Exchange Traded Funds

Background Report 1
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- The range of listed exchange traded funds (ETFs) and commodities products has been broadened over the last two years.
- These products provide a convenient way for investors to create and liquidate positions in domestic and international growth assets that are passively-managed.
- Further broadening of the product range, specifically with fixed interest and currency hedged exposures, would allow a more holistic approach to portfolio construction to be implemented using these exchange traded products.

Introduction

Interest in ETFs has increased in recent times with the introduction of new ETF variants into the Australian market. This note discusses ETFs' structural features, operational aspects, comparisons to other forms of implementing exposure and risks.

ETFs are not a new financial instrument, with the first versions traded in the USA and Canada in the early 1990s. ETFs represent an interesting addition to the potential range of investments for client portfolios.

What are ETFs?

ETFs are open-ended pooled funds that track a basket of stocks, for example from a country or region's share market index, with the aim of replicating the performance of that basket. This is done through purchasing all, or a representative sample of the individual shares in the basket. Other ETFs may track a narrow sector of a market or even be based on stocks with particular characteristics, such as their dividend yield. ETFs are listed financial products that can be bought or sold on stock exchanges in the same way as ordinary shares and are subject to similar settlement processes.

The majority of ETFs are based on share market indexes and represent an alternative to other investment vehicles. Other types of ETFs are also available in other countries across a range of asset classes (including fixed interest), management styles (eg actively-managed ETFs) and structures (eg leveraged or short-biased ETFs).

ETFs traded in Australia

There are four issuers of ETFs currently trading on the Australian Securities Exchange (ASX):

State Street Global Advisers offers three ETFs providing exposure to the Australian market: top 50 and top 200 companies and listed property trusts included in the S&P/ASX 200 index. These ETFs are branded "SPDRs" (colloquially known as "Spiders"), currently representing a total market capitalisation of $2.4 billion. The ASX top 50 and top 200 SPDRs were introduced in 2001;

BlackRock, Inc (BlackRock) currently offers 19 ETFs, known collectively as "iShares", providing access to developed and emerging market international equity exposures. iShares were launched in the Australian market in October 2007 and trade as CHESS Depository Interests (CDIs). Total market capitalisation of the ASX-listed iShares is $412 million, with the underlying trusts having a total market capitalisation of $163 billion;

Vanguard Investments Australia is the newest entrant to the Australian ETF market, launching three ETFs in early May 2009. These provide exposure to Australian shares via an S&P/ASX 300 Index exposure, US shares that are included in the MSCI US Broad Market Index and non-US global shares via a FTSE All-World ex-US exposure. The two international ETFs trade as CDIs. Current market capitalisation of the Vanguard Australian ETFs is around $22 million and the total market capitalisation of the underlying international ETFs is $110 billion; and

ETFS Metal Securities Australia Ltd offers a range of exchange traded commodities (ETCs) based on the precious metals of gold, platinum, palladium and silver, in addition to a product with a blend of exposures to these metals. ETCs differ from ETFs in that the listed investment vehicle does not itself trade the underlying securities, instead the ETC is allocated an ownership interest in the precious metal which is held by a custodian in nominated depositories. The ETC price is designed to trade in line with the spot price of the relevant commodity and trades as a redeemable preference share. These ETCs are not designed to pay any income on a regular basis. The gold product (ASX code: GOLD) has traded on the ASX since 2003 (market capitalisation of $530 million) and the other ETCs commenced trading in late January 2009, with a current market capitalisation of around $5.3 million. The current market capitalisation of the underlying ETCs is around $20 billion.

We refer to ETCs and ETFs collectively in this note as ETFs, for ease of reference. All market capitalisation data for the ASX-listed ETFs above is sourced from the ASX and, for the underlying offshore ETFs, from the ETF providers.

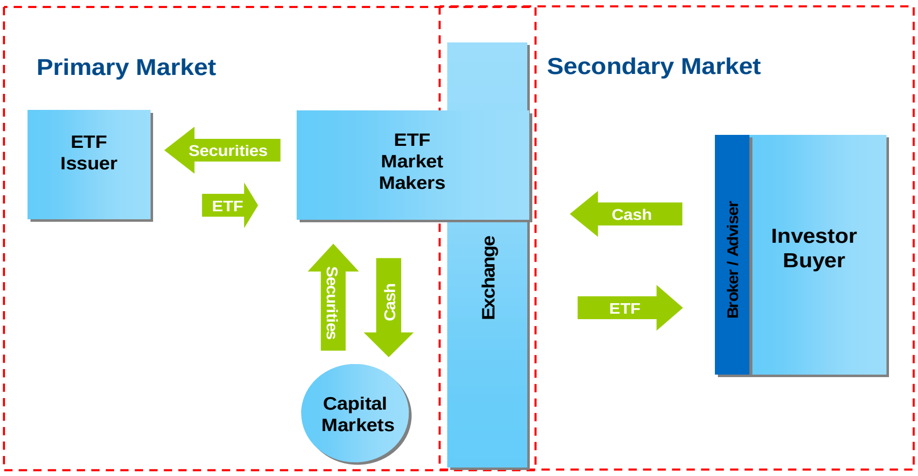
ETF mechanics

The mechanics of ETF transactions, broadly, are as follows:

- End investor clients, via their brokers, place orders for transactions in the secondary market. Trades are subject to the standard transaction date plus three days settlement period:;
- The client's broker transacts with either appointed ETF Market Makers (known as Authorised Participants (APs)) or other brokers. APs have the ability to create and cancel units directly, in addition to trading existing ETF units they have on their books. Part of the role of an AP is to provide price competition and ensure that demand and supply are balanced;
- APs operate in the securities market and stand between the actual ETF and the client's broker, delivering either securities or cash to either party, depending on the type and quantum of transactions;
- The ETF issuer handles the issuance and cancellation of units at the Fund level and exchanges either ETF units or securities with APs, depending on the type of transaction. The issuer specifies the composition of baskets of securities that are required to be delivered to the fund in return for new issuance on any one day.

Diagram 1 below displays the mechanics of the ETF market and its participants, in this case for ASX-traded iShares. The arrows indicate flows between participants in the case of an application. For ASX-listed iShares, there is an additional step involving the US issuer of iShares (BlackRock), delivering units to the respective ETF's US registrar, who then issues units to the Australian-based registrar for distribution to local participants.

Diagram 1. Flow diagram of iShares ETF purchase by an investor



Source: BlackRock

The traded price of an ETF is based on the NAV of the underlying assets. Due to the role of the APs, an ETF typically trades at prices that match this NAV closely. However, there is potential for movement away from the NAV as ETFs are subject to the dynamics of demand and supply of the actual ETF, in addition to general market conditions. These price deviations should, however, be relatively short lived, as they create arbitrage opportunities which are expected to be exploited and traded away by other market participants.

International ETFs.

In the case of international ETFs like iShares, there are three principal aspects that APs will take into consideration when pricing:

- the value of all the underlying securities that make up each individual ETF;
- the FX conversion rate of any underlying foreign currencies into Australian dollars; and
- changes in sentiment and market movements since the previous US closing levels.

Australian ETFs

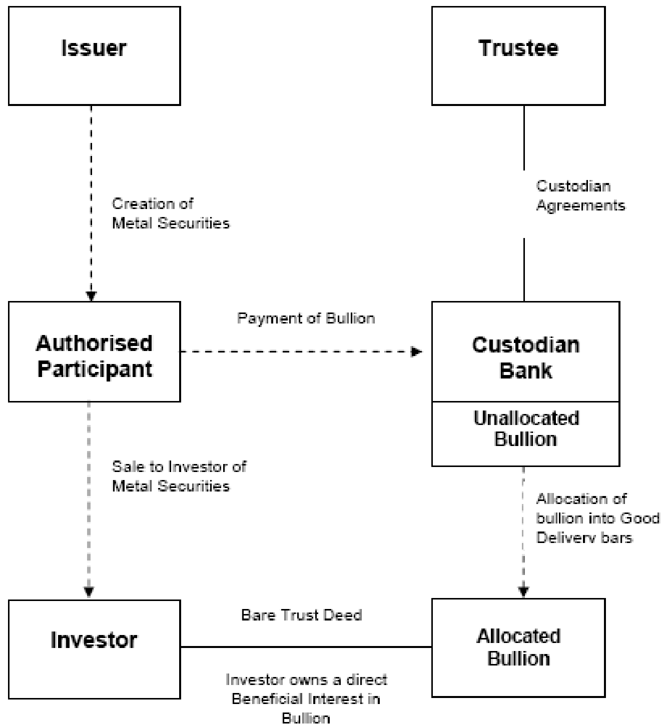
ETFs based on Australian market indexes do not have these currency features or differences in market trading hours to consider.

Commodity ETFs

The ETCs issued by ETFS Metal Securities Australia Ltd have a different structure to the equity-based ETFs, as explained in the prospectus. They comprise of a “metal share” of a nominal value plus a beneficial interest in the relevant amount of bullion (the “metal entitlement”), which is held in a separate trust for each holder. A metal share is a redeemable preference share with a nominal value of 1/1000th of 1 cent which carries with it a right to a relevant metal entitlement. A metal share in itself has no economic value and exists in order to provide a class of “share” which is tradeable on the ASX. The economic value of each metal security lies in the metal entitlement. Whenever there is a transfer in ownership of a Metal Share, there is a corresponding transfer in the ownership of the applicable metal entitlement. A separate trust is established for each holder of a metal share and the metal entitlement is held by the Trustee on trust for each such Holder. The value of the metal entitlement is reduced on a daily basis to reflect management fee accrual.

The following diagram shows the flows relating to ETC transactions.

Diagram 2. Flow diagram of ETC purchase by an investor



Source: ETFS Metal Securities Australia Ltd

Diagram 2 above shows that:

- New securities can be created by an AP depositing physical metal with the Custodian;
- The metal is deposited in unallocated form, representing a credit risk against the Custodian (HSBC Bank USA, N.A.);
- The metal is then allocated (set aside as separately identifiable Good Delivery bars) which is then not a credit risk against the Custodian but owned beneficially by holders of metal securities;
- Investors buy (and generally sell) metal securities through APs;
- Each separate trust is a bare trust so the holder is entitled to the allocated bullion; and
- Each time the holder transfers a metal share to a new holder, the beneficial interest in the bullion automatically transfers to the new holder.

Main Features of ETFs

- **Trading and liquidity.** ETFs are traded on the ASX's AQUA trading market during the ASX's trading hours and according to the ASX's rules, with traded prices usually at or close to levels desired by end investors. The market makers contracted to the ASX have a financial incentive to ensure that traded prices are within tight bands to the NAV price.
- **Return composition.** ETFs returns, with the exception of commodity-based ETCs, comprise both capital appreciation and potential for income, reflecting changes in value of the underlying assets and movements in the ASX-traded price. Income received from underlying share holdings is passed through in the form of distributions and is expected to be a relatively minor component of total return.
- **Currency.** All international-based ETFs listed on the ASX have a base currency of the US dollar and are unhedged to the Australian dollar for currency movements. Currency can impact returns for an Australian investor through the following aspects:
  - The movement in prices of the underlying securities included in the ETF basket;
  - Fluctuations in the $A rate of foreign exchange conversion with the currency (or currencies) of the underlying basket of securities; and
  - Fluctuations in the $A/$US rate of foreign exchange conversion on cash amounts while the fund is processing distribution payments.
- **Distributions.** Distributions are payable either quarterly or semi annually, depending on the particular ETF. Distributions are declared and paid in US dollars, then converted to Australian dollars by the local registrar. Being index funds, the level of distributions should be consistent with that of index income distribution levels.
- **Taxes**[1]. Capital gains may be payable through the buying and subsequent selling of ETFs. Being index funds, the turnover of the underlying portfolio tends to be low, as a result of index rebalancing or transactions that are substantial relative to the underlying asset pools. As a result, capital gains generated by underlying portfolio changes are likely to be lower than those generated by trading the ETFs. Distributions are taxed in Australia as foreign-sourced income and are subject to US withholding tax. Investors should be aware that, by providing details to US authorities (on a 'W-BEN' form) the rate of distribution withholding tax may be reduced.
- **Costs.** The ongoing management costs of ETFs are represented by a fee which is accrued daily and paid monthly out of each ETF. Other costs to consider are buy/sell spreads (which are expected to be minimal), standard brokerage charged on transactions and any ongoing platform fees. The table below shows the ongoing management costs of each ETF traded on the ASX.

[1] This does not constitute tax advice and you should contact your accountant or tax adviser regarding tax aspects of investments referred to in this paper.

Table 1 – Ongoing Management Expenses

Fund Name	ASX Code	MEF*	Equivalent Unlisted Managed Fund Average^
iShares FTSE/Xinhua China 25	IZZ	0.72	1.33
iShares MSCI BRIC	IBK	0.72	1.31
iShares MSCI EAFE	IVE	0.35	n/a
iShares MSCI Emerging Markets	IEM	0.72	1.31
iShares MSCI Hong Kong	IHK	0.55	1.33
iShares MSCI Japan	IJP	0.56	1.24
iShares MSCI Singapore	ISG	0.55	1.33
iShares MSCI South Korea	IKO	0.65	1.33
iShares MSCI Taiwan	ITW	0.82	1.33
iShares Russell 2000	IRU	0.24	1.04
iShares S&P 500	IVV	0.09	1.04
iShares S&P Asia 50	IAA	0.52	1.33
iShares S&P Europe 350	IEU	0.60	1.38
iShares S&P Global 100	IOO	0.40	1.08 (active) 0.44 (index)
iShares S&P Global Consumer Staples	IXI	0.48	n/a
iShares S&P Global Healthcare	IXJ	0.48	n/a
iShares S&P Global Telecommunications	IXP	0.48	0.83
iShares S&P MidCap 400	IJH	0.21	1.04
iShares S&P SmallCap 600	IJR	0.20	1.04
SPDR S&P/ASX200 Fund	STW	0.286	1.06 (active) 0.38 (index)
SPDR S&P/ASX 50 Fund	SFY	0.286	1.00 (active) 0.32 (index)
SPDR S&P/ASX 200 Property Fund	SLF	0.40	0.74 (active) 0.33 (index)
Vanguard Australian Shares Index	VAS	0.27	1.06 (active) 0.38 (index)
Vanguard US Total Market Shares Index	VTS	0.09	1.04
Vanguard All-World Ex-US Shares Index	VEU	0.25	1.08 (active) 0.44 (index)
ETFS Physical Gold	GOLD	0.39	n/a
ETFS Physical Palladium	ETPMPD	0.49	n/a
ETFS Physical Platinum	ETPMPT	0.49	n/a
ETFS Physical Silver	ETPMAG	0.49	n/a
ETFS Physical PM Basket	ETPMPM	0.433	n/a

* ETF Management Expenses and Fees. Sources: BlackRock, SSGA, Vanguard and ETFS Metal Securities Australia.
^ Source: Morningstar (wholesale trust universe), October 2009.

The above table shows that the ongoing management costs of ETFs are lower than those of equivalent unlisted managed funds in nearly all cases. An exception to this is the SPDR S&P/ASX 200 Property Fund, where the indexed unlisted managed fund average from the Morningstar universe is lower. The management cost differential is smaller when an indexed universe is available.

Advantages of investing in ETFs

ETFs have lower ongoing costs relative to most unlisted managed funds. This is particularly the case for US S&P500-based ETFs, where the ETF is priced over 0.95% pa lower than the respective wholesale fund averages. After considering costs such as brokerage and platform fees, ETFs are expected to represent a lower-cost investment in most cases. This is an important consideration as the exposures provided by ETFs are indexed-based and it is important to minimise costs.

Creating exposure to a particular market segment, country or region is relatively easy to implement through ETFs. For clients who may already have a focus on developed market large cap stocks through diversified share funds, dedicated emerging markets or small cap exposure may be implemented through adding an appropriate ETF.

In many of these markets, particularly broader developed markets, outperformance of benchmark from traditional long-only active management has been difficult to predict and episodic. As such, ETFs may avoid the potential disappointment of meaningful underperformance from active management.

For clients wishing to include an element of shorter term asset allocation within their investment structure, ETFs represent a means for exposures to be quickly created and removed. The more recent availability of commodity-based ETFs provide the potential to include some of the noted portfolio benefits of commodities, i.e. chiefly protection against expected inflation and commodity price appreciation.

ETFs typically have a low portfolio turnover ratio, particularly in comparison to many actively-managed share funds. The basket of stocks the ETF tracks only changes when companies are added to or removed from the underlying index and, particularly with large and well-established funds, the trading required as part of the process of creating or cancelling units is expected to have a marginal impact on the bulk of the fund's holdings. This low turnover means that an ETF is less likely to generate high levels of non-discounted realised capital gains, which may occur with unlisted managed funds.

ETFs are mostly fully invested in the underlying stocks, with the exception of the distribution accrual issue mentioned above. With most unlisted managed funds, funds normally keep a cash component to pay investor redemptions or the manager may use cash in a tactical manner. Further, ETFs provide a high degree of transparency by posting the details of the underlying portfolios on their websites on a regular basis.

Disadvantages of investing in ETFs

ETFs, like indexed unlisted managed funds, don't offer the potential for above-market returns, in contrast to actively managed funds. Tracking a market index also means that ETFs don't have the potential to minimise the effects of market downturns. Many of the markets covered by ETFs, including small company and emerging markets, have been areas where active management has had a history of success, due to underlying market inefficiencies and variable liquidity conditions.

The ETFs currently available to Australian investors cover only part of the spectrum of asset classes included in the risk profile framework of most Australian diversified investors. Specifically, there are no fixed interest nor currency-hedged international ETF variants currently trading on the ASX. Currency is a key factor to consider with respect to ETFs. As the underlying investments of the current ASX-traded ETFs are priced in local currency, movement in the relevant AUD exchange rate can have meaningful impacts on return. Access to fixed interest and currency-hedged exposures would assist in implementing a holistic asset allocation strategy for clients via ETFs.

Liquidity, or the ability to execute a transaction at an appropriate price, is another important issue. ETF liquidity is largely determined by the liquidity and volatility of the underlying market being tracked or, in the case of ETCs, the availability of precious metal to allocate. Australian market supply and demand and sentiment conditions also play a part. If an ETF or underlying market is not widely traded then the buy/sell spreads can move wider, however the activity of the APs is designed to mitigate this and liquidity has not been seen to be a real problem for ETFs traded to date. These factors are less of an issue with unlisted managed funds due to the end of day unit pricing mechanism, where buy/sell spreads are largely fixed.

While investing in ETFs is a low cost option for gaining indexed exposure to the markets and commodities covered by ETFs, it may not be the best option for all types of clients. In particular, those who top-up their investment with relatively small amounts on a regular basis, eg superannuation clients in an accumulation phase who contribute relatively small amounts of their portfolio monthly. This is because the investor pays brokerage on each transaction whereas with an unlisted managed fund there is generally no upfront brokerage cost to regular investing. These types of clients may be better served via the use of indexed unlisted managed funds for all or part of their portfolio. Regular rebalancing transactions and eventual pension payments also would incur brokerage costs.

Risks

ETF owners are subject to risks similar to those of investors of other diversified portfolios of growth assets. As equity-based ETFs provide exposure to market benchmarks, a primary risk consideration is that the general level of stock prices may decline, thus affecting the value of the ETF. With the underlying portfolios being comprised of a broad range of stocks, there is little stock-specific risk involved, in comparison to a more concentrated active fund. Further, the overall depth and liquidity of the secondary market may also fluctuate, with implications on the buy/sell spread attained, although this risk is expected to be minimised by the influence of the APs.

An individual region, country or sector fund may also be adversely affected by the performance of the specific group of stocks on which it is based. Although exchange traded funds are designed to provide investment results that generally correspond to the price and yield performance of their respective underlying indexes, the ETFs may not be able to exactly replicate the performance of the indexes because of expenses and other factors.

The main risks of ETFs may be summarised as follows (investors should refer to the relevant offer documents for more detailed discussion of risks):

- Tracking Error – While the NAV of an ETF will track closely to the underlying index there may be some tracking error (defined as the return difference between the NAV and the relevant index). Tracking error is discussed further below in the performance efficiency section.
- Market Risk - Market prices for securities and index ETFs fluctuate daily based on many factors such as economic conditions and global events, investor sentiment and security-specific factors. The degree of general market volatility can fluctuate. The prospect of a market decline and its impact on security and fund prices should be considered as general market risk.
- Currency - International ETFs may involve risk of capital loss from unfavorable fluctuations in currency values, differences in generally accepted accounting principles, or economic and political instability in other nations.
- Spreads risk – buy/sell spreads are directly related to volume traded for an ETF. Therefore if an ETF is not widely traded then the buy/sell spreads can move wider than would be ideal. Most ETFs have had spreads of less than 10 basis points but this can vary up to more than 50 basis points.
- Counterparty Risk – There are a number of counterparties involved in the transaction being the ETF issuer, the ASX, a client's stockbroker and the APs.

Performance efficiency

It is important to consider how closely the returns of ETFs follow their relevant index or commodity return. In this section we examine various dimensions of ETF efficiency:

- The difference between management expenses & fee ratios and relative fund performance (i.e. the difference between closing traded ETF price return and the relevant index return) for the international equity-based ETFs traded on the ASX;
- Premium or discount of a range of international equity-based ETFs based on their daily closing traded price versus NAV; and
- How closely the ASX-traded international ETFs have tracked their relevant benchmarks, with an examination of currency impacts.

Tracking Error, in the context of ETFs, refers to the difference between the NAV return of the ETF and the return of the underlying index. Tracking error may be positive or negative. The more traditional measure of tracking error refers to the volatility of an investment's under- or outperformance relative its benchmark.

Sources of ETF tracking error include the following:

- Fees and expenses: daily accrual of fees and expenses causes variation of the NAV to index returns;
- Trading premium or discount: this is driven by short-term trading flows but expected to be minimal over time due to the actions of APs and arbitrageurs;
- Dividend reinvestment: one source of tracking error derives from the distribution mechanics: an ETF typically pays out dividends received from the underlying stocks on a quarterly or half-yearly basis. However, the underlying stocks pay dividends throughout the period. Therefore, these funds may hold cash for various time periods throughout the period, even though the underlying benchmark index does not comprise of any cash;
- Index tracking approach: the two typical techniques of constructing underlying portfolios are optimisation (the use of quantitative techniques to select stocks, which may exclude smaller or less liquid stocks that may be in the index) and replication (purchasing the entire basket of index constituent securities);
- Portfolio construction constraints: for example, the US Securities and Exchange Commission imposes rules on mutual fund composition such that no single security can be more than 25 percent of the portfolio and securities with more than a 5 percent share can't make up more than 50 percent of the fund. This can generate differences between the portfolio and the index, especially for narrow-focused funds where the underlying basket of stocks is dominated by several large securities. Other funds operate in markets with lower liquidity, higher transaction costs and constraints relating to foreign ownership. All of these factors impact on realised tracking error;

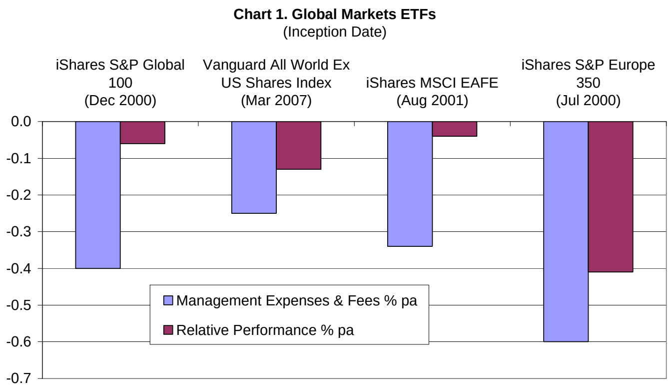
- **Index rebalancing:** when stocks enter or leave underlying indexes, ETF managers need to make changes to the fund and tracking error may be generated due to timing differences and transaction costs; and
- **Non-concurrent trading hours:** as markets are open at different times, the stocks in the underlying index may trade when the ETF does not. Further, there may be delays with the delivery of ETF units between markets, creating potential for tracking error.

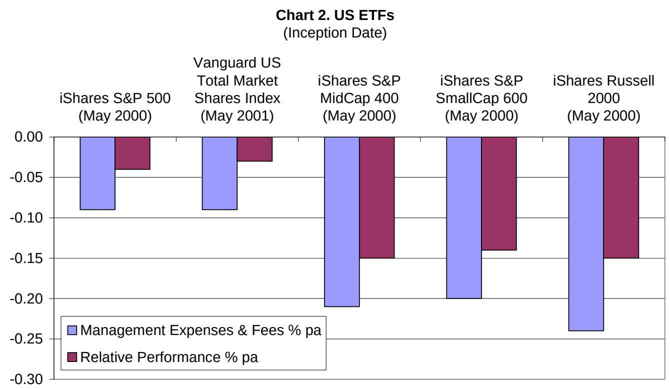
Fees, index rebalancing effects and index tracking approach are the main sources of tracking error.

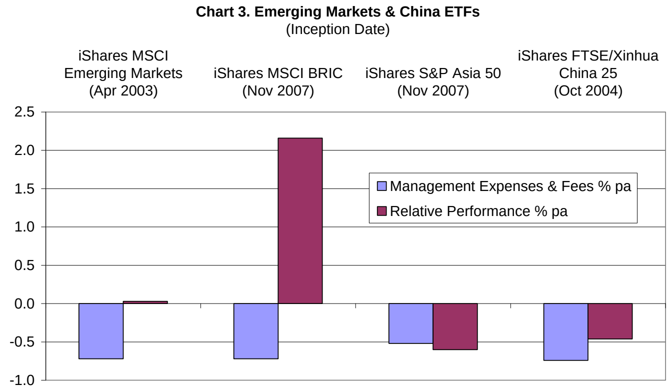
Management costs vs relative fund performance

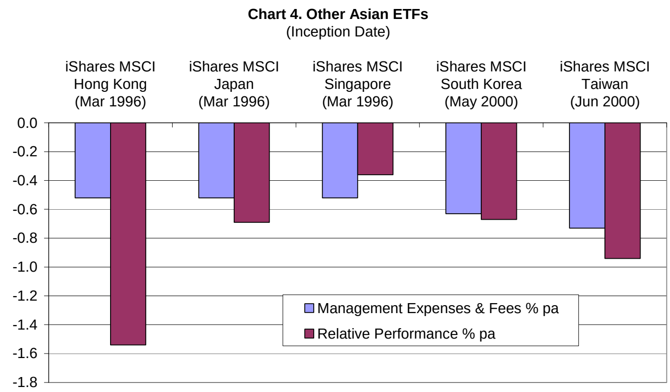
A method of examining an ETF's efficiency in tracking its relevant benchmark is to compare its ongoing management cost to its return relative to the index. The presence of a management cost would lower the fund's return. If the fund's return differs from the index return by an amount higher or lower than the management costs then there would be other tracking error factors impacting the return.

The following four charts show the ongoing nominal management cost ratio compared to the historical US dollar fund return difference (based on closing traded price) between a range of international equity-based ETFs and their underlying benchmarks. As the ASX-listed ETF trading history is relatively short, we have presented data from the inception of the corresponding US-traded ETFs to 31 August 2009. Management costs have been expressed as a negative figure.









Sources: BlackRock and Vanguard

Charts 1 to 4 show the following:

- The traded prices of global and US-based equity ETFs have been closer to their relevant index than their management cost ratios imply. This suggests that the realised results of tracking error factors, in aggregate, have been positive in these relatively deep and liquid markets;
- ETFs based on emerging equity markets have been less efficient at tracking their respective benchmarks than for developed markets. While relative fund performance for the majority of ETFs in these categories has been broadly in line with management fees, two ETFs stand out with exceptional differences, namely the BRIC and Hong Kong iShares;
- The iShares MSCI BRIC fund's difference is mainly a result of the fund holding a relatively large proportion of depositary receipts traded in the US, whereas the index is comprised of direct share exposures. The relevant direct stocks and their depository receipt equivalents have tended to trade at different prices since inception and this has benefited the iShares fund relative to the index. This degree of relative performance would be expected to decrease over time;
- The iShares MSCI Hong Kong fund's performance difference is mainly a result of concentration and liquidity issues in the fund's benchmark in the period from inception to 2004. Further, the management expenses and fees for the fund were at a higher level (0.84% pa) for the period prior to 2001. Both of these effects led to the ETF not being able to track the relevant index closely; and

- The three global sector iShares traded in Australia have displayed very little difference between the traded price and their relevant index. This implies that sources of return difference for these ETFs have been sufficiently positive to offset the management fees & expenses.

There appears to be no consistent relationship between an ETF's portfolio construction approach (either optimised or fully replicated) and the quantum of relative performance. The optimised approach involves the manager constructing portfolios using a representative sample of stocks and using computer modelling techniques to produce a portfolio with similar expected return and volatility characteristics as the underlying index. This approach could lend itself to producing higher tracking error if the actual return of the index deviates from the expected return profile of the portfolio to any significant extent. Based on the figures for individual ETFs above, the optimised approach has not necessarily lead to higher tracking error or a greater degree of underperformance.

It is apparent that ETFs based on more concentrated or less liquid stock markets (the emerging markets and individual Asian country ETFs) generally have a higher performance differential than the broader and more liquid developed markets. This differential can be either positive or negative. Investors should expect a higher tracking error when using ETFs based on more concentrated and less liquid markets.

Premium or discount to NAV

We have also examined below the issue of the daily closing traded price of a selection of ETFs representing either a discount or premium to fund NAV, again using a range of US-traded ETFs, from 1 January 2006 to 31 August 2009. This period has been selected as it spans market environments of high and low volatility.

Chart 5. iShares S&P Global 100
Closing Price Premium or Discount to NAV

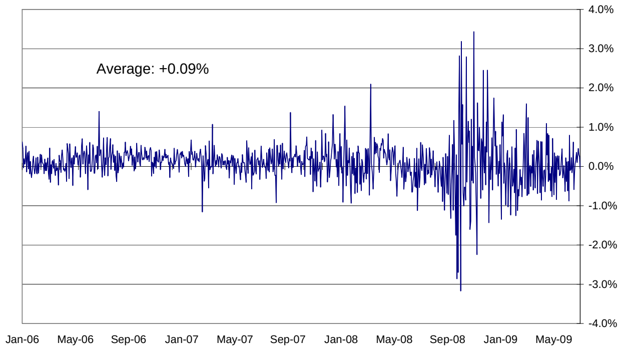


Chart 6. iShares S&P 500
Closing Price Premium or Discount to NAV

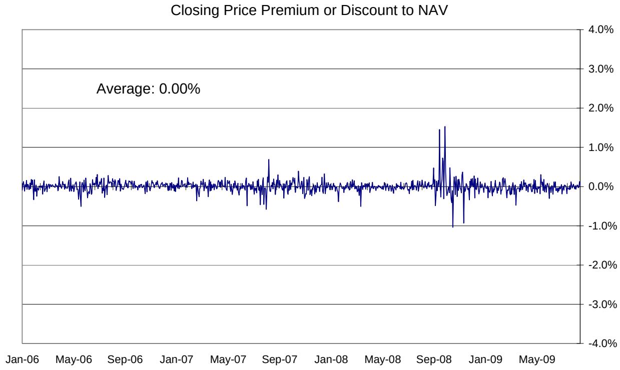


Chart 7. iShares MSCI Emerging Markets
Closing Price Premium or Discount to NAV

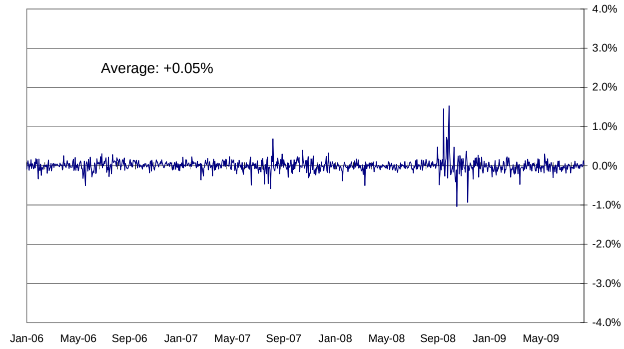


Chart 8. iShares MSCI Japan
Closing Price Premium or Discount to NAV

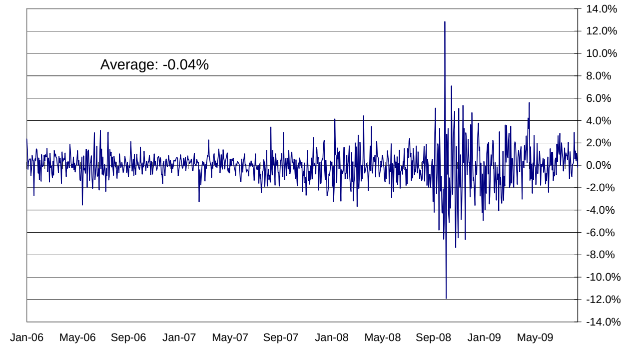


Chart 9. iShares FTSE/Xinhua China 25
Closing Price Premium or Discount to NAV

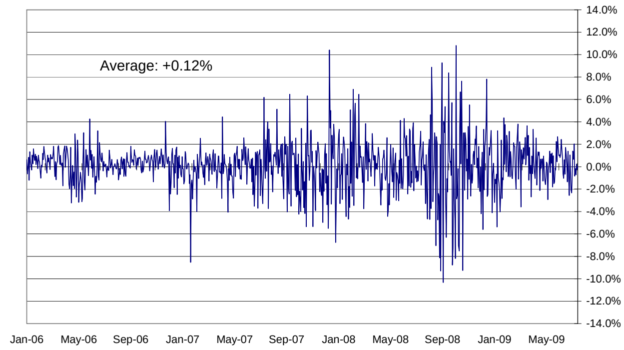
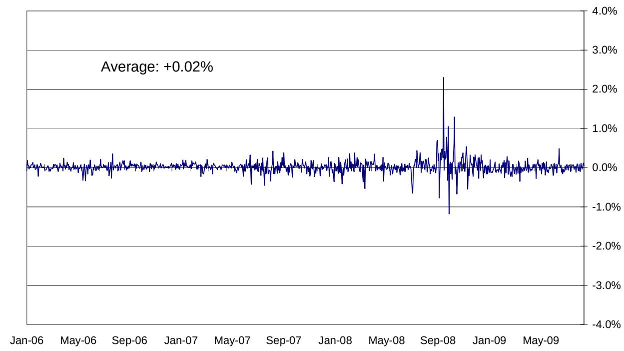


Chart 10. Vanguard US Total Market Shares Index
Closing Price Premium or Discount to NAV



Sources: Bloomberg, BlackRock and Vanguard

Charts 5 to 10 above show the following:

- There has not been any enduring experience of the closing traded price of the selected ETFs representing a premium or discount to NAV. Other exchange traded managed investment vehicles such as listed investment companies or listed property trusts may consistently trade away from the value of underlying investments;

- There have been short-term differences between closing price and NAV but these differences have been short-lived, with gaps between price and valuation closed either by arbitrageurs or the APs;
- All ETFs presented above display spikes in premium/discount around the period of extreme financial market stress in September and October 2008. Both primary markets (via the APs) and secondary markets for ETFs continued to function during this period. Subsequently the premium/discount reverted to pre-crisis levels, implying that the AP mechanism has been consistently effective; and
- The frequency and margin of premium or discount has been higher in the Global 100, Japan and China 25 iShares. This suggests that trading in these ETFs and underlying markets is less liquid and/or the activities of the APs is not as effective in ensuring trading close to NAV in these markets.

The preceding analysis was based on a comparison of closing price of the US-traded vehicle versus NAV. Another effective comparison is to examine the average of the bid and ask prices (the mid price) versus the NAV over time, in addition to the prevailing spread at the time when investors are considering placing orders. The respective ETF providers provide useful online tools for examining these measures, in addition to encouraging the APs to provide effective matching of market price to transactions.

As with the management costs and relative fund performance analysis above, there is a broad relationship between the underlying market's liquidity features and portfolio construction constraints and the actual premium or discount. Developed and broad market ETFs tend to trade closer to NAV than narrower ETFs such as single country or sector ETFs. Investors should be mindful of these characteristics when determining ETF transactions.

Performance relative to index and currency impacts

The final performance analysis discussed is the traded price return of the ASX-traded international ETFs versus their respective equity or commodity benchmarks. We have included a comparison to benchmarks calculated in local currency and Australian dollars and have used a rolling period of 180 days to examine any trends in return differentials. The Australian-based ETFs have not been included in this analysis as they have tracked their relevant indexes very closely.

Chart 11. iShares S&P Global 100
Rolling 180-Day Returns

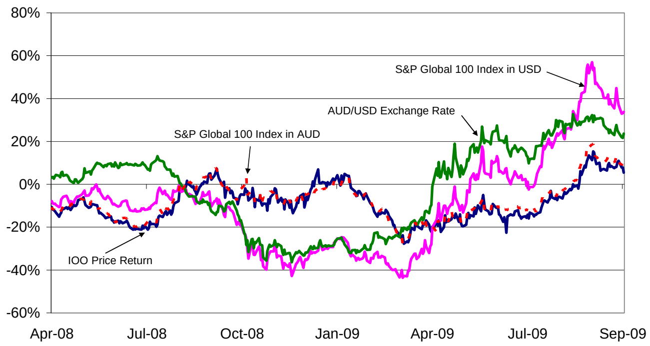


Chart 12. iShares S&P 500
Rolling 180-Day Returns

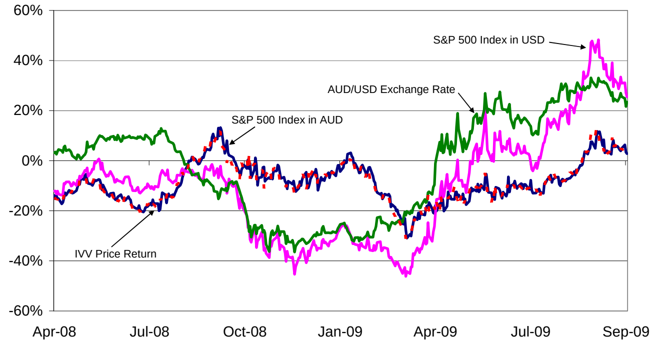


Chart 13. iShares MSCI Emerging Markets
Rolling 180-Day Returns

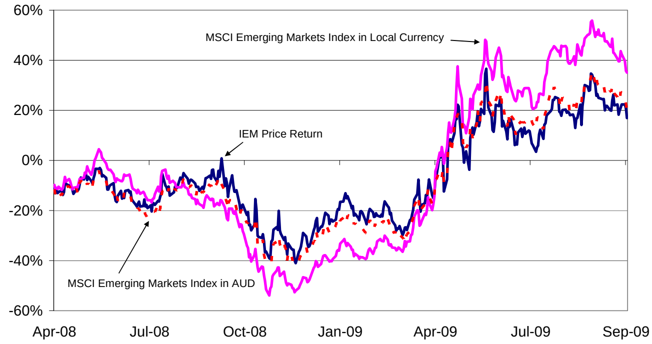


Chart 14. iShares MSCI Japan
Rolling 180-Day Returns

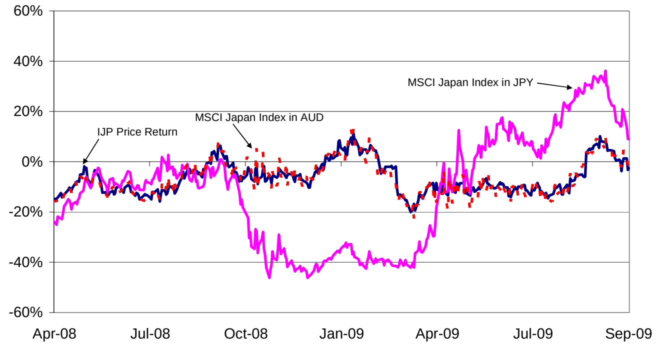


Chart 15. iShares FTSE/Xinhua China 25
Rolling 180-Day Returns

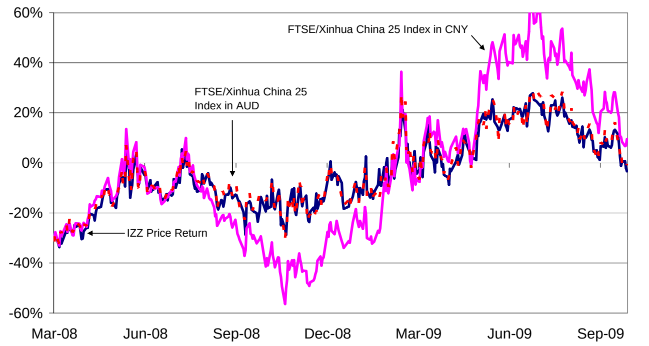
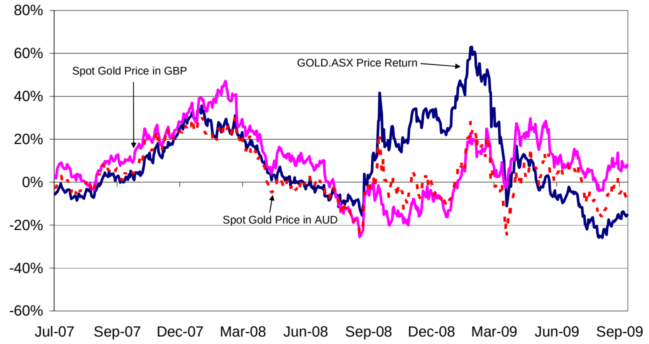


Chart 16. ETFS Physical Gold
Rolling 180-Day Returns



Sources: IRESS, MSCI, Bloomberg, RBA.

Charts 11 to 16 above show the following:

- The price returns of the equity-based ETFs has tracked the return of their relevant benchmarks, when converted to Australian dollars;
- Movements in the Australian dollar versus the US Dollar have had meaningful impacts on returns achieved by Australian investors;
- There have been three distinct periods of Australian dollar returns relative to the US dollar since iShares commenced trading in October 2007. When the Australian dollar was relatively strong to late July 2008, the ASX-listed iShares returned less than their US Dollar equivalent index. The Australian dollar was relatively weak through to March 2009 and this period corresponded to outperformance of the ASX-listed iShares relative to their US Dollar index. Subsequently, as the Australian dollar appreciated from its 9 March 2009 low of $US0.6318 to $US0.8826 at the end of September 2009, the ASX-listed iShares have underperformed the relevant indexes; and
- The price return of the ETFS Physical Gold security has broken from its expected relationship with the Australian dollar spot gold price since September 2008, with the GOLD.ASX security price potentially rising as local investors sought a safe haven away from listed equities in the distressed period of September 2008 to March 2009. It is notable that the security's return has been under the spot gold price's return in recent history.

The above analysis shows that it is vital to factor in a view on the expected return for the Australian currency versus the relevant underlying market currency when determining ETF positioning. As the returns from ASX-listed international ETFs are unhedged to movements in the Australian dollar, final returns to investors may be significantly impacted, particularly when the investment timeframe is relatively short.

ETFs in client portfolios

ETFs are an option for implementing passive equity or commodities exposure through ASX-listed securities. While the Australian market-based and gold ETFs have been trading on the ASX for some time, the recent addition to the range of ETFs to include international equity and other commodities represents a significant broadening of the opportunity set.

While the ease of creating exposures via a pooled open-ended listed vehicle may be attractive, it is important for investors to be aware of the implications of introducing ETFs on their asset allocation. Creation of actual exposures should be implemented according to the client risk profile. As many of the available ETFs cover concentrated markets and sectors, the expected risk characteristics of the underlying markets should be considered, particularly as the international exposure will not be hedged to movements in the Australian dollar and many of the markets covered may be relatively concentrated or illiquid. Overall, the principles of portfolio diversification and appropriateness to a client's personal situation should be followed when considering ETFs.

Exposures with ETFs are based on market indexes, without any expected outperformance (or alpha) from active management. Clients will be exposed to the unhedged performance of entire markets or sectors, including the "good" and "bad" constituents of those indexes. A criticism of market-capitalisation based indexes is that the weights applied to constituents in the index are a result of good relative past performance, encouraging more capital to flow to larger companies to the detriment of lower-weighted companies, some of whom may be strong future performers if they had greater access to capital. This argument is negated somewhat with the advent of smaller-cap indexes and active management options for clients.

We encourage a holistic view of the expected risk, return and cost proposition when considering entering ETF positions. As ETFs are ASX-listed there is a buy and sell implementation cost in the form of brokerage, a factor pertinent to an investor who makes relatively small transactions on a regular basis, for example a superannuation investor. Thus the expected return or payoff from an ETF position should consider the following:

- Expected return of the underlying index or commodity over the intended investment horizon;
- Expected return of the Australian dollar relative to the underlying investment currencies and the US Dollar;
- The expected efficiency of the ETF in tracking its relevant benchmark; and
- Implementation costs.

Potential uses of ETFs in client portfolios include the following:

- Implementation of a satellite exposure to countries, regions or sectors to express particular views on those markets;
- Maintenance of a core, passively-managed long position in broad markets, augmented with allocations to active

management which may include long-short and active currency decisions;

- Investing funds from an overweight defensive allocation to an underweight equities or alternatives (in the case of commodities) allocation prior to forming a particular view on individual stocks or managers (known as "equitising" an exposure); or
- Using ETFs to partially rebalance or implement shorter term asset allocation views over part of a portfolio, potentially augmenting an unlisted active global share fund allocation. As mentioned previously, the current range of ETFs does not extend over the full spectrum of asset markets typically held by diversified investors. As the range of ETFs broadens, we expect their usefulness as asset allocation vehicles to increase.

ETFs complement the range of investments we favour for implementing our active investment philosophy. For longer-term investors and those who make investments of large amounts relative to their entire investment balance, there is the potential advantage from most ETFs in the form of lower ongoing costs. For shorter-term investors, where a compelling prospective return (net of costs) has been identified, ETFs may enable a convenient creation and liquidation of a position. ETFs may be blended with other exposures, such as hedged international shares funds, global tactical asset allocation funds, direct equities portfolios or defensive holdings in cash or fixed interest portfolios.

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