

Exchange-Traded Funds: A Primer

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EXCHANGE-TRADED FUNDS: A PRIMER

By Don Ezra

This is the first piece in a series on Exchange-Traded Funds, simply explaining what they are and how they came about. Future pieces will deal with their uses for both retail and institutional investors.

This piece benefits enormously from extensive input from Zev Frishman, Chief Investment Officer, and Muhammad Iftekhhar, Senior Analyst – Investments, Trading and Operations, reflecting their practical familiarity with the instruments.

We hear both ends of the spectrum in the industry, from “those useless, passive vehicles” to their being almost a magic bullet for all problems. Neither end is accurate. In this piece, we’ll give you a primer on ETFs: what they are, what they can do, what they can’t, even why they were necessary to be created at all.

What are ETFs?

We’ll start at the start, with the name: exchange-traded funds. That tells us two things. They’re funds. And you can trade them on stock exchanges. Both of those statements have consequences.

First, that ETFs are funds. That means they’re not individual stocks; indeed they need not be stocks at all, just securities bundled into portfolios. In that sense, they’re like mutual funds, commingled funds, pooled funds, and so on. But they trade just like stocks.

Right away, that should dispose of one criticism: that ETFs are a bubble. They can’t be a bubble, in themselves, any more than a portfolio can be a bubble. Some of the holdings may prove to be bubbles; but a portfolio can’t be a bubble in itself.

And it should also dispose of the view that there are good times and bad times to buy ETFs. As collective holdings, they should be as attractive or as repulsive as their holdings.

What are the holdings? Who selects them? As with any portfolio, those are aspects that should be investigated and understood before buying an ETF. We’ll get into some detail on this aspect, later.

Now for that second characteristic, that these can be traded on stock exchanges. That’s very unusual. You can’t trade a mutual fund: you can buy units, you can redeem units, but your transactions always have the provider (the creator) of the mutual fund as the other party. As we’ll see later, the same sort of thing is feasible with ETFs, but you can also trade them with a willing buyer or seller, as you can with a single stock.

It's usually pretty easy to find a willing buyer or seller for a single stock. But where would you find someone whose portfolio you'd want, in total, or who would want to buy yours from you? You wouldn't, normally: it's as simple as that. Unless ... the portfolio has pre-defined characteristics, it reflects those characteristics precisely, and those are exactly the characteristics that you and the other party are jointly interested in.

In turn, that means that, in practice, an ETF needs to have a narrow and well understood definition. So: matching an index, matching a factor exposure, that sort of thing, typically. In fact, that's where the passive accusation originated.

But, as we'll see, ETFs are way past this stage today. "Passive" is now an out-of-date accusation. In Canada, the number of ETF providers has tripled in the last two years, and you can find pretty much any exposure you want, active or passive, using ETFs.

Why do ETFs exist at all?

Let's ask a fundamental question: what was the gap in the investment marketplace that caused the birth, or at least the spread, of ETFs? After all, they're an instrument, and they have no use unless they solve a problem in a way that other instruments can't. We need a little bit of history for this aspect.

I'm old enough to remember the 1970s, when the norm was what we called balanced fund management. One manager was hired to manage the whole fund, with whatever asset allocation he or she chose. Manager diversification meant having two or three balanced fund assignments.

Gradually research showed us a couple of things. One was that broadly defined asset classes really did have different return and risk characteristics, and that if an investor (or investment committee or board of trustees) had specific ideas about risk tolerance, those could be expressed, and needed to be expressed, in the form of a long-term asset allocation policy. So asset allocation was taken out of the hands of managers, except for tactical shifts. The other thing we learned was that managers aren't necessarily equally skillful at adding active value in every asset class.

And those two findings gradually became the underpinning of the approach in which sponsors (frequently with their consultants) set asset allocation policy, and hired specialist managers.

Of course, having to understand asset classes was more complicated than simply looking at the fund as a whole, but once the added complexity was mastered, it was well worthwhile because of the greater control it gave in understanding risk exposure.

This approach survived for decades. It often takes a generation for a major advance to become common practice, led by the larger funds, then spreading to all funds. That's what happened in the earlier gradual conversion from balanced fund to specialist management.

And then came the global financial crisis in 2008, and it brought home some lessons. It confirmed findings of earlier academic research (for example, by Mandelbrot) that distributions of returns aren't normal, they have fat tails. Correlations aren't constant, and they tend to approach +1 just when diversification is most needed. Asset classes don't have risk exposures that are constant over time — their risk characteristics vary over time: at some times an asset class is more risky than it usually is, at other times less risky.

All of this is because asset classes aren't as discrete and non-overlapping as they're traditionally modelled. Asset classes are in fact collections of multiple risk factors, and some of those risk factors are common to many asset classes. And so, when a particular common factor is driving returns, correlations rise, and diversification loses some or much of its potential for risk control. And depending on which factors are driving returns, an asset class can seem more risky or less risky than usual.

For example, the global financial crisis itself arose from what was globally a relatively small thing. It was the US housing sector that had a crisis, with subprime mortgages in default. But their securitization caused the impact to be widespread among asset holders, leading to a big change in their attitude from “risk on” to “risk off” – in other words, reduce risk. Volatility rose from lower prior levels. And as that attitude spread rapidly around the world, all stock markets responded in the same direction, and the traditional benefit of diversification vanished. In calmer times, growth is anticipated, with some sectors (like tech) and small companies expected to benefit more than most. At other times, when interest rates change unexpectedly, the financial sector and utilities tend to be more affected than other sectors – as well as bonds, of course, which then correlate more with those sectors than with other sectors of the equity market. And so on.

That made us understand that we needed to move to another level of complexity, where the basic elements aren't asset classes but risk factors. Yes, this meant, yet again, more complication. But it gives us greater awareness of our risk exposures, which in turn should enable us to control risk better. And, because you could buy and sell asset classes through index funds, but you couldn't buy and sell factor exposures, factors could be inconsistently priced relative to one another, giving rise to desired tactical shifts to exploit that mispricing. If only ... if only you could trade factors!

Aha, you saw this coming, didn't you? It became clear that some bright spark should create instruments that could be traded and that reflect exposures to specific factors: that would be useful!

No big surprise, now. Enter ETFs, for which a clear need existed (factor exposures and trading), a need which no other instruments satisfied.

No surprise, again, that ETFs started to gain popularity, and indeed take off, after the global financial crisis. No surprise, again, that it was the large funds that led the way. (And, as a side note, no surprise that when ETFs became popular, pooled funds also started reflecting these characteristics.)

Here, for confirmation, are extracts from the executive summary of an April 2018 report from Greenwich Associates, the leading provider of market research relating to the financial services industry.¹ They've been around a while: they were founded in 1972 by industry legend Charley Ellis.

The survey covered large institutions in the United States; 45% have assets under management in excess of US\$20 billion, and roughly 20% are over \$100 billion. The aggregate assets of those surveyed exceeded US\$11 trillion. Yes, this is where the trends in changing practice start.

- “44% of study participants invested in non-market-cap-weighted/smart beta ETFs in 2017.”
- “Institutions are making greater use of ETFs in strategic portfolio functions. They are using ETFs to obtain investment exposures in ‘core’ portfolio allocations, and as building blocks in top-down strategies that create alpha through asset allocation, as opposed to security selection.”
- “Institutions continue relying on ETFs as a liquid, fast and relatively low-cost tool in a wide range of tactical tasks, such as managing cash flows and making tactical changes to their portfolios.”
- “About a third of current ETF users in the study plan to increase allocations to the funds in the coming year, and significant shares of non-users say they are likely to start investing in ETFs in the next 12 months.”

The role of ETFs today

Let's take a breath and look at the significance of what the survey tells us.

- ETFs are in widespread use, at the largest funds.
- They have a top-down strategic role.
- They are also used as convenient short-term tactical instruments. In fact, these days active management is not restricted to the traditional skill of security selection. Tactical shifts are also deemed to constitute active management. (In addition, ETFs are used for interim exposures in between active manager changes, and sometimes as a passive substitute for traditional active mandates.)
- When specific factors are deemed to be overpriced or underpriced relative to their long-term values, appropriate tilts can be made. It isn't necessary for an entire asset class or country to be deemed to be mispriced.

¹ “ETFs: Valuable Versatility in a Newly Volatile Market” by Greenwich Associates (2018). Quoted with permission.

- ETFs are useful for convenient non-market-cap-weighted exposures, and also for what are termed “smart beta” exposures. Mind you, there’s no precise and accepted definition of smart beta (just as there isn’t for an asset class, either). But formula-based exposure to factors would fall under this heading.
- ETFs increase the speed and efficiency of rebalancing across asset allocations because of their quick execution and intraday trading capabilities.

Wait a minute, this is now starting to suggest that ETFs are indeed a panacea. No, they’re not. Let’s identify some of their limitations. Two are particularly important. Let’s discuss liquidity and complexity.

How ETFs are traded and priced

ETFs are not as widely held as individual stocks. Virtually all institutions hold stocks; half of the largest institutions use ETFs. One might sense, then, that ETFs aren’t as liquid as stocks. But in practice, ETFs have adequate liquidity for their purposes. In fact, typically bond ETFs are more liquid than individual bonds.

It’s worth understanding, then, how ETFs are traded, and what happens if they are priced differently from the aggregate of their underlying positions.

As with individual stocks, there are lead market-makers (designated brokers) in ETFs. Seed capital is supplied, and the ETF provider takes the subscription order from the market-maker and buys the underlying securities. So the market-maker is “long” the ETF unit, and therefore, to hedge their risk, they “short” the underlying securities.

After the initial seeding, the ETF can be traded on primary or secondary markets, just like stocks. If supply and demand are uneven, or if the bid/ask spread is very wide, or there is mispricing between the ETF and the underlying holdings, the market-maker can act as intermediary, buying from you (if you desire to sell, for example, and can’t find a buyer) and going to the ETF creator to retire those units – and of course, in the reverse, asking the creator to create new units to sell to you if you can’t find a seller.

The consequence is that, although some new instruments have limited liquidity, there’s usually ample liquidity because of that ability to create and redeem units. Certainly in the last few years we haven’t found any inability to transact.

I mentioned pricing, and specifically the possibility that the ETF seems to be priced differently from its underlying holdings. That would create arbitrage opportunities, so why would this occur?

It typically doesn’t, precisely because there are arbitrageurs, who would exploit it. Rather than let an arbitrageur make a profit, the market-maker can take action. For example, if an ETF trades at a noticeable discount to its net asset value (that is, the aggregated value of its individual holdings), the market-maker can unwind the ETF units,

sell the underlying holdings and buy the ETF. This ability to create and redeem ETF units makes mispricing rare.

But mispricing can occur when trading ETFs with foreign exposure. For example, if you are trading on the TSX for an emerging market ETF, emerging markets close at a different time from the TSX, so there's the risk of a change in the fair price between the time of your trade and at the emerging market close. In practice, these deviations typically take place within the bid/ask spread. In turn, these spreads are typically low, sometimes as low as a single basis point.

Management fees are typically much lower than for mutual funds. Because ETFs are exchange-traded, there's no need for the distribution fees that get layered into traditional mutual funds. They are also cheaper to run, as there is no need for keeping ownership records. So, because they cost the fund companies less to run, they cost investors less to own.

In addition, competition has driven down fees. The MER may be of the order of 5 bps for broad US market exposures, like small cap. In Canada MERs are perhaps 5-10 bps higher. The significantly smaller market lacks the same economies of scale.

The need to research and understand specific ETFs

Remember that an ETF is essentially a tradeable portfolio. If you don't understand what's in the portfolio, and why, it becomes a potentially dangerous instrument, just as would be the case if you were to hire an active manager without research.

These days it's pretty well understood what an index fund is, even if it's difficult to set out exactly what are the principles that dictate when a security is added to the index, when it is removed, and what weight it is given. All those rebalancing rules are vital, but typically investors don't care much to investigate or understand the intricacies; they have a good enough general idea, and it suffices.

That's the benefit of all those years of setting asset allocation. Go back to the early 1970s, and index funds weren't as well understood, their algorithms needed to be researched, they weren't as common, and they weren't yet an automatic, convenient way to get exposure to an asset class while active managers were being researched or whatever other long-term exposure was desired.

That's how it started with ETFs too, in a sense. But ETFs will always be tougher to understand, simply because there are so many possible ways to define factors, so many ways to decide on an algorithm to govern how the ETF is populated with holdings, and so on.

Algorithm construction requires as much and as deep research as traditional active management. How was it decided that a particular factor had value as a stand-alone exposure? What did the provider look at? Over what data set was the value established? How many market cycles or crises were tested?

Nevertheless, as a general rule we think (this is just our opinion) that it's easier to feel confidence in a particular algorithm than in an active manager's gut feeling!

And who knows, it's on the cards that there will be AI-based algorithms, where the algorithm itself will change as a result of its learning.

In other words, the need to research each ETF will never cease.

You may have gathered from some of the detail that we know about ETFs and have been around them and researched them and dealt in them for some time. All of that is part of what we consider essential due diligence and practice in our field.

So, for example, we also keep track of performance, and pay a lot of attention to fixed income ETFs. They focus on duration, spread and liquidity, and we find that fixed income ETFs provide an efficient way to adjust duration and credit exposure.

That's in addition to equity ETFs, where most of the attention focuses on factors like quality, value and low volatility. While you can create your own mixtures of these factors, there are popular packages that equal-weight those three factors. In fact, multi-factor ETFs are increasingly popular; and today there are many dynamic rules-based and even traditionally actively-managed ETFs too.

As an aside, a word of warning here. When an ETF is used as part of an aggregate portfolio, its construction should be reflected in its benchmark. It doesn't make sense, for example, to use a specific factor exposure and treat it as a full asset class substitute, with the asset class index performance as its benchmark. That will inevitably result in apparently large tracking error relative to the benchmark. That's not the fault of the ETF, it's the inappropriate benchmark that's at fault. It's easier to understand if we go back to the days when asset classes were everything: using an equity benchmark for fixed income exposure reveals large tracking error, but it's not the fixed income portfolio's fault.

Our own experience with ETFs

A word about ourselves, first, as background. Morneau Shepell has been providing all aspects of investment consulting services for over 35 years. Over time, as their regulatory, investment and oversight functions have become more onerous and complex, our clients wanted more than advice. MS ARM Ltd., a wholly owned subsidiary of Morneau Shepell, was formed to offer hands-on investment experience and expertise. We use a range of manager-of-managers, delegated consulting and OCIO (outsourced Chief Investment Officer) models. We offer an open-architecture approach, where MS ARM Ltd. constructs an investment program on a completely customized basis; we also offer the option for clients to invest in funds that we have established, comprising multiple underlying portfolios.

We employ ETFs within our funds and our discretionary client portfolios. We consider ETFs a valuable portfolio management tool, as the speed and efficiency of trading allows our portfolio managers to hold less cash for liquidity purposes in client accounts.

To generate alpha with ETFs, MS ARM focuses on three techniques.

One, you will have guessed, is reducing costs. It's more reliable than generating excess performance.

The second is making tactical calls on broad market ETFs. ETFs just make it easier to make quick tactical changes to the portfolio.

The third is factor tilts. So-called "smart beta" ETFs give more versatility than being forced to use market-cap-weighted indices, so we can break the link between price and portfolio weight through alternative weighting methodologies.

Conclusion

We hope you have enjoyed this primer on ETFs. And yes, it really is a primer. Our message is that ETFs are useful instruments in establishing strategy and also in executing it. We would like all our clients to feel comfortable with their use as an *additional* portfolio tool.

Author Biographies:

Don Ezra

Independent Board Member

Don recently joined the Morneau Shepell Asset & Risk Management Ltd. Board of Directors as the first independent director. He currently provides consulting services as well through Don Ezra Consulting Services, Ltd. (2010 – present). Prior to this Don served as Co-chair of Global Consulting at Russell Investments (NYC) & Director of Investment Strategy for its Americas institutional division (1984-2010). Before joining Russell, Don worked as a life insurance actuary in England and as a pension investment consultant in Canada, and he served as vice president of the Canadian Institute of Actuaries.

Don is a widely published author in the pension fund industry. In addition to numerous articles and papers, his books include *Understanding Pension Fund Finance and Investment* (1979), *The Struggle for Pension Fund Wealth* (1983), *Pension Fund Excellence* (1998) and *The Retirement Plan Solution: the Reinvention of Defined Contribution* (2009)

Don won a Graham and Dodd Award from the Financial Analysts Journal and the Roger Murray Prize from the Q Group in the U.S. In 2004, he was given the Lillywhite Award of the Employee Benefit Research Institute. Don was an appointed delegate to the

National Summit on Retirement Savings in both 2002 and 2006, and an at-large delegate from New York State to the White House Conference on Aging in 2006.

Don holds a B.Sc., Mathematics, Calcutta University and a M.A., Mathematics and Economics, Cambridge University. He is also a Fellow of the Institute of Actuaries.

Zev Frishman

Chief Investment Officer

Zev is Chief Investment Officer with MS ARM in its Toronto office and has over 35 years of investment-management experience. Previously, he served as Executive Vice President and Chief Investment Officer with Open Access Limited. Additionally, he was a member of the Ontario Teachers' Pension Plan investment team for 18 years.

Zev has extensive experience in all aspects of fund management – development of policies, strategic and tactical asset mix, risk management, selection of external managers, as well as internal management of global equity and overlay of derivative portfolios.

He is a regular conference speaker on a variety of investment management topics and wrote several articles for Benefits Canada, the Canadian Investment Review, the Brandes Institute, Non Profit News and others on a variety of investment topics. He also received the 2010 Benefits Canada award for outstanding achievement and is on the 2010 list of "Top 25 Most Influential Plan Sponsors."

Zev holds a B.A. in Economics and Statistics (Cum Laude) from the Hebrew University in Jerusalem, Israel, a M.Sc. in Economics from the Israeli Institute of Technology and has completed PhD comprehensive exams in finance at Simon Fraser University in Vancouver, BC. He is a graduate of the Institute of Corporate Directors. He is currently a member of the Brandes Institute Advisory Board, the Canadian Investment Review Advisory Board, and is a Crown Trustee of ONE-T (Ontario Non-union Education Trust – the Principals' and Vice-Principals' Associations and other non-unionized employees Employee Life and Health Trust). He also served for 5 years as a board member and treasurer of a not-for-profit organization.

Muhammad Iftekhhar

Senior Analyst – Investments, Trading and Operations

Muhammad is the Senior Analyst, Investments, Trading and Operations at MS ARM. He joined the firm in 2016 and supports the firm's Investment Operations, Trading Desk and ETF research. He is responsible for managing several of MS ARM's key relationship with Service Providers including Brokerages, Custodians, Auditors and External Fund Managers.

Muhammad is MS ARM's primary person related to trading ETFs and FX trading strategies. In doing so, he conducts ETF research in a variety of asset classes including equities, fixed income and real assets. He is also responsible for assessing ETF strategies for inclusion in MS ARM's outcome-oriented investment solutions. He is also responsible for the firm's Investment Operations department including but not limited to, settlements, cash flow management, NAV reconciliation, client reporting, portfolio analysis and project management and implementation.

Muhammad has more than five years of experience working for another major consulting firm in different capacities and most recently supported their investment consulting practice. He holds a Bachelor's degree in Business Economics from York University and has also completed a Professional Certificate in Accounting. Muhammad is a CFA charterholder.