

ETF Exchange Podcast

Episode 30 - Rough Transcript

Announcer: Hello and welcome to The Fidelity ETF Exchange, powered by Fidelity Connects, a Fidelity Investments Canada Podcast, connecting you to the world of investing, and helping you stay ahead.

In this episode of the Fidelity ETF Exchange, host Étienne Joncas-Bouchard and guest Andrei Bruno, Director ETF Capital Markets at Fidelity Canada, sit down to discuss the intricacies of the ETF vehicle.

As you may know, ETFs have played an important role in the portfolios of Canadian investors for more than 20 years, yet there still remains some misconceptions and misunderstandings about their structure.

Notable topics discussed by Etienne and Andrei today include the main differences between ETFs vs. Mutual Funds, the role of the market maker, and best practices for trading ETFs.

Today's podcast was recorded on June 9, 2022.

The views and opinions expressed on this podcast are those of the participants and do not necessarily reflect those of Fidelity Investments Canada ULC or its affiliates. This podcast is for informational purposes only and should not be construed as investment, tax, or legal advice.

It is not an offer to sell or buy, or an endorsement, recommendation, or sponsorship of any entity or security cited. Read a fund's prospectus before investing. Funds are not guaranteed. Their values change frequently, and past performance may not be repeated. Fees, expenses and commissions are all associated with fund investments.

[00:01:39]

Étienne Joncas-Bouchard: Hello everyone and welcome to the Fidelity ETF Exchange. I'm your host Étienne Joncas-Bouchard, a.k.a. EJB. Very glad to be back in this little home studio and recording another episode of the Fidelity ETF Exchange. We have a special guest on today who's previously actually co-hosted this podcast with me and has now moved on to a new role at our firm. So very excited to get to talk about kind of his new role, the stuff that him and his team are doing, as well as to get his insights on ETF market-making, ABCs of trading ETFs. I think it's going to be a really valuable episode from a knowledge standpoint for anybody starting to trade ETFs or somebody who's traded ETFs for a while that just wants to get a bit more in-depth knowledge on the functioning and the mechanics behind whether that's the creation redemption process, whether that's best execution and much more. So, our guest is Andrei Bruno. Andrei, welcome to the show.

[00:02:39]

Andrei: Thank you so much for having me back, EJB Appreciate it.

[00:02:43]

Étienne Joncas-Bouchard: My pleasure, as always. And we'll get right into the heart of the subject in a couple seconds. I just want to quickly recap our last episode, which was a really fun episode, I'd say for me especially. I hope our guest enjoyed it also. We had Eric Balchunas join us, senior ETF analyst at Bloomberg. It was a great discussion on various trends, his insights on the active versus passive debate. Looking at what's working and what's not working in ETF land, kind of the regulatory also picture in the U.S. versus in Canada. So lots of good insights that can be found in that episode, which for anybody listening right now you can go and find under Fidelity Connects on your favorite podcast app or on www.fidelity.ca.

Alright. So, without further ado, Andrei, let's get into it. So, you recently started this new role: director ETF Capital Markets for Fidelity Canada. Can you give us a bit more information about what this role is exactly? And like I was mentioning earlier, how you and your team can help support advisors and investors across the country.

[00:03:50]

Andrei: Yeah, absolutely. So, in my new role what I do is I help with driving and shaping the ETF lineup as well as I work closely with internal PMs, internal sales teams, third-party market makers or authorized participants to support the orderly operation and execution of our ETFs in primary and secondary markets. I'm also supporting efficiencies in product design, listing of our ETFs' quotation and overall operations of our ETFs. So, really just getting into the nuts and bolts of how these ETFs operate and making sure everything's working well and functioning properly as well as just to promote a good investor experience for our clients as well.

[00:04:36]

Étienne Joncas-Bouchard: Great. So yeah, making sure the machine is well oiled pretty much on the ETF front here in our business, which is great because we do have an expanding lineup here. So for anybody, obviously, that's maybe once again doesn't know too much about the ETF lineup we have available, we have about 36 ETFs, one or two billion in assets under management. So, I think it was time that we had a dedicated team to support that part of the business, which is once again still in a very strong growth phase here at Fidelity Canada.

One of the first things that I wanted to ask you is that ETFs have been around for God, I don't know, more than 20 years, obviously. It still seems like there are some very simple misconceptions about the ETF vehicle as a whole and how it differs from a mutual fund, which in reality, technically, according to, I guess, if you will, governing bodies, are treated the same. So, what would you say the two main differences between ETFs and funds, and I say two, but it can be multiple, just what are the main differences between ETFs and funds?

[00:05:40]

Andrei: So, I think number one is kind of in the name. So ETFs are obviously exchange traded. So, they're traded intraday on the exchanges for which they're listed. So as compared to mutual funds which, as we know, you place your order in and you get your fill at the end of the day at 4 p.m. when the market's closed. Number two, which is also kind of just a function of the first difference there is, again, intraday liquidity, which again is a function of it being exchange traded. So again, as we know, we can trade those ETFs intraday. So, if you want to get in and out of your position, you can do so intraday. Again, with the mutual fund, you do have to place your buy or sell order, which then does get filled EOD.

[00:06:26]

Étienne Joncas-Bouchard: Great. Yeah, no, absolutely. I think that's definitely the main difference, right? But then you often hear ETFs are cheaper than funds. And, I have my reservations with regards to that statement. What would be your take on pricing of ETFs versus funds?

[00:06:48]

Andrei: Yeah. So, I mean, generally speaking, if you're looking at it from kind of a management expense perspective, ETFs do tend to be a little bit cheaper. There is a little bit more kind of administrative work that goes into the mutual fund side, which is one of the reasons they typically demand a slightly higher fee. The one thing that does get a little bit different as well as we know, when you do get your mutual fund fills, you are filled at NAV at end of day. Whereas with

ETFs, you do have to play with the bid offer spreads. So, depending where you're buying, where you're selling, there's a different price for that intraday. So, there's a little bit of a difference there with regards to the mutual funds. So, some people might consider that a bit of a hidden fee almost, whether you're paying the offer or are getting given the bid if you're selling. But it's a bit of an indirect cost, if you will.

[00:07:40]

Étienne Joncas-Bouchard: That's like you said, not hidden cost, but like the difference that you don't really see, right? Because like what you do mostly see is the management fee and then the whole breakdown of the total expense ratio isn't necessarily as clear. What we found is that I think the big misconception with regard to that, that's why I said I have my reservations, is that the reason people think ETFs are cheaper is because they're looking at completely different portfolio management styles, right? Where they're comparing a passive ETF with an active mutual fund. Whereas in reality, if you take the same strategy and operate it in an ETF vehicle or in a fund vehicle, you're pretty much going to get the same management fee. Where it will differ is that kind of transaction cost or that admin fee, right?

Because we do have ETFs that are fully active that are priced the same as a fund would be. And I think that investors and advisors kind of do not realize that because obviously it's just there's just less active ETFs out there. But in the sense that like, it doesn't mean because you're buying an ETF, it's necessarily cheaper than a fund. And vice versa, it doesn't mean because you're buying a fund, it's necessarily more expensive. So I think it's important to – and actually we spoke about this with Eric Balchunas who was on the last time on understanding what you own in ETFs because there are definitely strategies that you can have higher fees, correct? Like you can find ETFs with like ... not all ETFs are ten basis points, right?

[00:09:07]

Andrei: No, absolutely. You can find some ETFs that get to 100 basis points or more in terms of their fees. And I just want to backtrack a little. I know I mentioned that bid offer spread being a fee, it's not necessarily a fee. Arguably, you're paying what you should be for the ETF based on the underlying. And that just comes down to how these things are priced intraday as well. So, it's not really a fee. Again, if you're selling the ETF, the market maker is going to take a look at where the underlying is priced. And you're basically going to ... just like you would for a stock if you're hitting a bid or lifting the offer, it's very similar. So you're paying the price, what it's worth depending if you're buying or selling.

[00:09:49]

Étienne Joncas-Bouchard: Absolutely. You mentioned earlier, when going back to the differences, the aspect of funds being traded at end-of-day NAV. ETFs ... so funds only have a NAV, right? They don't have a market price, if you will, right? They have their closing NAV. ETFs have both. So what's ... and this may seem like a very simple question, but what's the difference between those two and what are those ... we've often heard about discounts of premiums with regards to the NAV, and that's reflective, obviously, of the underlyings. But like what is the difference between the NAV and the price for an ETF, which has both? Whereas the fund only has one.

[00:10:27]

Andrei: Yeah, sure. So, if you think about a mutual fund, so essentially what they're doing is at the end of the day, they're valuing all the underlying and then they're typically calculating the NAV. So they're saying what is each individual, let's say it's an equity ETF or an equity mutual fund, rather. And they're saying, what are these all worth at the end of the day? What is the valuation price for all of these? And then they're coming up with the NAV of the fund. And that's what you're getting filled at. Typically that, depending on different issuers, different insurers calculate their NAV differently. But, for

argument's sake, let's say a lot of shops will take the mid, for example, the mid-price at the end of the day. And that's what you're getting for your NAV.

Compare that with an ETF that's trading intraday. So there's always going to be a bid price and there's always going to be an offer price, as we know. So, high level, how you can think of it if you're thinking of an equity ETF, they're going to find out what the bid is valuing all those underlying equities in that particular ETF. And they're going to come up with a bid price for the ETF itself.

So, basically, the sum of the parts is equal to the whole on the bid. And similarly on the offer, they're going to find out all the offers for the underlying and they're going to be able to calculate what the offer would be for that ETF as well. So, you're consistently having that bid and offer price all throughout the day.

[00:11:44]

Étienne Joncas-Bouchard: So, that's one of the main roles of the market makers, correct, is that they're trying to figure out throughout the day what the real price of the underlyings are, which is something that is done – it's not like somebody sitting at a desk and thinks, is going like, oh, I think this should be worth this, right? Obviously, this is all automated and all electronic, but that's basically what market makers are offering as much as that actual execution is that price discovery, correct?

[00:12:13]

Andrei: Well, that's right. So again, their main kind of job is, again, to provide, number one, to provide liquidity for underlying funds, of course. The number two as well is they want to keep those bid and offers around the true NAV. So that's their job. They don't want to get into a situation where the NAV is outside of the bid and offers that they're showing on screen and showing to market. So it's their job to make sure to keep that NAV and the prices that they're showing in the market are very close to one another. And again, that just comes down to ... so you can't arbitrage, right? So, they're consistently out there making sure that there's no arbitrage opportunities.

[00:12:52]

Étienne Joncas-Bouchard: Okay, that's good. I was going to go on to another subject, but I think it's a little bit too far away from the core discussion we're having. But one thing that we mentioned there, so when you do have that bid ask, which is, like you said somewhere ... ideally the NAV is somewhere in between there. How does the market ... If market makers are doing exactly what they should be doing. But how do they establish the size of the spread where they have to take on for ... if they're selling units or if they're buying units, like how do they establish that spread? Is it because you often, once again, like these misconceptions of like you hear investors and advisors saying all market makers are making a bunch of money off of a wide spread. When in reality, it's more ... I'll let you answer. But, I think I know where you going to go with this answer.

[00:13:48]

Andrei: Yes. So, there's typically two things that affect the spread on an ETF. So, number one is just pure volume of the ETF. So, you know, is it a highly traded ETF? And the reason I mention that and I'll circle back to that in a second, but the second thing is the liquidity of the underlying as well. So what people have to understand is you may get some ETFs that don't trade very often, but if the underlying is super, super liquid, then the market makers are still going to be able to make a market in that ETF and keep the spreads relatively tight because at the end of the day all the ETF is representing a basket of for example, stocks that they can go out and purchase or sell to hedge their position as well. So long as the underlying is quite liquid, you're going to see relatively tight bid offer spreads.

So, circling back to the first point, just with regards to the volume traded on that particular ETF, as you can run into situations where you might actually see the bid offer spread on the ETF be tighter than what it would otherwise be if you just priced up the underlying. So, I'd say kind of in a perfect world, the widest your bid offer spread is going to be is probably as wide as what the bid offer spreads are on the constituent stocks or bonds that you have in the ETF itself.

[00:15:06]

Étienne Joncas-Bouchard: Okay. That makes it a lot more clear. And I think it addresses kind of that issue of just because it's a small ETF doesn't mean it's not liquid and trading at tight spreads, which is, once again, kind of a misconception when looking at measures of like secondary liquidity, right? Like what's traded on that exchange during the day. So, that brings me to my next question, which is what is the difference between implied liquidity and secondary liquidity? Because once again, that's exactly kind of what you were scratching at, I think, with regards to the efficiency from a spreads standpoint is that there's different levels of like liquidity for ETFs.

[00:15:51]

Andrei: Well, that's just right. So, there's the primary liquidity, which is how liquid is the ETF itself? So how much volume, how often is the particular ETF traded? And then what we call secondary liquidity or implied liquidity is again, how liquid is the underlying of the ETF? So that second one is what's quite often overlooked. I think you alluded to that maybe some, you know, smaller ETFs with less assets or that doesn't trade quite as much. But then if you take a look at the underlying, it's S&P 500 stocks or TSX 60 stocks underlying which are very, very, very liquid themselves.

[00:16:25]

Étienne Joncas-Bouchard: So it's almost then confirming kind of that saying, I don't remember where I read this, but it was a long time ago: an ETF is as liquid as its least liquid underlying asset.

[00:16:39]

Andrei: Yeah, I think that's a fair assessment. We're obviously simplifying things a little bit. There are obviously a couple of other things that play into ETFs specifically when you take a look at international ETFs as well, that adds a little bit extra layer of complexity. As we know, we have an ETF that has international exposure that's trading Toronto, New York hours. But then, as we know, come 11 o'clock our time, Europe closes down. So, you can often see things widen out a little bit in that scenario for international ETFs as well. So yeah, we're simplifying a little bit and there are a little bit more intricate indices depending on the underlying. But again, yeah, those are generally the primary things that contribute to the liquidity of ETFs.

[00:17:26]

Étienne Joncas-Bouchard: Okay. And that makes me think also, though, because we've been talking more of an equity context, right? Like you said, like say you take a basket of large-cap Canadian or U.S. stocks, it's very, very liquid. But we've seen an exponential growth in fixed-income ETFs, which bonds generally don't trade hands as much as equities do. Albeit it's a fairly efficient market, like relative to potentially other asset classes like alternatives or maybe private assets and things like that. There's still not mark to market necessarily as often as equities. So. Would that explain that? Would that lead to potentially larger spreads in general for fixed-income ETFs relative to equity ETFs?

[00:18:09]

Andrei: Yes, certainly. So, as we know, just fixed income generally is less liquid, excluding kind of U.S. Treasury market and Government of Canada bonds, which are super, super liquid themselves. When you start getting into kind of corporate bonds, whether that's investment grade or even high yields, you can run into some liquidity constraints there. Generally speaking, the spreads are still fairly reasonable. I would say arguably that in the fixed-income market, that primary liquidity becomes a little bit more important there, just because the underlying tends to be a little bit less liquid.

But generally speaking, all these are things that obviously the portfolio managers are very cognizant of as well. Obviously, it's in their best interest to make sure that they're not holding super, super illiquid stuff that they can't scale up if the fund grows larger and larger and larger. So, it's certainly something that they're thinking of on the back end as well, obviously being cognizant of liquidity concerns in the market.

[00:19:11]

Étienne Joncas-Bouchard: I think we saw a little bit ... to allude back to that point ... is we kind of saw that a little bit in March 2020. If we go back in that COVID-19 pandemic drawdown, if you will, in March, there was a bit of uncertainty around like what the actual price was for a bond. We had comparisons of like funds which were priced at NAV and you had ETFs that were not forward looking, but like just looking at the present and saying this is the price that like our bonds could sell at like right now. And I think that was a big misunderstanding among investors and advisors that saying that, oh it's because the ETF was not liquid or it was marked down. No, it was basically giving you what the actual value of those bonds were at the time, which were much less than they were before, just simply because market conditions, notably one, liquidity was drying up but also just we had very, very high uncertainty around which bonds are at risk of like either derating or simple defaults, but it's not necessarily the ETF is that the issue, right? It's the underlying bonds that were the issue.

[00:20:17]

Andrei: Well, that's just it. It wasn't the vehicle. It was, again, just the underlying bonds. There were, especially in the corporate space, there were just tons of bonds that were going kind of zero bid or dealers just weren't bidding on corporate bonds at the moment. So, the market froze up a little bit. Obviously, there are quite a few issues, just across the street, generally speaking, where you ended up there in certain situations is a lot of bond funds to fund redemptions just had to sell off their more liquid stuff. So think your govies, whether it be a Canadian or U.S. Treasuries to fund those redemptions. So, again, the ETF itself was a proper reflection of where the market was actually trading. So, I think there was some dislocation there and people thinking, well my mutual fund wasn't affected as much as my ETF when in reality it very much was. You just didn't see it intraday because there's no intraday pricing on the mutual fund.

[00:21:20]

Étienne Joncas-Bouchard: It's a whazy, it's a woozy. I'm not going to go through the whole quote from the Wolf of Wall Street, but it was basically a smokescreen a little bit. And seeing kind of the differences between the price actions are very similar. You get like two very, very similar funds and ETFs performing very differently. And so once again, I think the ETF vehicle acting kind as that real price of the underlying assets.

Another question I wanted to get to, and I know what we've been talking about now is kind of maybe a little bit like nuts and bolts where it may be not as interesting for everyone. I'm hoping that most people will learn something that are listening.

What are some key tips on trading ETFs? And I think this is something that like anybody could use and even if you've been trading ETFs for a long time, these are things that you should remember, almost have it like written next to your computer when you're putting in orders is, what are some of the key practices that you recommend advisors and investors employ when trading ETFs?

[00:22:24]

Andrei: Yeah, so a couple of things. Number one, I would say avoid trading the open and the close. We typically see quite a bit of volatility in ETFs around the open and close. Conceptually, if you think about it, at the open, market makers are trying to figure out where all the underlying is being priced. So there's quite a bit of noise there. At the same time, at the end of the day, quite a lot of noise as well. People trying to figure out where things are going to close. So if you can, try to avoid the open and the close, whether that's 15 minutes or so at the open and close because again, spreads can tend to widen out as we know as volatility increases.

Again I think I mentioned this earlier just about international ETFs. So if you've got some ETFs that have significant international holdings and thinking about Europe or Asia. Europe, again, as I mentioned, closes at 11. So trading in the afternoon, you might experience some wider spreads as opposed to trading earlier on the morning. So would recommend trading kind of ETFs that have European exposure earlier on in the day rather than later on in the day to kind of avoid those wide bid offer spreads.

And you do have a large order that you're looking to place through for an ETF, number one, you can feel free to reach out to your salesperson at Fidelity. We're always happy to talk to people on the street and see if we can source some liquidity. But even internally, calling in your own trade desk and discussing with them that they can source some liquidity gets you a good fill, especially if you're looking at doing stuff in size.

[00:23:59]

Étienne Joncas-Bouchard: Absolutely. And that last point, especially more directed towards advisors. For direct investors, definitely, I think the number one thing that you mentioned is avoid those open and closes. Make sure you put in limit orders. I think the biggest horror stories that we've heard from bad executions probably come from market orders, like kind of just trusting that it's going to get filled at a good price. But you never know, right?

[00:24:28]

Andrei: Yeah, the thing with the market order there is unless you have access to the order book and you know kind of where things are lined up, you might see, you put in for a 1000 shares and there might be a 100 shares at the offer that gets filled. And then you just run down the book and you're filled three or four cents lower. So it's always good to place limit orders. I think that applies generally to kind of anything exchange traded with regards to equities, not just ETFs.

[00:24:55]

Étienne Joncas-Bouchard: Yeah, that's absolutely true. So, whatever you are trading, limit orders can help save on some execution costs for sure.

Andrei, before we wrap it up, I think, I wanted to get your thoughts on just what have you heard about any new cool innovations or I guess new technologies, new ways to optimize even more this fairly efficient ETF capital markets, industry, if you will? I know in Canada, for example, like the number of market makers is fairly tight compared to like the U.S. Is there anything new you think, coming out or from a regulatory standpoint in the next, say, year or a couple of years that our audience should be interested in?

[00:25:44]

Andrei: I think something that's kind of probably more a broader trend in the ETF space, not necessarily specific to Canada, is kind of the emergence of these active equity ETFs. So, obviously this isn't super new. I mean, you can look to the States. Cathie Wood's Ark Fund has drawn quite a lot of assets. But I think active equity ETFs are going to start to grow a little bit more. It's certainly a very interesting space that has historically been more in the mutual fund space versus the ETF space due to providing kind of disclosures on the underlying. There's been a lot of hesitation of issuers wanting to provide that type of information to market makers in order to price these types of products.

But I think, as the market continues to evolve, I think we're going to start to see more active equity ETFs, which, again, I think is going to be great. It's going to give you access to some great, great managers who historically have only been in the mutual fund space. But it's going to give it to you in that ETF vehicle.

[00:26:47]

Étienne Joncas-Bouchard: That's really interesting. One of the things that I notice from a regulatory standpoint is kind of that becoming more and more comfortable with, they call them ANT ETFs, you know, Active Non-Transparent ETFs, which is basically allowing ETF asset managers to abide by the same rules as they would with a fund. And I think that's going to open up a lot of doors for a lot of active asset managers like Fidelity, for example, but tons of others in Canada and the U.S. that they can feel comfortable to not have to divulge other than to the market maker, which needs to know what's underlying to get good execution, but not having to share with like the open market what they're doing, which is kind of their secret sauce, if you will.

So I'm very excited about that because I think it's going to create a whole new opportunity set in the ETF landscape. There's going to be tons of new, different types of products that asset managers aren't comfortable with operating in a transparent vehicle right now. But we're already starting to see growth there. And I hope it's going to continue, especially for investors, right? Like just more options is better.

[00:28:01]

Andrei: Yeah, absolutely. I think it's going to kind of just create kind of an explosion in terms of innovation in the ETF marketplace, kind of opening that type of structure up. And yeah, I agree 100%. I think we're going to see a lot of cool and new innovative products at the ETF market in the years to come.

[00:28:19]

Étienne Joncas-Bouchard: Great. Andrei, thank you so much for your time. Nice, short and sweet. Tons of information, though. It was great having you on and I'm very much looking forward to another episode in the future and we'll try to find something else to talk about. And I'm sure we won't have too much of a hard time to figure that out. So thanks again.

[00:28:38]

Andrei: Appreciate it. Always love coming on.

[00:28:40]

Étienne Joncas-Bouchard: Alright. Thanks. Thank you, everybody, for joining us. See you next time.

[00:28:47]

Announcer: Thanks for listening to the Fidelity ETF exchange powered by Fidelity Connects. Don't forget to follow Fidelity Canada on Twitter and subscribe to Fidelity Connects on your podcast platform of choice. And if you like what you're hearing, please leave a five-star rating or review. Thanks again. See you next time.

Commissions, trailing commissions, management fees, brokerage fees and expenses may be associated with investments in mutual funds and ETFs. Please read the mutual fund or ETF's prospectus, which contains detailed investment information, before investing. The indicated rates of return are historical annual compounded total returns for the period indicated including changes in unit value and reinvestment of distributions. The indicated rates of return do not take into account sales, redemption, distribution or option charges or income taxes payable by any unitholder that would have reduced returns. Mutual funds and ETFs are not guaranteed. Their values change frequently, and investors may experience a gain or a loss. Past performance may not be repeated.

If you buy other series of Fidelity funds, the performance will vary largely due to different fees and expenses. Investors who buy Series F pay investment management fees and expenses to Fidelity. Investors will also pay their dealer a fee for financial advice services in addition to the Series F fees charged by Fidelity.

Any reference to a company is for illustrative purposes only. It is not a recommendation to buy or sell, nor is it necessarily an indication of how the portfolio of any Fidelity Fund is invested. The breakdown of fund investments is presented to illustrate the way in which a fund may invest and may not be representative of a fund's current or future investment. A fund's investment may change at any time. Mutual Fund and ETF strategies and current holdings are subject to change.

The statements contained herein are based on information believed to be reliable and are provided for information purposes only. Where such information is based in whole or in part on information provided by third parties, we cannot guarantee that it is accurate, complete or current at all times. It does not provide investment, tax or legal advice, and is not an offer or solicitation to buy. Graphs and charts are used for illustrative purposes only and do not reflect future values or returns on investment of any fund or portfolio. Particular investment strategies should be evaluated according to an investor's investment objectives and tolerance for risk. Fidelity Investments Canada ULC and its affiliates and related entities are not liable for any errors or omissions in the information or for any loss or damage suffered.

From time to time a manager, analyst or other Fidelity employee may express views regarding a particular company, security, and industry or market sector. The views expressed by any such person are the views of only that individual as of the time expressed and do not necessarily represent the views of Fidelity or any other person in the Fidelity organization. Any such views are subject to change at any time, based upon markets and other conditions, and Fidelity disclaims any responsibility to update such views. These views may not be relied on as investment advice and, because investment decisions for a Fidelity Fund are based on numerous factors, may not be relied on as an indication of trading intent on behalf of any Fidelity Fund.

Certain Statements in this commentary may contain forward-looking statements ("FLS") that are predictive in nature and may include words such as "expects", "anticipates", "intends", "plans", "believes", "estimates" and similar forward-looking expressions or negative versions thereof. FLS are based on current expectations and projections about future general economic, political and relevant market factors, such as interest and assuming no changes to applicable tax or other laws or government regulation. Expectations and projections about future events are inherently subject to, among other things, risks and uncertainties, some of which may be unforeseeable and, accordingly, may prove to be incorrect at a future date. FLS are not guarantees of future performance, and actual events could differ materially from those expressed or implied in any FLS. A number of important factors can contribute to these digressions, including, but not limited to, general economic, political and market factors in North America and internationally, interest and foreign exchange rates, global equity and capital markets, business competition and catastrophic events. You should avoid placing any undue reliance on FLS. Further, there is no specific intention of updating any FLS whether as a result of new information, future events or otherwise.