A SMART SELECTION PROCESS FOR ETFs

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Logic might suggest that all ETFs replicating the same market index are themselves the same. And yet, you do not have to be an experienced ETF investor to know that this is clearly a misconception. In practice, performance can vary. It is necessary to know which objective criteria to use when selecting an ETF. Until recently, there was no satisfactory scientific answer to this question, but Lyxor's research teams have changed all that.

> "ETFs have attracted a growing numbers of providers to the market, leaving investors faced with a difficult question: how to select the most efficient ETF? Lyxor has developed an "ETF Efficiency Indicator", wich is a comprehensive solution used to compare and evaluate all ETFs"

Traditional selection tools are not suited to ETFs

Institutional investors, such as pension funds, insurance companies and balanced fund managers who rely heavily on trackers, have to bear this in mind when choosing the best ETFs for their portfolio.

They face a major challenge. The analysis tools traditionally employed for active fund selection are not suited to selecting ETFs. In its simplest expression, active fund selection is based on one fundamental criterion: the information ratio. This indicator measures a fund's return relative to its benchmark index, taking into account the relative risk taken compared with said index. However, using the information ratio to compare ETFs has a limitation which totally invalidates the analysis.

As a reminder, the information ratio is the ratio of outperformance (alpha) to tracking error (TE) volatility. In the case of ETFs, which replicate the index, the outperformance and TE figures are very low and the information ratios are therefore extremely sensitive, making traditional analysis irrelevant. Moreover, a product with a very low tracking error could easily be mistakenly ruled out on account of a weak information ratio, despite excellent index replication. Lastly, a product underperforming very slightly and with a very low TE will be ruled out on account of its negative information ratio, whereas a product with marginal outperformance will be retained even with a high TE.

A new framework for measuring ETF efficiency...

Basically, from an investor's point of view, a good ETF should maximise the chances of replicating index returns. The fund must also display a low bid-ask spread in order to preserve the profit on the trade. In fact, a suitable analysis framework for ETF selection derives from three fundamental parameters: an estimate of the performance gap between the fund and its benchmark (i.e. the tracking difference); the volatility of this performance gap (i.e. the tracking error); and the difference between the buy and sell prices (i.e. the bid-ask spread or "liquidity spread"). By applying Value at Risk (VaR) – now the most widely used measurement of risk – to these three parameters, it is possible to accurately measure the efficiency of an ETF.

In concrete terms, by using a one-year Gaussian VaR at a 95% confidence level, this efficiency measurement is expressed as follows:

Efficiency = Tracking Difference – Liquidity Spread – 1.65 x Tracking Error

For instance, if the efficiency of the ETF is equal to -50 bps, the probability that the investor faces a relative loss with respect to the index larger than 50 bps is exactly equal to 5%. Using this risk measurement therefore makes it easy to compare the efficiency of two ETFs. This model, which is described in detail in a research article available online at http://ssrn.com/abstract=2212596, and which was also published in Journal of Index Investing, works as follows. The higher the outperformance of an ETF, the better its efficiency, while a wider bid-ask spread makes it less efficient. Equally, higher tracking-error volatility increases uncertainty and thus makes the ETF less efficient. It is interesting to note that comparing ETFs by efficiency rather than by individual criteria available to investors (such as outperformance, daily spreads or volatility) produces different results. Therein lies the strength of this synthetic indicator.

ILLUSTRATION 1 - MSCI Emerging Markets Index Efficiency Indicator

The « ETF Efficiency Indicator » developed by Lyxor, releases a synthetic vision of the ETFs' performance, throught the simultaneous consideration of three most commonly used criteria:

- performance relative to the benchmark
- tracking error volatility
- liquidity spread

MSCI EMERGING MARKETS	NDUEEGF	Performance -6.86%			
Provider	**Ticker Bloomberg**	**Efficiency Measure (bps)**	**Tracking Difference (bps)***	**Tracking Error (bps)****	**Liquidity Spread (bps)*****
LYXOR	LEM FP	-0.95%	-0.77%	0.04%	0.12%
DB X	XMEM GY	-1.13%	-0.95%	0.04%	0.13%
UBS	EGUSAS SW	-1.34%	-1.02%	0.02%	0.28%
ISHARES (EX cs)	CSEM SW	-2.04%	-0.07%	1.02%	0.28%
ISHARES	IDEM LN	-3.01%	-1.34%	0.94%	0.12%

How to read – If an ETF has an efficiency measure of -90 basis points (bps), the probability that an investor faces a loss relative to the index of more than 90 basis points in a twelve month period is exactly 5%.

Source: Quaterly ETF Efficiency Indicator FY 2013
Period based on one year daily data from Dec 28 2012 / 31 Dec 2013

* Tracking Difference (in IOSCO terminology): Performance spread between the ETF and the benchmark
** Tracking Error (in IOSCO terminology): Volatility of the performance spread measures on a daily basis over a 1 year period
*** Liquidity spread daily average of the first limit order spreads weighted by volumes for each listing place
Each blue square shows which issuer is first for each component of the Efficiency Indicator

...taking account of institutional concerns

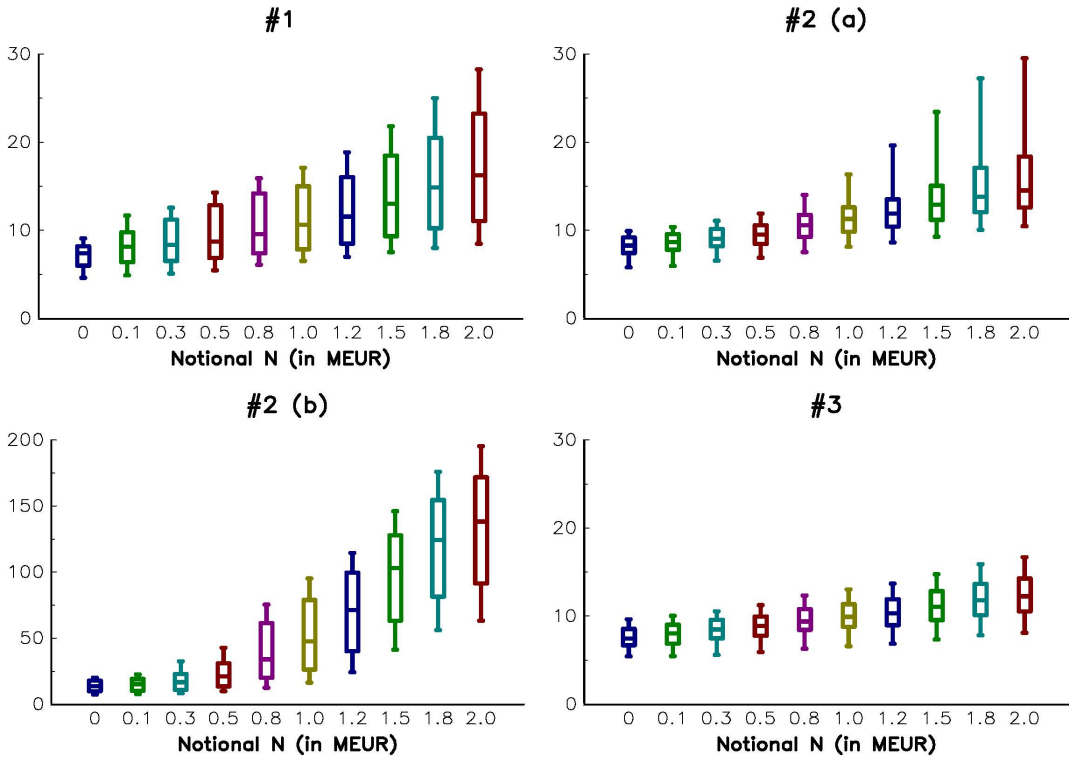
In the basic calculation for the efficiency indicator, we are using the best limit order spread for the liquidity spread. Yet, efficiency measurements can be refined in order to better reflect the daily realities of institutional investors. Such investors' orders can involve amounts running into tens of millions of euro. Even when split, they generally cannot be executed at the best limit. Based on order-book historical data, it nevertheless remains possible to measure the average bid-ask spread at which a given notional amount will be executed. This "liquidity spread" can then be reintroduced into the calculation of the indicator. Interestingly, depending on whether the analysis uses a notional amount of 100,000, 1 million or 2 million euro, the efficiency measurement pinpoints different ETF providers for the same index. This highlights the importance of ETF liquidity for investors.

ETF providers eager to bring the highest level of service to their investors must endeavour to improve the liquidity of their products in order to minimise the bid-ask spread. Having a large number of market makers is important for ETF liquidity. At Lyxor, everything is done to ensure that each fund is followed on average by nine market makers. In addition, in order to allow each investor to use the model presented in this article and select ETFs efficiently, it is essential that ETF providers publish material on the tracking-error volatility of their funds, in line with recommendations provided by the European Securities Market Association (ESMA), and that stockbrokers develop suitable statistical measures for understanding ETF liquidity spread.

ILLUSTRATION 2 - EURO STOXX 50 INDEX LIQUIDITY SPREAD

According to the attention paid to the liquidity of their products, ETF providers don't succeed in the same way in keeping tightened margins when important orders have to be executed.

Liquidity spread of differents ETFs following the Eurostoxx 50



Source: Measuring the liquidity of ETFs : An Application to the European Market, T.Roncalli / B.Zheng, Lyxor, March 2014 Study
Period based on one year daily data from Dec 28 2011 / 31 Dec 2012

(*) For each ETF, the x-axis represents the notional amount (from 0 to 2 million euro) whereas we report some statistics on the liquidity spread and the y-axis. For each notional, the ends of the whiskers correspond to the minimum value and the 90th percentile. The bottom and top of the box are the 1st and 3rd quartiles whereas the median corresponds to the line inside the box.

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