Guide to Exchange Traded Funds
Investor Suitability

Exchange Traded Funds (ETFs) which are classified as Excluded Investment Products (EIP) are generally for investors who expect low to moderate likelihood of loss of principal investment amount, with generally smaller potential returns. Investors who invest in this product should have a basic understanding of financial instruments with standardized terms and no unusual or complicated features.

Investors should also note that there are some ETFs, especially within the Specified Investment Products (SIP) classification, that are for investors who are willing to accept the risk of substantial losses up to the principal investment amount, possibly within a very short timeframe. Investors should also have sufficient understanding of the product and should possess either a high level of knowledge or sufficient trading experience to properly evaluate and assess the product structure, associated risks, valuation, costs and expected returns.

What is an Exchange Traded Fund (ETF)?

Exchange Traded Funds (ETFs) are open-ended investment funds listed and traded on a stock exchange. They aim to track the performance of an underlying index (like the Straits Times Index) or asset class (like commodities).

What is an Index?

An index reflects the movement of an entire market. It is formed by a basket of securities and is calculated by aggregating the value of the securities and expressing this against a base value.

The securities that make up an index are known as index constituents. These are selected and maintained by an index provider such as SGX Index Edge, FTSE International, Morgan Stanley Capital International (MSCI) and Standard & Poor’s (S&P).

What is an Asset Class?

An asset class is a group of investments that have similar characteristics, behave similarly and are subject to similar market forces. Typical asset classes include equities (stocks), fixed income (debt), real estate, cash and commodities.

The information in this Guide is of a general nature and is not exhaustive. Investors should read all listing documentation provided by the issuer of the exchange traded funds for the features, risks and other information related to the product. The listing documentation can be found under “Company Information” on the SGX website. All examples provided in this Guide are for illustrative purposes only and all calculations are before cost and fees.

Date of publication: March 2020

The information herein is updated as at the date of publication.
Exploring ETFs by type

There are different types of ETFs designed to track different indices or assets. Investors can gain exposure to these underlying through the use of ETFs.

<table>
<thead>
<tr>
<th>Equities Index</th>
<th>Tracks the movements of a stock index, such as the Straits Times Index (STI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity or Commodity Index</td>
<td>Provides exposure to a single type of commodity or a basket of commodities</td>
</tr>
<tr>
<td>Bond Index</td>
<td>Tracks a specific bond index</td>
</tr>
</tbody>
</table>

ETFs can also be broken down geographically:

<table>
<thead>
<tr>
<th>Country</th>
<th>Focuses on a specific country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional</td>
<td>Provides exposure to a particular part of the world, such as Asia Pacific</td>
</tr>
<tr>
<td>Sector</td>
<td>Tracks specific industrial sectors</td>
</tr>
<tr>
<td>Global</td>
<td>Provides exposure to the world</td>
</tr>
</tbody>
</table>

Features of ETFs

ETFs offer a myriad of benefits—including diversification, low costs, price transparency and ability to buy or sell intra-day.

ETFs versus Shares

Both ETFs and shares are listed and traded on a stock exchange. Transactions are made via a broker or online trading platform at any time during trading hours. Familiar stock trading techniques like stop-loss orders, limit orders and margin purchases also apply to both. ETFs, however, have two important advantages over shares:

Diversification

A single transaction of shares in a company only allows you exposure to the performance of that company. To participate in the performance of several companies, you would typically have to buy the shares of each company separately. An ETF is more efficient because it offers diversification across the entire underlying index that it tracks—so a single transaction gives you instant exposure to all securities in that fund portfolio.

Tip

Indexing is an investment strategy where you aim to achieve the same risk and return of an index. ETFs offer a cost-efficient way to achieve this exposure without having to incur a bigger investment by buying the component stocks of the index.
Accessibility

ETFs allow you exposure to a group of equities, assets or market segments because, compared to shares, ETFs can track a broader range of assets or mimic the returns of a certain demographic region. This is the type of exposure that may not be achievable using individual shares.

Tip

As an investor, it may be hard to buy securities listed on stock exchanges outside Singapore. Instead, you could invest in an ETF that tracks securities listed in other foreign exchanges, for example, the iShares MSCI India ETF, which is a broad representation of the Indian stock market.

With commodities like gold, transport and storage costs could make your investment inefficient. ETFs like SPDR® Gold Shares on SGX-ST give you access without the hassle and cost of dealing with physical gold.

Management Fees and Risks of ETFs

Investors should note, however, that there are management fees associated with ETFs, which is not present for shares. There are also risks of ETFs such as tracking error risks and liquidity risks, which can be found in the “Risks of ETFs” section.

ETFs versus Unit Trusts

While ETFs and unit trusts are both managed by professional fund managers and often offer a similar level of diversification, there are two key benefits to ETFs:

Transparency & Tradability

ETFs are typically required to reveal their holdings daily, as opposed to unit trusts and mutual funds which only do so periodically. In addition, unit trusts can only be bought and sold at end-of-day prices quoted by the sales personnel who distribute these on behalf of fund management houses or banks. With ETFs, you can enter and exit positions quickly at any time during trading hours and at prices that reflect real-time market conditions.

Lower Fees & Transaction Costs

An ETF allows you to trade funds much like shares but at lower costs than unit trusts. Unit trusts generally involve sales fees as well as entrance and exit fees. You would typically have to pay either an upfront sales charge ranges from 1.5% to 5% or a redemption charge of 1% to 5%¹. ETF transactions, however, incur no sales charge or redemption charge; only a brokerage fee ranging from 0.08% to 0.28% (with minimum commission fees of $8-$28)² and SGX trading and clearing fees. Furthermore, unit trusts charge management fees calculated as a percentage of total assets under management (AUM). This usually ranges from 0.5% to 2%¹ per annum. Since ETFs are largely passively managed, management fees are typically under 1% per annum. Both ETFs and unit trusts typically charge a trustee or custodian fee of 0.1 to 0.15% per annum on the NAV of the fund.

The following chart illustrates the difference in investing $10,000 in an ETF versus 2 different unit trusts, all of which have an annualised 8% return. Assuming the ETF has no upfront sales charge and has a management fee of 0.3% per annum; as opposed to a sales charge of 2% and 3%; and a management fee of 0.5% and 1% per annum respectively for both Unit Trusts.

You can see the significant impact that sales commission and management fees can have on potential returns—and how ETFs let you keep more of what you earn.

**Figure 1**

5 year returns on $10,000 investment due to different sales commission and management fees

<table>
<thead>
<tr>
<th></th>
<th>ETF</th>
<th>Unit Trust 1</th>
<th>Unit Trust 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversification</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Price transparency</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Intra-day trading</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sales charges</td>
<td>None^</td>
<td>3%-5%</td>
<td></td>
</tr>
<tr>
<td>Management fees</td>
<td>Typically less than 1%</td>
<td>1%-2%</td>
<td></td>
</tr>
<tr>
<td>Dividends*</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Traded through a broker</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Cash settlement</td>
<td>Follows standard SGX-ST settlement cycle</td>
<td>Upfront</td>
<td></td>
</tr>
<tr>
<td>Maximum gain</td>
<td>Potentially unlimited</td>
<td>Potentially unlimited</td>
<td></td>
</tr>
<tr>
<td>Maximum loss</td>
<td>Total investment outlay</td>
<td>Total investment outlay</td>
<td></td>
</tr>
</tbody>
</table>

*Depends on the respective ETF and subject to fund manager’s/company’s discretion
^Usual brokerage fees apply
Exploring how ETFs work

Structuring ETFs
Each unit of an ETF represents partial ownership in an underlying portfolio of securities. The key difference between an ETF and a share is that an ETF is open-ended. This means that if demand for an ETF rises or falls, the size of the fund can expand (as new units are created) or contract (as units are redeemed).

Replication Methodologies for ETFs
There are two common types of index replication method, namely direct replication and synthetic replication.

ETFs Using Direct Replication (“Cash based ETFs”)
The more commonly known replication method, the direct replication method, replicates the performance of an index by investing in the index’s constituents. It is also known as cash based ETF or physically replicated ETF. Direct replication comes in two different forms, namely: (a) the full replication; and (b) the representative sampling methodology.

Full Replication Methodology
The ETF holds the same stocks in the same proportion as the weights of the constituent stocks in the benchmark index.

Representative Sampling Methodology
The ETF holds a selected number of constituents stocks of the underlying index according to their degree of historical correlation with such index. In other words, the ETF holds a sample of constituent securities that statistically represents the index.

ETFs Using Synthetic Replication (“Synthetic ETFs”)
An ETF that uses synthetic replication utilises derivative instruments and/or OTC transactions to replicate the index’s performance without directly holding the underlying assets. Some examples these instruments include swaps, futures, forwards, warrants and/or participatory notes (P-notes). Synthetic ETFs are mostly used for creating access products to less accessible or less liquid markets.

In a swap-based ETF, the ETF manager replicates the index performance by investing a basket of securities that may not be the constituent stocks of the underlying index and engage the use of derivatives to exchange the performance of the assets in the ETF against the performance of the underlying index.

<table>
<thead>
<tr>
<th>Underlying Holdings</th>
<th>Cash based ETFs</th>
<th>Synthetic ETFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securities of the Index</td>
<td></td>
<td>Swaps or derivatives and Collateral</td>
</tr>
<tr>
<td>Transparency</td>
<td>Transparent</td>
<td>Lower transparency</td>
</tr>
<tr>
<td>Counterparty Risks</td>
<td>Limited</td>
<td>Present</td>
</tr>
<tr>
<td>Costs</td>
<td>Transactions costs (to invest in the index’s constituents)</td>
<td>Swap or derivatives costs</td>
</tr>
<tr>
<td></td>
<td>Management Fees</td>
<td>Management Fees</td>
</tr>
</tbody>
</table>
Risks of Synthetic ETFs

Counterparty risk
The ETF is exposed to counterparty risk of the swap provider if the swap counterparty defaults or faces bankruptcy. Net asset value per share of the ETF may be adversely affected and investors may sustain a loss in their investment in the ETF.

The extent of loss arising from swap counterparty default is dependent on the ETF exposure to the swap counterparty. If the ETF’s exposure to the swap counterparty is 10%, the maximum loss due to swap exposure is 10%. The value of the ETF will correspond to the market value of the remaining assets in the ETF.

Collateral risk
Some ETFs may require swap/derivative provider to pledge collateral as a mitigating measure against counterparty risk (as described in under Mitigating Risk Measures against Counterparty Risk below). However, there is risk that when the ETF seeks to exercise its rights against the collateral pledged, the market value of the collateral could be substantially less, thereby resulting in significant loss in the ETF.

Mitigating Risk Measures Against Counterparty Risk
For some swap-based ETFs, counterparty risk exposure under the swap could be

i. collateralized via a diversified pool of securities deposited by the swap counterparty in a segregated account with the custodian and pledged in favour of the relevant ETF, or

ii. the ETF exposure to swap counterparty is capped at a limit of a certain percentage of the ETF’s Net Asset Value.

For example, UCITS III compliant ETFs are only allowed to use derivatives up to a maximum counterparty exposure of 10% of its net asset value. Most of swap based ETFs e.g. Lyxor ETFs and db X-trackers listed on SGX are UCITS III compliant.

Collaterals may be pledged by the counterparties to reduce the counterparty risk of each counterparty.

The above information summarizes the main features of Cash-based and Synthetic Replication ETFs and it is not meant to be exhaustive.

Investors are strongly advised to refer to the prospectus of the respective ETFs (which is available on websites of the issuers) and understand the structure and its associated risk before investing.
**Creation and Redemption Feature of ETFs**

In the creation process, a fund manager creates and issues ETF units to the participating dealer in exchange for securities that form the fund portfolio. From the perspective of the participating dealer, the securities are acquired from stock markets and exchanged for ETF units. These ETF units are then listed on the stock exchange for trading.

The opposite of the creation process is the redemption process. The participating dealer redeems ETF units in exchange for securities from the fund manager. After the ETF units are redeemed, the participating dealer may sell these securities in the stock market and the fund manager will cancel these ETF units.

The creation and redemption process has direct implications on ETF prices and keeps the price of the ETF close to its Net Asset Value (NAV).

**Secondary Market**
where institutional and individual investors buy and sell ETFs

**Primary Market**
where institutional investors create and redeem ETFs
Parties Involved in an ETF

**Stock Exchange**
Provides platform for listing and trading

**Fund Manager**
Manages the fund to track the performance of the index

**Market Makers**
Provides continuous bid/ask quote on the stock exchange to ensure availability of prices and liquidity (the Participating Dealer and Market Maker may be the same person).

All ETFs on SGX have appointed Designated Market Makers (“DMMs”). A designated market maker (i.e. a market-maker registered with SGX-ST) is required under the SGX-ST Rules to provide bid and offer quotations. The maximum spread and minimum quantity is set out in the DMM document on SGX ETF webpage.

Please refer to Chapter 5 of the SGX-ST Rules on Designated Market-Maker and Directive No. 3 on Obligations of a Designated Market-Maker for more information.

**Participating Dealer**
Creates and redeems ETF units with the fund manager

**Custodian & Trustee**
Ensure compliance, safe-keep securities; approve creation and redemption of ETF units

Determining the Fair Value of an ETF

The Net Asset Value (NAV) per unit of an ETF is an indication of its fair value. The NAV per unit is the total value of all assets minus liabilities in the fund, divided by the number of outstanding ETF units. Most fund managers display the NAV of the ETFs on their websites.

Price Versus Net Asset Value (NAV)

While the NAV reflects the fair value of an ETF unit, an ETF may trade at a price that differs from its NAV. Just like shares, the price of an ETF is quoted as bid/ask prices on a stock exchange. At any time during trading hours, an ETF can trade above its NAV (‘trading at a premium’) or below its NAV (‘trading at a discount’).
Selecting an ETF

Choosing the right ETF starts with understanding the types of ETFs in the market and how their unique features can match your needs. It is important to remember that an ETF’s objective is to produce a return that tracks a specific index—not outperform it. Considering your own goals such as retirement, education, general capital appreciation or short-term opportunistic trading is essential to selecting a suitable ETF.

What ETF Metrics Should I Consider?

ETF Provider (Fund Manager)
First consider the ETF provider’s experience as well as size, scale and track record. Different ETF providers offer different expense ratios, management styles and specific areas of speciality like commodities or geographical segment.

Structure
Understanding the structure of an ETF will help you manage cost and risk. Depending on your time horizon, the ideal ETF should fulfil your investment needs while keeping costs (such as expense ratio) low.

Costs
In addition to expense ratio, you should consider the total cost of ownership including trading costs, transaction costs and applicable taxes.

Investment Exposure
You should carefully consider the type of exposure you want. This has to be in line with your investment needs and objectives. Even within a particular geographical region, the underlying exposure can be very different.

Liquidity
Investors should also consider the liquidity level of an ETF. Lower levels of liquidity, whether of the ETF or its underlying securities, may reduce your potential profit due to wider spreads.
Risks of ETFs

Market Risks
As with other securities, the underlying which ETF tracks is susceptible to market volatility. Change of market condition will affect the price of the underlying, which constitutes the NAV of the ETF, leading to a change in price of the ETF.

Foreign Exchange Risks
Foreign exchange risks could arise when (i) the currency of the actual assets held by the ETF differs from the denomination currency of the ETF or (ii) when the trading currency of the ETF differs from the denomination currency of the ETF. Fluctuation of the foreign exchange may affect the price and the realised and unrealized profit or loss of an ETF.

Liquidity Risks
Active trading of the ETF will not be maintained when the authorised participants or designated market maker cease to perform its obligations to provide continuous quote in the ETF. The result of this is that the buyer may not be able to buy or sell an ETF on a timely manner at a fair price.

Tracking Error
Tracking error is a measure of how the value of the ETF may deviate from the value of the underlying which it tracks.

Tracking error arises from various circumstances, such as:

I. Transaction costs – the cost of buying and selling of securities, or fees of swap transactions within the portfolio will be charged to the ETF, thereby causing a reduction in performance from its underlying.

II. Portfolio holdings – if the assets held in the portfolio are different from the underlying assets tracked, the replicated performance may not be the same as the underlying.

III. Replication methodology – synthetic replication will improve an ETF’s ability to track, as it is the swap counterparty’s obligation to deliver the performance of the underlying, subject to a small fee for the swap arrangement. However, this will expose the ETF to the swap counterparty’s default risk.

IV. Types of investments – an ETF that buys into futures contracts will be required to roll them repeatedly (where the ETF must sell an expiring contract to buy the next contract at a different price). If price of the next contract is higher, also known as a contango effect, a loss is recorded. If the price of the next contract is lower, a backwardation effect, again is recorded. The gains and losses will affect the performance of the ETF, causing tracking error.

V. Cash holdings – such as dividends from the securities held by an ETF, may be held as cash in the ETF until the payout date, and investors will lose out on the possible gain from reinvesting or the interest payment of the holdings.

VI. Additional features – an ETF that conducts currency hedging may incur hedging costs in a volatile market, leading to a reduction in the ETF’s performance.
Bid-Ask Spreads

In the creation and redemption process, an ETF will be required to acquire or dispose of underlying index securities in order to mimic the performance of the index. If the underlying index securities are illiquid and thinly traded, the availability of underlying will decrease, causing the bid-ask spread of the underlying to widen. The failure of the creation and redemption will cause ETF units to be traded at a premium or discount, and consequently, the tracking error will increase.

Investors are strongly advised to read the prospectus of the ETFs and understand the all the risks associated with the ETF before investing.

Investing in ETFs

Buying and selling ETFs is no different from buying and selling shares. Before you can start, you will need two accounts: a trading account with a stockbroking member of SGX and a securities account with the Central Depository (CDP) or a nominee account via a stockbroking member of SGX.

Trading Account
This allows you to buy and sell shares and ETFs on the SGX-ST. You are free to open trading accounts with multiple stockbroking members.

CDP Securities Account or Nominee Account
You will need either a CDP securities account or a nominee account for the settlement of your trades. This account maintains all the shares you buy on SGX-ST and electronically records the movements of the shares in and out of your account. For CDP securities account, you will need to be at least 18 years of age and must not be an undischarged bankrupt to open an account.

For more information, please visit sgx.com/cdp
Alternatively, the stockbroking member which you are opening a trading account with can also assist you in opening a securities or nominee account.

Trading Hours and Fees
Trading hours and exchange fees of ETFs follow that of the SGX-ST cash market. Please refer to www.sgx.com for information.

---

3 Bid-ask spread is determined by the difference of the price that a buyer is willing to pay for an asset and the price that a seller is willing to sell.