uninvested), "equitize" portfolio cash balances (excess cash) using SXF: buy SXF contracts in the notional principal amount of the uninvested cash, thereby increasing the portfolio's returns on cash by increasing its market exposure.

The benefits of low fees, good liquidity, transparency, credit/counterparty risk management meets an investor's cash management needs. By overlaying an SXF strategy, one can get return on cash that tracks the index. They are more advantageous than asset swaps because of the freedom to exit the position at any time on the listed open market when the cash is needed for full allocation, and there is no counterparty risk. This is especially conducive for institutions with long investment horizons, such as pension funds, which need to keep their total portfolio's performance in line with the fund's broad allocation decisions. This brings performance of the overall portfolio up to 100% of targeted equity allocation even if you want to reduce equity exposure. Otherwise cash will likely underperform equities. Therefore, equitization strategies can significantly reduce/eliminate cash drag on overall performance without interfering with the core strategic position and impacting the portfolio.

REASON #4

Achieve leveraged returns

A relatively small initial outlay of margin controls a large amount of capital. A small change in the index level would produce a significantly larger percentage gain on the SXF if correct about the market's direction.

6. Financial Market Regulatory Reform, Part II: Hearings before the Subcomm. on Telecommunications and Finance of the House Comm. on Energy and Commerce

REASON #5

Add flexibility, transparency...subtract counterparty risk

A major advantage of the index futures markets is the flexibility to buy and sell in a liquid, transparent market. The amount of margin required to sell futures is the same as buying, and there are no short selling restrictions. Plus, in addition to index futures, you can trade SXO (S&P/TSX 60 index options), increasing the possible intra-group strategies needed to succeed in any market condition.

SXF are centrally cleared at the Canadian Derivatives Clearing Corporation (CDCC), a wholly-owned subsidiary of the Montréal Exchange. CDCC's role is to ensure the integrity and stability of the market it supports by crediting and debiting buyer / seller accounts every day according to the variation between the current day and previous day's settlement price.

REASON #6

Efficient beta

Futures are better beta solutions thanks to high daily notional trading, no management fees and capital efficiency. Managers wishing to decrease (increase) portfolio beta in anticipation of a bear (bull) market can apply derivatives to reduce risk ahead of adverse market conditions. Index futures, such as SXF, can be used to adjust portfolio beta without affecting the portfolio holdings.

Portfolio beta adjustment
The formula for determining the # of SXF contracts to adjust the value/beta of an equity portfolio is:

$$\#\ \text{SXF} = (\text{target } \beta\text{eta} - \text{current } \beta\text{eta}) \times \frac{(\text{value of equity portfolio})}{\text{SXF current value} \times \text{C\$200}}$$

A positive (negative) number implies buying (selling) that number of SXF.

REASON #7

Trades cheaper than ETF / Low transaction costs

Trading futures lets you capitalize on stock market movements for a lower price. The bid/ask spread on the XIU, Canada's leading ETF on the S&P/TSX 60 index, is $0.01CAD, or 4.3 bps; 4.3 bps translates into 4 SXF ticks. Recently, trading the SXF in lieu of the equivalent ETF is approximately 40 bps cheaper. Not to mention that it takes only 1 SXF contract to be the equivalent in notional value as almost 8,000 ETF shares creating a significant difference in transaction fees. In particular, trading the ETF becomes less efficient when the trading horizon is short; commissions and the bid/ask spread of ETFs can add additional costs to the transaction.

REASON #8

Liquidity / Rebate programs / Fee caps

The SXF market is highly liquid with an average bid-ask spread of 0.10 index points during 2018; which is equivalent to the minimum tick value.

SXF clients who meet certain requirements of eligibility may also apply for the MX Liquidity Provider Rebate Program. Terms of the program and fee rebates may be found at
https://www.m-x.ca/f_publications_en/mx_rebate_volume_form_en.pdf
and
https://www.m-x.ca/f_publications_en/mx_rebate_volume_program_table_en.pdf.

Bringing more business to the listed market enhances transparency and reduces counterparty risk. A tight and resilient SXF market will attract greater participation from institutional clients by facilitating the timely and competitive execution of large transactions.

REASON #9

Change asset allocation / Portfolio rebalancing

If the stock market has risen and created an over-allocated equity asset position, sell SXF to rebalance your portfolio and bring it back in line with the target asset allocation. Or, manage asset allocation by offsetting undesired/augment desired exposures. The alternative is to liquidate and rebalance equity assets, which is expensive and time consuming.

Asset rebalancing approaches, based on risk, uses index futures to ensure that exposure is managed in the interest of keeping the portfolio volatility at target levels.

REASON #10

Convenience and ease in trading SXF

The SXF market is open for the:

- Early session between 2:00 a.m. and 9:15 a.m. (ET), and
- Regular session between 9:30 a.m. and 4:30 p.m. (ET).

Basis Trades on Close: Regular session 9:30 a.m. to 3:30 p.m. (ET)

The SXF futures can also be traded via several wholesale facilities when executing large transactions:

Basis Trade on Close (BTC)

- The Basis Trade on Close (BTC) functionality allows participants to trade the future at a price equivalent to the official close of its underlying cash market plus a predetermined agreed-upon price differential (positive or negative) known as “the basis”.
- BTC provides the possibility to buy and sell S&P/TSX 60 index futures or share futures using the market end-of-day closing price of the underlying as a reference price.
- BTC combines the advantages of a market on close type of order with the hedging capacity of index futures or share futures contracts in a unique functionality.

Cross Trading

- Intentionally execute two matching orders of opposite sides, originating from the same approved participant, at a pre-negotiated price, even benefitting from the zero-second crossing facility for index options.
- Maintain the integrity of the central limit order book: cross trades must be executed between the prevailing bid and offer.

Exchange for Physical Transactions (EFPs)

- Swap exposure in the futures market for offsetting exposure in the underlying cash market.
- EFPs preserve the basis relationship of a cash commodity trade, by executing both the cash and futures legs in one transaction, at an agreed upon price differential (basis) so as to eliminate the risk of price movements between transaction executions.
- EFPs allow clients to avoid incurring additional margin obligations or to cover market positions against overnight price changes, and can be executed after the futures market has closed, all while keeping clearing, margin and delivery obligations the same as standard trades.

Exchange for Risk Transactions (EFRs)

- Swap a futures market position for an OTC market position via a futures trade that won't move the market or be influenced by intraday market volatility.
- Futures transactions of varying sizes are executed at a single price: EFRs can be traded at any quantity that equals the parties' over-the-counter (OTC) risk exposure.
- EFRs improve the effectiveness of non-traditional hedging programs: certain transactions previously limited to the OTC market can now benefit from reduced market exposure and slippage. OTC positions associated with deferred months may also be hedged more effectively through EFRs, enhancing the financial integrity of OTC hedging thanks to the backing of the Canadian Derivatives Clearing Corporation.

Riskless Basis Cross Transactions

- An approved participant whose client wants a long (short) synthetic cash position can quote a basis between the cash security and the futures contract, acquire a long (short) cash position and take a short (long) futures position against their client's long (short) futures position. This offsets the participant and leaves the client with their desired position. This market facility replicated an underlying index cash market with a transaction in the futures market, allowing the client to acquire equity exposure without holding cash securities.
- The participant's net position is the equivalent of a short-term money market instrument maturing at the expiry of the futures contract.

These trades are all privately negotiated yet cleared by the Canadian Derivatives Clearing Corporation. They provide efficiency in terms of costs, margins and risk management without undue price fluctuations in the market.

For more info on the above-mentioned wholesale facilities, visit the Rules of the Montreal Exchange[7].

It is clear that index futures are useful tools; a summary of the key benefits to trading the SXF contract are:

- **Broad equity diversification in a single transaction**
- **Actively quoted markets with transparent prices and liquidity**
- **Lower brokerage fees than typically found when trading the underlying securities**
- **Mitigation of counterparty risk through daily cash settlement of P/L**
- **Centralized clearing by the Canadian Derivatives Clearing Corporation**
- **Wholesale facilities for large transactions**

7. https://m-x.ca/f_publications_en/mx_rules_en.pdf?v=20190101

For more information

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

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