SGX
SINGAPORE EXCHANGE

An Investor's Guide To Exchange Traded Funds

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What Is An Exchange Traded Fund?

An exchange traded fund (ETF) is an open-ended investment fund listed and traded on a stock exchange. An ETF aims to track the performance of an index or commodity price. Investors can buy or sell units of the ETF on a stock exchange to participate in the performance of the underlying that the ETF tracks.

As the units are listed on a stock exchange, the process of buying and selling is the same as that of a share and can be executed through any broker. Before we explore further, let us understand what an index is and how an ETF tracks an index.

What Is An Index?

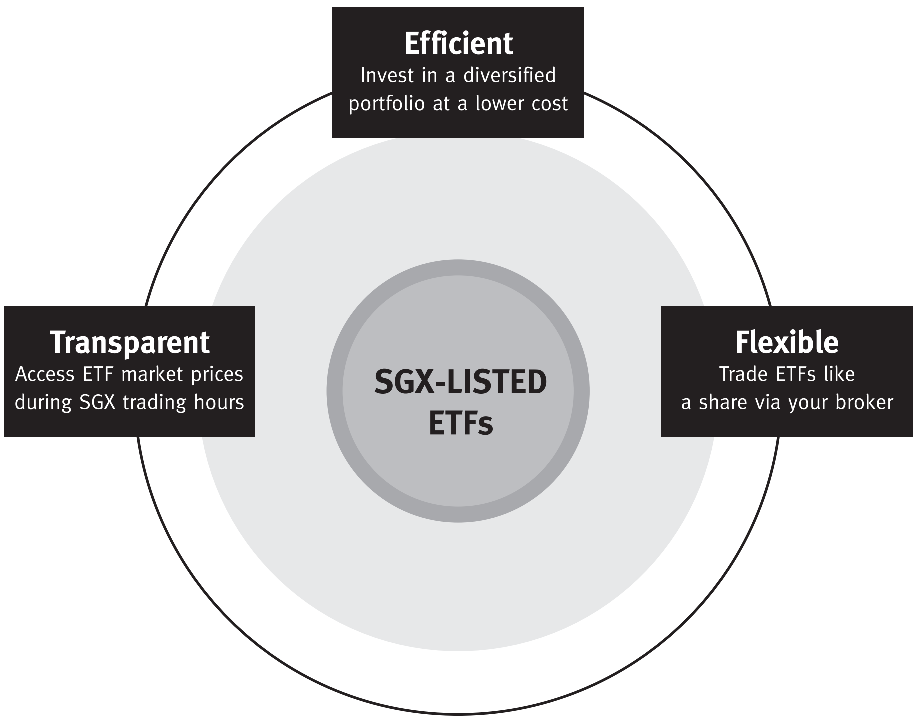
An index is formed by a basket of securities and is calculated by aggregating the value of the securities and expressing it against a base value. An index reflects the movement of an entire market.

The securities that make up the index are known as index constituents. These are selected by the Index Provider from a universe of securities which the index represents.

Example:

Constituents of the Straits Times Index (STI) are selected from securities listed on the Singapore Exchange Securities Trading Limited (SGX-ST). You can refer to the index methodology which governs the selection criteria and the weights of each security in the index.

A common index methodology is **capitalisation-weighted index.** This is an index whose value is determined by adding up the market capitalisation (defined by price x number of shares) of each security in the index and dividing it by the total number of securities in the index. Securities with a higher market capitalisation will be given more weight and therefore will have greater influence over the performance of the index.



How Does An ETF Track An Index?

Tracking can be achieved by various methods:

1. An ETF holds all securities in the same proportion as the securities that make up the index.

2. An ETF holds a sample of securities that statistically represents the index.

From the above, you will realise that an ETF would provide returns very similar to the performance of the index that the ETF tracks.

An ETF aims to track the index and not to outperform or underperform the index.

If the index rises by 10%, the price of the ETF is very likely to rise by 10%. For a short period of time, it is possible that the returns of an ETF are higher or lower than the returns of the underlying index. But generally in the long run, the returns of the ETF and the underlying index should be the same.

SGX-LISTED ETFs	UNDERLYING
CIMB FTSE/ASEAN 40 ETF	FTSE/ASEAN 40 Index
Daiwa FTSE Shariah Japan 100 ETF	FTSE Shariah Japan 100 Index
ABF Singapore Bond Index Fund	Iboxx ABF Singapore Bond Index
DBS Singapore STI ETF	Straits Times Index
db x-trackers FTSE Vietnam ETF	FTSE Vietnam Index
db x-trackers FTSE/Xinhua China 25 ETF	FTSE/Xinhua China 25 Index
db x-trackers MSCI Taiwan TRN Index ETF	MSCI Taiwan TRN Index
db x-trackers S&P 500 Short ETF	S&P 500 Inverse Index
db x-trackers S&P CNX Nifty ETF	S&P CNX Nifty Index
iShares MSCI India ETF	MSCI India Index
Lyxor ETF China Enterprise (HSCEI)	Hang Seng China Enterprise (HSCEI) Index
Lyxor ETF Commodities CRB	Reuters/Jefferies CRB Index
Lyxor ETF Commodities CRB Non Energy	Reuters/Jefferies CRB Non-Energy Index
Lyxor ETF Hong Kong (HSI)	Hang Seng Index
Lyxor ETF India (S&P CNX Nifty)	S&P CNX Nifty
Lyxor ETF Japan (Topix)	TOPIX® Index
Lyxor ETF MSCI AC Asia-Pacific Ex Japan	MSCI AC Asia Pacific EX Japan Index
Lyxor ETF MSCI Asia APEX 50	MSCI Asia APEX 50 Index
Lyxor ETF MSCI India	MSCI India Index
Lyxor ETF MSCI Korea	MSCI Korea Index
Lyxor ETF MSCI Malaysia	MSCI Malaysia Index
Lyxor ETF MSCI Taiwan	MSCI Taiwan Index
Lyxor ETF MSCI Thailand	MSCI Thailand Index
SPDR® Gold Shares*	Spot Gold Price
streetTRACKS® Straits Times Index Fund*	Straits Times Index

** CPFIS Approved*

Who Are The 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

Participating Dealer
Creates and redeems ETF units with the fund manager

Market Maker
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)

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

What Is The Structure Of An ETF?

The **creation process** occurs when the Fund Manager creates and issues ETF units to the Participating Dealer in exchange for securities. These securities form the portfolio of the fund. From the perspective of the Participating Dealer, securities are acquired from stock markets and exchanged for ETF units. These ETF units are then listed on the stock exchange for trading. The Participating Dealer may also act as the Market Maker by providing continuous intraday bid-ask quotes.

Hence, buyers and sellers of ETF units may either transact with one another or with the Market Maker.

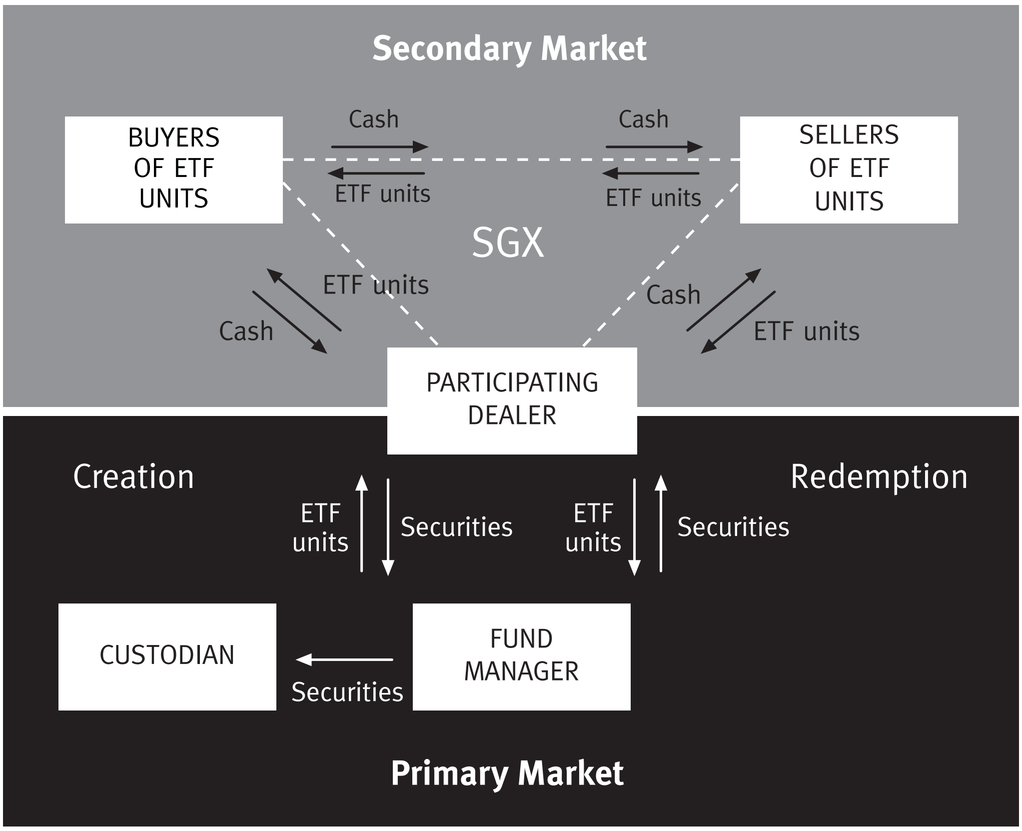
Similar to the creation process, the **redemption process** occurs when the Participating Dealer redeems ETF units in exchange for securities from the Fund Manager. After the ETF units are redeemed, the Participating Dealer may sell these securities in the stock market, and the Fund Manager will cancel these ETF units.

This creation and redemption process in ETFs is possible because an ETF has an open-ended structure. In this way, as the demand for an ETF rises or falls, the size of the fund can expand as new units are created, or contract when units are redeemed.

Thus, the creation and redemption process has direct implications on ETF prices and is advantageous to investors as it keeps the price of the ETF close to the Net Asset Value (NAV).

For most investors, buying and selling of ETF units occur in the secondary market. Large investors who buy and sell at least 100,000 ETF units in one transaction can do so with the Participating Dealer in the primary market.

Before further elaboration, let us first understand the meaning of NAV.



How Do You Determine The Fair Value Of An ETF?

The closest estimate to the fair price of an ETF unit is its NAV per unit. The NAV per unit is the total value of all assets minus liabilities in the fund, divided by the number of outstanding ETF units.

NAV is calculated once at the end of each trading day. An estimate of the NAV, known as the indicative Net Asset Value (iNAV) is also calculated periodically throughout the trading day. The iNAV is also known as IOPV (Indicative Optimised Portfolio Value) or IIV (Indicative Intraday Value).

Example:

An ETF on the Straits Times Index has a net asset value of $2,894,795. Based on this, 100,000 ETF units were created. Hence, the Net Asset Value per ETF unit is $28.95.

When the stock market is open for trading, the value of these fund constituents may rise or fall. As a result, the NAV per ETF unit may correspondingly rise or fall. Investors can find out the NAV and the iNAV by visiting the websites of Fund Managers. By referring to the NAV and iNAV, you can have an up-to-date information on the estimated fair value of your ETF investments. You can also compare the iNAV and NAV to the price of the ETF.

What Is The Difference Between The Price Of An ETF And Its Net Asset Value (NAV)?

The NAV of an ETF reflects the fair value of an ETF unit, while an ETF may trade at a price that differs from its NAV.

Just like stocks, the price of an ETF is quoted as bid/ask prices on a stock exchange. At any time during the trading hours, an ETF price can trade above or below its iNAV. When the ETF price is above the iNAV, the ETF is said to be trading at a premium.

When the ETF price is below the iNAV, the ETF is said to be trading at a discount. The creation and redemption processes described earlier impact ETF prices. This is because as investors buy and sell ETFs, the Participating Dealer can create or redeem ETF units in order to meet market demand. This process benefits investors as it ensures that ETF prices are kept close to the NAV of the ETF.

Now that we understand the basics of ETFs, let us understand how these ETF basics translate into benefits and risks for investors.

What Are The Benefits Of Investing In An ETF?

Efficiency

Diversify in a single investment

An ETF offers diversification across the entire underlying that it tracks. When an investor purchases an ETF unit, the investor gains instant exposure to the basket of securities held in the fund portfolio.

This is efficient to an investor who would otherwise have to build a similar portfolio by purchasing individual stocks, bonds or commodities. The extent of diversification benefits depends on the constituents that make up the fund portfolio.

Get into markets that are not easily accessible

Investors often face difficulties buying securities listed on stock exchanges outside of their home country. There are also difficulties in buying commodities such as gold, where the transport and storage costs would make the investment inefficient. With ETFs, investors can get into these markets in an efficient and convenient manner.

For example, an investor in Singapore has difficulty buying into the Indian stock market, but he can easily buy the iShares MSCI India ETF which is a broad representative of the Indian stock market. Similarly, an investor can buy the SPDR® Gold Shares on SGX-ST without the hassle and cost of dealing with the physical gold.

Invest at a lower cost

Fund managers charge management fees calculated as a percentage of total assets under management (AUM). ETFs are cost efficient because they are passively managed funds with management fees of less than 1% per annum, which are lower compared to the management fees of 1% to 2% usually charged by most unit trusts or traditional funds. Furthermore, investors buying and selling units of a traditional fund usually incur upfront sales charges of 3% to 5%, whereas an investor buying and selling ETF units on a stock exchange would incur the usual brokerage commissions of approximately 0.25% to 0.5% and clearing fee of 0.04%.

Transparency

Access information real-time

Investors can readily access real-time information such as ETF prices, fund information (e.g. NAV and fund constituents), and index information (e.g. index values and index constituents) on the websites of the Fund Managers and SGX. With the transparency that ETF offers, investors can regularly monitor and have up-to-date information on their investments.

Liquidity

Trade ETFs at bid/ask prices provided by Market Makers

ETFs listed on SGX-ST have market makers who provide bid/ask prices. Hence, investors can buy and sell ETFs at market prices during trading hours. In the case of traditional funds such as unit trusts, investors can only buy or sell units at the end of the day.

Flexibility

Trade ETFs like shares

Investors can buy or sell ETFs through a broker anytime during trading hours, just like shares. This is not achievable with traditional funds where investors are restricted to transact at one price calculated at the end of each day, and buying and selling can only be done through specific banks or financial advisers. Also, ETFs can be bought or sold using familiar stock trading techniques such as stop-loss orders, limit orders and margin purchases.

How Similar Or Different Are ETFs And Unit Trusts?

ETFs and unit trusts are funds managed by professional fund managers. Investors buy and sell unit trusts through sales personnel who distribute unit trusts on behalf of the fund management houses or banks.

On the other hand, investors buy and sell ETFs on the stock exchange through a broker. When buying unit trusts, investors typically pay upfront sales charges of 3% to 5%. In contrast, buying and selling of ETFs incur no sales charges. Only the usual brokerage fee of about 0.25% to 0.5% and clearing fees of about 0.04% apply. Furthermore, fund managers of unit trusts usually charge management fees of about 1% to 2% per annum whereas management fees for ETFs are less than 1% per annum.

Investors of unit trusts can only buy and sell units at end-of-day prices quoted by sales personnel or banks at the end of each day. Compared with ETFs, investors can buy and sell ETFs any time throughout the trading day at prices that reflect real-time market conditions.

How Similar Or Different Are ETFs And Shares?

Both ETFs and shares are listed and traded on a stock exchange. Therefore, buying and selling of ETFs and shares are very similar in that both are done through a broker.

However, a single buy transaction of shares in a company only allows the investor to participate in the performance of that one company. If the investor wishes to participate in the performance of many companies, the investor would have to individually buy the shares of these companies. On the other hand, a single buy transaction on an ETF would instantly allow the investor to participate in the performance of a basket of companies. In this example (refer to the next page), an investor would require S$137,456 in order to purchase all the company stocks in the Straits Times Index (STI). However, the investor would require only S$189 to gain the same diversified exposure to the component stocks in the STI through the DBS Singapore STI ETF.

The extent of diversification varies between ETFs as it depends on the number of securities in the ETF basket. This can range from 40 securities as in the case of the CIMB FTSE/ASEAN 40 ETF, to over 600 securities as in the case of Lyxor ETF MSCI AC Asia-Pacific Ex Japan.

Components In STI Index*

Stocks	Closing Price	Board Lot	Minimum Investment
CapitaLand Ltd	$3	1,000	$3,000
CapitaMall Trust	$1.3	1,000	$1,300
City Developments Ltd	$6.27	1,000	$6,270
ComfortDelgro Corp Ltd	$1.37	1,000	$1,370
Cosco Corp Singapore Ltd	$1.12	1,000	$1,120
DBS Group Holdings Ltd	$9.15	1,000	$9,150
Fraser and Neave Ltd	$2.55	1,000	$2,550
Genting International PLC	$0.62	1,000	$620
Golden Agri-Resources Ltd	$0.39	1,000	$385
Hongkong Land Holdings Ltd	$2.45	1,000	$2,450
Jardine Cycle & Carriage Ltd	$14.14	1,000	$14,140
Jardine Matheson Holdings Ltd	$20.68	1,000	$20,680
Jardine Strategic Holdings Ltd^	$17.10	500	$8,551
Keppel Corp Ltd	$5.64	1,000	$5,640
Neptune Orient Lines Ltd/Singapore	$1.51	1,000	$1,510
Noble Group Ltd	$1.30	1,000	$1,300
Olam International Ltd	$1.7	1,000	$1,700
Oversea-Chinese Banking Corp Ltd	$5.78	1,000	$5,780
SembCorp Industries Ltd	$2.85	1,000	$2,850
SembCorp Marine Ltd	$2.13	1,000	$2,130
SIA Engineering Co Ltd	$1.89	1,000	$1,890
Singapore Airlines Ltd	$10.88	1,000	$10,880
Singapore Exchange Ltd	$6.21	1,000	$6,210
Singapore Press Holdings Ltd	$2.84	1,000	$2,840
Singapore Technologies Engineering Ltd	$2.54	1,000	$2,540
Singapore Telecommunications Ltd	$2.64	1,000	$2,640
SMRT Corp Ltd	$1.49	1,000	$1,490
StarHub Ltd	$2.01	1,000	$2,010
United Overseas Bank Ltd	$11.04	1,000	$11,040
Wilmar International Ltd	$3.42	1,000	$3,420
			$137,456

** As of 15 Apr 2009*
^ Exchange Rate – 1 USD = 1.4976 SGD

Total Minimum Investment = S$137,456
vs
DBS Singapore STI ETF = S$1.89 x 100 units = S$189

Comparison Of ETFs, Shares And Unit Trusts

	ETFs	Shares	Unit Trusts
Diversification	✔	✘	✔
Sales charge	✘	✘	3 - 5%
Management fees	Less than 1%	✘	1 - 2% p.a.
Intra-day pricing & trading	✔	✔	✘
Trading flexibility	✔	✔	✘
Liquidity	Intra-day	Intra-day	End-of-day
Cash settlement	T+3		Upfront

What Are The Risks Of Investing In An ETF?

Market risk

As in all financial market investments, ETF investments are not immuned to market risk. Investors are exposed to market risk or volatility of the specific underlying which the ETF tracks. In unfavourable market conditions (e.g. market correction or economic crisis) where the general level of stock, bond, or commodity prices decline, the value of ETFs will decline accordingly. Nonetheless, ETF investments will still deliver returns close to the underlying index, bonds, or commodities.

Tracking error

There is a risk that the fund manager of the ETF may not be able to exactly replicate the performance of the underlying. This is known as 'tracking error'. Tracking error may occur because the methods of sampling are not 100% accurate. In addition, factors such as management fees and timing differences may reduce the returns of the ETF relative to the index returns. However, tracking error in ETFs is expected to be low.

Foreign exchange risk

When the ETF is priced in one currency (e.g. US Dollar) and is different from the functional currency of the investor (e.g. Singapore Dollar), the investor is exposed to fluctuations in foreign exchange rates, which may increase or erode investment returns on the ETF.

How Do ETFs React To Changes In Index Constituents?

Index providers periodically review which securities to include or omit from the index, according to the rules set in the index methodology. This is known as 're-balancing'. ETFs are adjusted to include securities that the index includes, and omit securities that are dropped from the index. This ensures that the ETF performance will mirror the performance of the index.

<u>Example:</u>

A company such as the Bank of China gets listed in Hong Kong and the Hang Seng Index is re-balanced to include the company in the index. An ETF that tracks the Hang Seng Index is also rebalanced to include Bank of China in the fund constituents.

This is the same for ETFs that track indices on bonds or commodities.

How Can Investors Use ETFs As A Tool For Wealth Management?

Cash Management

Idle cash can be invested in an ETF on the short term while the investor decides what to invest in. Investors can take advantage of ETF liquidity by buying an ETF using idle cash and selling the ETF when cash is required for other needs.

Example:

Mr. Tan has $10,000 to invest in the stock market. Mr. Tan views that China market will grow significantly and believes that the stocks of DBS Group Holdings Ltd (DBS) and United Overseas Bank Ltd (UOB) have good potential in the next 2 years. However, he needs a month to examine these stocks in detail before investing. Hence, Mr. Tan first invests the $10,000 in the Lyxor ETF China Enterprise (HSCEI). In this way, Mr. Tan gains from the growth of the China market while taking the time to analyse individual stocks. When Mr. Tan is certain that the time is right, he sells his ETF units and buys the stocks of DBS and UOB.

Strategic Holding

Investors can use ETFs to gain cost-efficient and diversified exposure to specific countries, sectors, bonds or commodities. Furthermore, ETFs can be used to access restricted markets or markets which are not easily accessible to investors.

Example:

1. Ms. Devi has set aside $20,000 for investment. She prefers to diversify her investments rather than putting all her money into one or two stocks. She is considering a unit trust but the expenses are high. Ms. Devi decides to invest in the Lyxor ETF MSCI Korea which allows instant exposure to over 90 top Korean companies with only the usual brokerage commission of 0.25% to 0.5%, clearing fee of 0.4% and management expenses of 0.65% per annum.

2. Ms. Devi has set aside $20,000 for investment. After examining the various stock markets in Asia, she believes that the Indian economy will register strong growth in the next 5 years. She calls her broker but discovers that there is limited access to stocks in Indian companies. She decides to invest in the iShares MSCI India ETF, which tracks the MSCI India Index that represents the Indian stock market.

Tactical Trading

The transparency of ETF information and intra-day liquidity allow investors to make opportunistic investments by 'buying low and selling high'.

Example:

Latest news reported that a civil war has broken out in a country in this region and geo-political tension has reached a new high. Mr. Lim believes that the price of the SPDR® Gold Shares would rise quickly as such news would normally drive gold prices up. Mr. Lim buys 500 units of this ETF at US$60 each. Two days later, he sells them for US$63, making a profit of $1,500 before commissions and fees.

Hedging

Investors can use ETFs to hedge against other investment positions. ETFs can be bought or sold to partially or fully hedge a portfolio, allowing investors to protect their portfolio against market fluctuation.

Example:

Mr. Stuart has US dollar investments and is worried about inflation and the weakening of the US dollar. As gold has a strong negative correlation with the US dollar, Mr. Stuart decides to buy the SPDR® Gold Shares to hedge against the possible depreciation of the US dollar, effectively preserving the value of his investments.

Core-satellite Investments

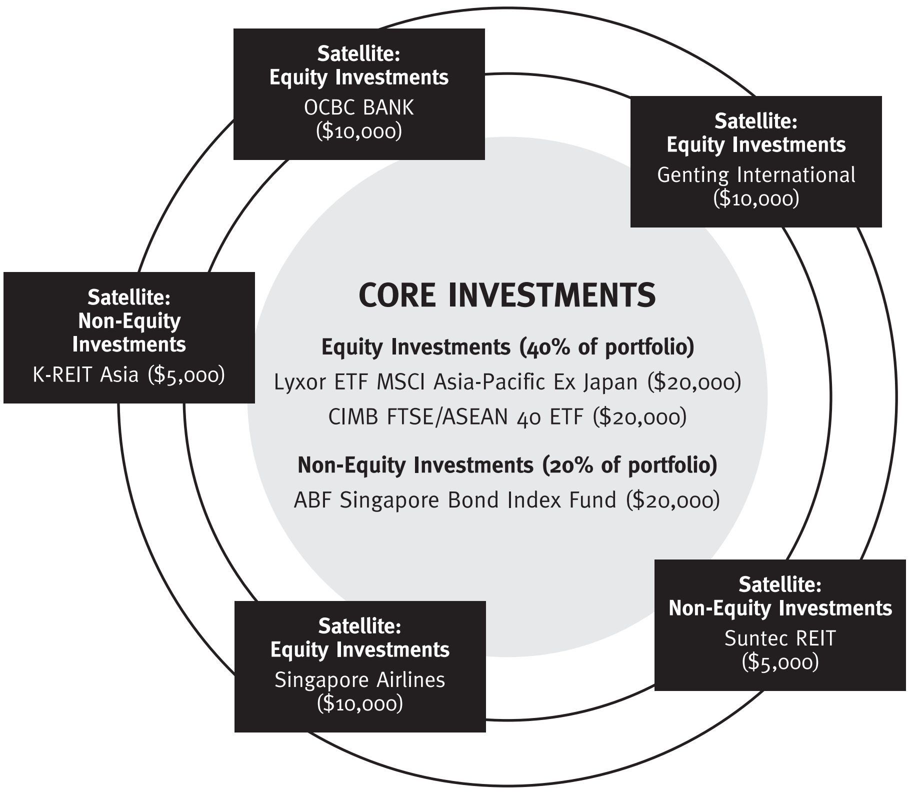
ETFs can be used as core investments in core-satellite investment strategies. Investors hold ETFs as core investments in their portfolios because ETF provides instant diversification at significantly lower costs. Resources can then be focused on directly investing in specific securities (satellite investments) to generate returns that outperform market returns.

Example:

Mr. Ong has $100,000 for investment and wants to allocate his funds in different asset classes. He intends to allocate 60% of all funds into core investments, and 40% of the funds into particular stocks that he thinks will outperform the market.

To build his core investments, Mr. Ong invests $60,000 equally in the following 3 ETFs: ABF Singapore Bond Index Fund, Lyxor ETF MSCI Asia-Pacific Ex Japan and CIMB FTSE /ASEAN 40 ETF. To build his satellite investments, Mr. Ong invests $5,000 each in two Real Estate Investment Trusts: K-REIT Asia and Suntec REIT. He also invests $10,000 each in Singapore Airlines, Genting International, and OCBC Bank.

This diagram depicts Mr. Ong's core-satellite investment portfolio:



How Do I Start Investing In ETFs?

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

Trading Account

The trading account allows you to buy and sell shares and ETFs on the SGX-ST. Buying and selling has to be done through a broker.

Securities Account

The securities account is for the settlement of trades. It maintains all the shares you buy on SGX-ST, and electronically records the movements of the shares in and out of your account as you buy and sell them. You will need to be 18 years of age and must not be an undischarged bankrupt to open an account. For opening of a securities account, you can visit CDP at

ADDRESS	4 Shenton Way #02-01, SGX Centre 2, Singapore 068807
TEL	(65) 6535 7511
FAX	(65) 6535 0775
EMAIL	cdp@sgx.com
WEBSITE	www.cdp.com.sg

Alternatively, the stockbroking member which you are opening a trading account with can also assist you in opening a securities account at the same time.

While you can have only one CDP securities account, you are free to open trading accounts with multiple stockbroking members.

To see a list of stockbroking members on SGX, please visit
www.sgx.com/membership

For more information on SGX ETFs:

CALL: 1800-CALL SGX (2255 749) **EMAIL: products@sgx.com** **VISIT: www.sgx.com/etf**

ABBREVIATION LIST

ETF	Exchange Traded Fund
HSCEI	Hang Seng China Enterprise Index
HSI	Hang Seng Index
IIV	Indicative Intraday Value
iNAV	Indicative Net Asset Value
IOPV	Indicative Optimised Portfolio Value
NAV	Net Asset Value
SGX	Singapore Exchange
S&P CNX Nifty	Standard & Poor CNX Nifty Index
STI	Straits Times Index

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