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Due diligence in index investing



Introduction

Index investment has long been favoured by investors for its rules-based approach that offers some level of predictability. It is an investment route for those not looking to time markets or to seek active management expertise to outperform certain markets. It comes with some level of certainty on movement of exposures over time through set rebalancing methodologies. This approach is typically associated with low management fees. Index investment also serves as an important foundation in portfolio construction.

In times of significant volatility as we saw in 2020, ETFs effectively became reliant price discovery vehicles. The significant volatility also highlighted that index investing too can require some level of active decision-making within the index ETF and the index it tracks. Some examples of such active decision-making can be seen in:

- Postponement of rebalancing schedules (which affected many equities and fixed income indices in the first half of 2020).
- Proposed changes to index methodologies to better address liquidity and offer flexibility to those tracking that index (this affected many oil futures and fixed income indices).
- ETF providers sampling within an ETF to better manage for short-term liquidity needs. Much of this type of active decision-making is already contemplated in ETF prospectuses and in index methodologies.

This begs a broader question on how different index ETFs within a category are constructed and what they may or may not be permitted to do. With over 1000 ETFs listed in Canada¹ and over 2,000 listed in the US², how do you pick which index ETF to use? Will all index ETFs within a category, (for example, US high yield), always act and perform the same way? Inception date, assets under management, management fees and ETF provider familiarity are all common criteria used by investors to choose index ETFs, but all index ETFs are not built alike.

Advisors and investors should consider a due diligence framework for selecting index ETFs, which include four key components: assessing index exposure, product structure, total cost of ownership and support offered by the ETF provider.



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Advisors and investors should consider a due diligence framework for selecting index ETFs, which include four key components:

- 1 Assessing index exposure
- 2 Product structure
- 3 Total cost of ownership
- 4 Support offered by the ETF provider



Section 1: Index exposure – what’s in a name

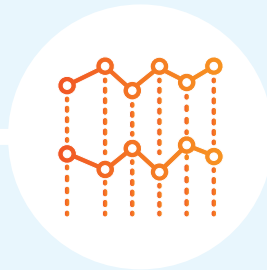
The first component is centred on exposure at the index level. There are some key methodology differences that can exist between one index and another. Does the ETF represent the exposure being sought? This should be a seemingly simple question to answer but not every

index is built the same. Weighting methodology, free-float calculation, timing of foreign exchange spot rates applied, tax schedule used, rebalancing frequency, and rebalancing schedule vary by index provider and can result in meaningful differences in performance outcomes.

There are three critical considerations that have a direct impact on performance of an ETF that tracks an index:



Rebalancing frequency and/or timing



Optimization techniques



Index construction as it relates to taxes and foreign exchange spot rates



Here we bucket some of the key drivers of index construction into five categories and reflect how that can impact your investment in an ETF that tracks that index. Many of these elements have direct impact on an ETF that tracks an index.

Let's use an example of an equal weight index, which rebalances quarterly. Every quarter, the index weights, which have floated over the past quarter, are brought back to equal weight. This means that every security in that index is traded (bought or sold). An ETF that tracks this index will have more turnover, more trading costs and the potential for higher capital gains or losses as compared to an ETF, which tracks a market cap weighted index.

	Index construction components	Can lead to
Security selection	<ul style="list-style-type: none"> Subjective versus rules-based approach Caps on sector or security concentration 	<ul style="list-style-type: none"> Turnover Capital gains Differences in returns of similar ETFs
Return calculation and weightings	<ul style="list-style-type: none"> Market-cap weighted Equal weighted Factor weighted 	<ul style="list-style-type: none"> Differences in returns of similar ETFs
Maintenance frequency	<ul style="list-style-type: none"> Frequency and timing of rebalances and reconstitution 	<ul style="list-style-type: none"> Turnover Capital gains Arbitrage impact from trading desks front-running scheduled rebalances on branded indexes
Style, sector and/or theme definitions	<ul style="list-style-type: none"> Number of indicators Composite scores for factors Sub-sector classifications 	<ul style="list-style-type: none"> Turnover Capital gains Style drift Differences in returns of similar ETFs
Market cap buffer zones	<ul style="list-style-type: none"> Packeting 	<ul style="list-style-type: none"> Turnover Capital gains

Source: Mackenzie Investments

This type of information can be found in index methodology documents that are publicly available through the index provider's website. An ETF provider should also be able to answer questions regarding index construction.



What's in an index brand?

An index provider's primary goal is to create, calculate and license market indices for tracking purposes by index funds and ETFs, as well as for benchmark data purposes. The index provider develops an index methodology to accurately calculate index levels daily and distribute the data. They also maintain the index on an ongoing basis by accounting for dividends, coupons and various types of corporate actions. They also ensure that the index is rebalanced on a timely basis and that the index is reviewed with some frequency, which is usually at least annually.

Licensing data from an index provider for index-tracking purposes is substantially higher compared to a data license for benchmarking or analytical purposes. Many familiar brands in indexing often reflect a premium in index-licensing costs not just for daily index data but also for their well-known brand and any marketing efforts that may be associated with their brand. Contrary to most other segments of asset management, index provider licensing fees have not seen the same type of fee compression over the past few years.

Many index providers typically charge a base flat fee as well as a variable component comprised of basis points on average assets within the ETF. They can also charge a baseline minimum cost after which point the variable component would be calculated. To provide a very prominent example of this cost, we can look at SPDR S&P 500 Trust ETF (SPY). According to its financial statements for the year ending September 30, 2020, SPY paid US\$85 million (0.03% on assets) in fees, plus a flat fee of US\$600,000 to license the S&P 500 Index. This was on a base of US\$294 billion in assets.³ Many index providers have come to market in the past 15 years that offer more attractive fee structures, such as a flat fee with no variable fees on assets within the ETF.

Sampling versus full replication

Historically, indices were built for active managers to benchmark performance against and not for index funds to track. Many indices, particularly within fixed income, reflect constituents that have minimal liquidity. ETF providers tracking such indices are often unable to fully replicate the index. In managing for a balance of tracking error versus trading costs, they choose to sample or optimize versus the index. Under this method, an ETF provider holds a representative sample of securities that reflect the characteristics of the index.

Though a common occurrence in some types of ETFs in Canada, it is important to note that there is a certain level of active management involved in sampling an index. A portfolio manager must decide daily as to which securities to include or exclude from the ETF as cash flows in or out of the ETF or at time of rebalance. However, more recently, some index providers have built investable indices that are more efficient to track by index ETFs, as they better reflect liquidity and accessibility of securities for investors.

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Index tax treatment versus ETF tax treatment

Another factor that impacts relative performance of an index ETF compared to the index it tracks is withholding tax. Withholding tax is deducted at source from dividends or interest income paid to shareholders that are not resident in the same country as the remitting company. Withholding tax may be reclaimed in part or in full if a double-taxation treaty exists.

Most index providers calculate indices using two standard tax schedules: net of tax (previously also known as lux tax) and US RIC. Net-of-tax reflects the maximum withholding tax rates applicable to institutional investors in calculating dividends.⁴ A US RIC tax schedule reflects withholding tax rates applicable to dividends received by a US Regulated Investment Company (RIC) domiciled in the United States (1940 Act mutual funds). Neither of these tax calculations reflect a Canadian tax schedule, which impacts Canadian-listed ETFs tracking such indexes. Some index providers such as Solactive, offer customized indexes to account for Canadian withholding tax rates at no additional cost, so that tracking error between ETF and index is not impacted by a mismatch in withholding tax calculations.

Section 2: Product structure

The second component of the framework is product structure. Advisors and investors should consider implications of an ETF's structure and country of listing.

An ETF can provide exposure by using derivatives, investing in other ETFs (listed in Canada or the US) or directly investing in securities. Each of these methods can result in varying impacts on the performance of an ETF relative to its index, as well as the tax impact on investors. The structure also impacts how an ETF trades, as well as how a portfolio manager oversees the ETF on an ongoing basis. These performance

Paying attention to FX spot rates and hedging methodology

Timing of FX spot rates applied, as well as hedging methodology, are further examples of seemingly minute differences in index construction that can materially impact tracking error during different time periods.

For indices calculated in currencies other than the US dollar, many index providers strike an FX spot rate from US to Canadian dollars at 11 a.m. ET (or London close). Using London close spot rates for indexes with global ex-North America equity and fixed income exposures is appropriate for many global currencies being converted back to the Canadian dollar.

However, this is not the case for US equity and fixed income exposure. The US/Canadian dollar can effectively be calculated using the end-of-day spot rates for the New York/Toronto trading day. Canadian-domiciled ETFs that track such indexes typically strike FX spot rate from US to Canadian dollars at the close of ETF trading at 4 p.m. ET. If the index strikes at 11 a.m. ET, versus the ETF at 4 p.m. ET, tracking error impact can be felt as a result of rate differences between those times. For 2020, the standard deviation of the difference between 11 a.m. ET and 4 p.m. ET rates was 0.173%.⁵

impacts are further contemplated in the third component of this framework: total cost of ownership

US-listed ETFs have historically been popular with Canadian investors due to low expense ratios and high levels of secondary market liquidity. However, there are meaningful tax and currency considerations for many types of investors. When purchasing US-listed ETFs or Canadian-listed ETFs that invest in US-listed ETFs, consider withholding tax implications on distributions made by the US ETF to the Canadian taxpayer, as well as at the underlying level within the US-listed ETF.

This table reflects the type of exposure, product structure and account type within which the ETF is held, and shows the withholding tax impact on any distributions received.

ETF structure	Account type					
	RRSP, RRIF		TFSA, RDSP, RESP		Taxable accounts	
	Level 1 tax (Underlying ETF/ exposure)	Level 2 tax (If applicable)	Level 1 tax (Underlying ETF/ exposure)	Level 2 tax (If applicable)	Level 1 tax (Underlying ETF/ exposure)	Level 2 tax (If applicable)
US equities						
US-listed ETF	N/A	X	N/A	✓	N/A	TC
Canadian-listed ETF (holding US-listed ETF)	N/A	✓	N/A	✓	N/A	TC
Canadian-listed ETF (investing directly in US equities)	N/A	✓	N/A	✓	N/A	TC
US fixed income (qualified interest income only)						
US-listed ETF	N/A	R	N/A	R	N/A	R
Canadian-listed ETF (holding US-listed ETF)	N/A	R	N/A	R	N/A	R
Canadian-listed ETF (investing directly in US fixed income)	N/A	X	N/A	X	N/A	X
Foreign equities and fixed income						
US-listed ETF	✓	X	✓	✓	✓	TC
Canadian-listed ETF (holding US-listed ETF)	✓		✓	✓	✓	TC
Canadian-listed ETF (investing directly in foreign equities & fixed income)	✓	N/A	✓	X	TC	N/A

✓: Tax will apply. X: Tax will not apply. TC: Tax credit is available. R: Reclaim is available. Level 1 tax: Withholding taxes applied by the foreign country where the shares in the ETF originates. Level 2 tax: Withholding taxes applied by the US to ETFs that pay dividends to non-US shareholder.

Source: Mackenzie Investments

Let's look at US withholding taxes using the example of emerging markets debt and an investment in a US-listed ETF to achieve this exposure.

Certain types of debt within emerging markets are subject to withholding taxes that look more like tax on equity distributions versus tax on fixed income distributions. Investments in US-listed ETFs or Canadian-listed ETFs that hold US-listed ETFs with international fixed-income

exposure would be subject to foreign withholding taxes and US withholding taxes on all distributions. The US withholding taxes are an additional layer of taxes reducing the overall return for the investor without providing any value. These US withholding taxes paid can only be recovered through the foreign tax credit mechanism available for investments held in taxable accounts. This punitive tax result can be avoided using Canadian-listed ETFs that invest directly in international fixed income.

In the case of an ETF such as iShares J.P. Morgan USD Emerging Markets Bond ETF (EMB) with a 12-month trailing yield of 4.05% (as of Mar 2, 2021), there is a tax drag per year of approximately 0.61% at Level 2 for certain types of accounts.⁶

Another important consideration is foreign exchange impact and hedged offerings. Investors purchasing US-listed ETFs do not have an option to purchase CAD-hedged equivalents. The Canadian ETF market now also offers many ETFs listed and trading in US dollars. By buying on a Canadian exchange, investors and asset managers also often have access to CAD-hedged ETFs as needed.

A note on securities lending

Securities lending is a common activity for many ETFs in the Canadian market and globally. Since 2001, the Canadian Securities Administrators (CSA) have permitted funds and ETFs to engage in securities lending. Securities-lending arrangements are subject to the lending guidelines mandated by mutual fund regulations.

Section 3: Total cost of ownership

The third component of the due diligence framework is total cost of ownership. Often investors compare management fees or management expense ratios (MERs) across ETFs in a category in considering the ultimate decision on which ETF to purchase. While management fees and MERs are an important reoccurring cost for investors, they are certainly not the only costs to consider. This particularly resonates for categories where the fee differences between ETFs are minor or non-existent. The total cost of ownership for an ETF also includes both costs arising from trading the ETF as well as costs embedded in ETF performance. These trading-

An ETF can lend some of its eligible securities to other investment dealers and financial institutions. As articulated within a Securities Lending Agreement, the ETF charges a fee for the loan and receives collateral in exchange for the loan. The ETF also continues to earn the return on any securities that are lent out. These components of securities lending revenue can contribute to the ETF's overall return, ultimately helping to tighten tracking error in traditional index ETFs.

Information on securities lending policies can be found within prospectuses and securities lending agreements. Historical securities lending revenue for ETFs can also be found within the ETF's financial statements. This data can help assess how much of an ETF's excess return would have been contributed by securities lending revenue.

Of course, securities lending has been a long-standing practice for many decades by global banks, asset managers and other institutional investors. However, as it relates specifically to ETFs, there are some key differences in practices globally. In the US, ETF providers can retain some portion of securities lending revenues. However, an asset manager in Canada is not permitted to retain any portion of securities lending revenues. All revenues must be used to the benefit of unitholders within the ETFs.

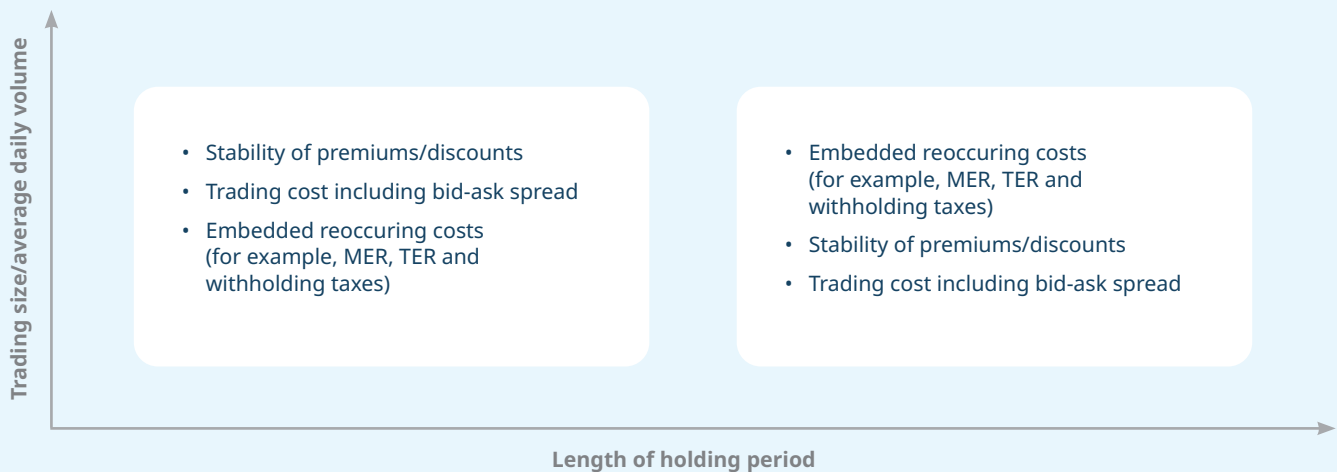
related and embedded costs are weighed differently for investors depending on how long they are considering investing in the ETF.

Costs arising from trading the ETF generally include; the bid-ask spread; premiums or discounts of market price to the net asset value (NAV) of the ETF; and any brokerage commissions to execute the trade. These costs can be considered more periodic in nature, only occurring when buying or selling the ETF. Typically, the shorter the hold period, the more such transaction costs matter from a total cost of ownership perspective.



Arguably, the more meaningful set of costs for investors tend to be those that are embedded in the performance of the ETF on a regular basis. The longer the investment period, the more these embedded costs matter. These costs typically include management expense ratio (MER),

trading expense ratio (TER), and taxes (inclusive of capital gains or losses and withholding taxes). Investors should also keep in mind that the structure of an ETF and the index it tracks can have impacts on ETF transaction costs, including rebalancing costs experienced by the ETF.



Source: Mackenzie Investments

While keeping costs low in index investing is essential, so is performance. Index investors seek the tightest possible tracking to index performance. Performance of index ETFs can be measured by two data points: tracking difference and tracking error. Tracking difference is the cumulative excess return (the ETF return minus index return) whereas tracking error is the annualized standard deviation of the

daily excess return (focusing on volatility in the difference of the performance between the ETF and its index). A portfolio manager on an index ETF is attempting to match, as closely as possible, the performance of the index. However, tracking difference is rarely flat as there are several factors impacting an ETF from perfectly mimicking its index.



To compare tracking differences across similar ETFs, it is helpful to understand some factors that may impact performance:

- 1 Trading expenses, particularly during rebalancing and in raising cash to make distributions.
- 2 Cash flow management and the investment of dividends/income from underlying exposures.
- 3 Rebalancing frequency and timing as defined by the index methodology and how a manager trades around the rebalance dates.
- 4 Optimization techniques defined by the index and/or implemented by the portfolio manager.
- 5 Treatment of withholding taxes, timing of spot rates and foreign exchange rates as defined by the index methodology.
- 6 Cost of hedging and timing of monthly hedge roll (relevant for hedged ETFs).
- 7 The contribution of revenue generated from securities lending activities.

A final word on the role of ETF providers

The role of ETF providers is not only to provide well-built investment solutions that help investors to achieve their investment goals. ETF providers have a responsibility to provide valuable perspectives and ETF education. Understanding the index construction and ETF exposure is important but understanding how an ETF provider will manage the ETF over time and through market volatility, provide investment insights and product support is also important. Consider the ETF provider's experience, expertise, and commitment to the ETF industry, as well as their relationships with partners, such as liquidity providers or market makers, through which clients ultimately trade.

Index ETFs vary in how they are constructed and managed, which can impact performance outcomes in challenging markets. Total assets, on-screen volume and management fees are common comparison metrics but should not be the only ones upon which an investment decision is made. Ultimately, an advisor or investor needs to weigh a number of considerations in the due diligence process when selecting an appropriate index ETF for a portfolio. This framework of considering exposure, product structure, total cost and fund provider can help advisors and investors in the due diligence exercise of selecting the right exposures for their portfolios.

1 Bloomberg: February 28, 2021

2 ETFGI: February 28, 2021

3 <https://www.ssga.com/us/en/intermediary/etfs/resources/doc-viewer#spy&annual-report>

4 https://www.msci.com/eqb/methodology/meth_docs/MSCI_May12_IndexCalcMethodology.pdf

5 Bloomberg: December 31, 2020

6 Mackenzie Investments, iShares

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