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Presentation with Doug Cifu, CEO of Virtu and Alex Blostein, Analyst at Goldman Sachs

Alex Blostein, Analyst

Great. All right. So we're going to get started with our next session. I'd like to welcome, Doug Cifu, CEO of Virtu Financial. Over the last year, Virtu has been quite busy integrating acquisition of ITG, which so far has resulted in new revenue opportunities and meaningful cost synergies and ability to free-up capital. At the same time, the operating backdrop for electronic market makers has been fairly challenged in 2019 and clearly, there is no shortage of market structure debates and topics to be had. So, Doug, thank you for being here. Always good to have you.

Douglas Cifu, Chief Executive Officer

Great to be here.

Alex Blostein, Analyst

So I wanted to kick this off really with the question around trends and market making that we've seen over the course of this year. And I know it's hard to generalize. So it's probably helpful to just kind of set the stage. But if I look at your global equities' market making business, it's down quite substantially year-over-year and from the outside looking in, it looks like realized volatility in the US hasn't been that bad. It's kind of like average versus kind of 25-year history. Volumes are down a little bit, and the real pressure point has been more in the OTC side of the market, kind of the retail part of the world and maybe a little bit outside of the US. So help us frame and understand what went on for you guys over the course of this year.

Douglas Cifu, Chief Executive Officer

Sure. Good question, and great to be here. So we divide our business into -- for reporting -- public reporting purposes, obviously, into global equities and FICC. And certainly within global equities, that's still a pretty broad swath of the marketplace, so that encompasses 37 or so different countries where we are active as a market maker. Clearly, the United States is the largest market, and it's our largest percentage of that overall market, but a large part of what we do is driven by what's happening on the Tokyo Stock Exchange in terms of volumes. That's our biggest market in Asia. And the volumes on the Tokyo Stock Exchange in 2019 are down pretty dramatically.

Europe is a significant portion of our global equities business, not surprisingly. And if you look at notional volumes in Europe in 2019, they're down 21%-ish. And indeed in the last two weeks, I don't think we've had more than \$30 billion notional traded, and there is a quite a cataclysmic vote perhaps tomorrow and the market traded \$25 billion notional, so something clearly is going on in Europe.

And so with that backdrop, looking at the rest of global equities obviously is US equities and as you say, with the acquisition of Knight Capital and the wholesaling retail business, if you will, that we inherited through the combination with Knight Capital, that is going to be largely driven by retail interaction and

the best proxies that we have found for that is what Interactive Brokers booked out in terms of retail volumes and that's clearly down year-over-year.

And as you say, OTC volume, which is a part of that, right -- that's part of the Knight business is down -- I know Andrew tells me like 28% or something. I got it right. There you go. So that's a challenging backdrop for us. Those are all great businesses. They are all profitable, and our thesis and our strategy from the beginning of Virtu has been, there will be times when the markets don't give you a lot. So there's going to be times when there is a famine, right. There's going to be time that when there is a feast. What we have done at Virtu is build a scaled global financial services firm that can provide two-sided prices in 25 different financial instruments around the world in all these different marketplaces and asset classes. And as well through the combinations with Knight and now with ITG, we're a large institutional business.

So we're taking that fixed cost plan, right and we're now aggregating and spreading it both as a principal and as an agent around the world. That's really the theme and the strategy behind Virtu, because the world bid offer spreads aren't going to get wider. They may episodically, but as an overall trend, that's not going to happen, right. Commission rates are not going to get -- are not going to go up. The overall commission wallet is not going to magically go up 20% in the next five years, that's not going to happen. So we're building the firm of the future that can be very profitable and very scalable and very successful in those market conditions assuming, right, that the macro market is not going to get better. That's the whole strategy and thesis behind what we're building here at Virtu.

Alex Blostein, Analyst

Yeah. So that's a helpful segue actually to my next question. So in the world that you just described where from a secular perspective, spreads continue to compress, commissions continue to kind of come down. So I read it as Virtu same-store sales are going to be under pressure based on what you guys do. At the same time, there is cross-selling opportunities and you talked about -- you have the platform and you're just adding other capabilities, some of them are through the deals you've done recently. Talk to us a little bit about some of the growth -- organic growth initiatives. Do you think it could come out of the ITG deal and if there's anything...

Douglas Cifu, Chief Executive Officer

Yeah. Let me actually go back to Knight, because I think it's important, because I've never really done a great job of articulating that either, right. There -- and we'll announce this with our year-end earnings. I'm not going to give you the number right now because I want to finish 2019. They were real revenue synergies for the Knight transaction. I talked about them generally, but they were significant. There were significant eight figures synergies from taking what Knight did really well as a quantitative firm. That was a good market maker and what Virtu did really well as being a very good execution style market maker, right, really understanding market risk and combining the two, right. So that -- we did -- the revenue synergies from that transaction were significant.

There were a lot of asset classes and areas where Knight was okay, but Virtu had no particular presence at all, namely block ETFs, right. So Knight had a US block base business. Virtu had nothing like that. We Virtu-alized, if you will, the ETF block business. It's a terrific group of folks here in New York. And one of the things we're going to be doing in 2020 we've announced this is take that DNA to Europe and to Asia

where we think we can really move upstream and via significant block liquidity provider in all of those marketplaces, because we have the DNA through the Knight acquisition, we have the technology from Virtu and now because of our friends at ITG, we have distribution, right. We've got a global sales force.

I uncovered a group in London effectively, I call them the human RFQ machine, right. They couldn't access principals, right, but they had this great ETF business. Why? Because they really understood the market and clients really trusted them. They had distribution, and Virtu was a market maker to them. Now we can use them to distribute our own prices, right. The analog or the ancillary or the knock-off of that is also fixed income.

For the first time, Virtu is now a participant in fixed income. Why did we get into credit? Well, it's because of our block ETF business. What do you do a lot of -- obviously, fixed income ETFs are a very large sub-category of ETFs. And so as a result, we had to become a participant in the credit market. And so, now we're connected to market access and TruMid and Tradeweb and the old BondPoint, which was sold, as a participant for the price. So there are ways that we can grow organically the market making business, options as well. We've always been -- when I also ran an option. I talked about this on the last earnings call. We re-architected our architecture in order for us to be competitive in options. All the other accoutrements of being an options market maker, we had already. We had all of the connectivity between New York, Chicago, and the rest of the world. We're already paying for all of that. We have some of the best delta hedges in the world in cash equities and other asset classes. We have all the relationships with the retail brokers, right. The only thing we didn't have was the technology to be an options market maker. We now have that, and we're rolling that out, right.

So there's lots of things we can do to continue to grow this firm. But again the overarching theme is, there's going to be a handful of winners in this, right. You see it when Schwab is buying TD Ameritrade and Schwab is going to zero commissions, what's the world telling you, you got to get really efficient, right, because Schwab can now operate not getting commission at all from its retail clients. Well, the market maker and the institutional brokers have to act.

Alex Blostein, Analyst

What are the other sort of products? You mentioned obviously ETFs. You mentioned options. You mentioned credit to some extent. I definitely want to spend a little bit time of that, but any other asset classes or sub-asset classes in the market making side, where you think you could be much bigger in two to three years from now?

Douglas Cifu, Chief Executive Officer

Yeah, here's what I would say. I mean pretty much we named every asset class, right. We're already in FX and commodity. So if you can think of something else, I'm happy to -- we're happy to market make it, right. We won't -- if it trades electronically, we don't care what it is.

Alex Blostein, Analyst

We will trade it like swaps, interest rate swaps.

Douglas Cifu, Chief Executive Officer

Yeah, I mean those haven't really been electronified if you will, right. There has to be -- the province of the large dealers has to -- but I'd say the one narrative or the one theme that you see here is moving upstream, if you will or customizing and segmenting liquidity. Really, what was the old Knight retail business? These retail brokers trusted the old Knight firm and they were sending them these a vast quantity of market orders, which the old Knight firm and now Virtu internalize. What's our block ETF desk? It's doing the same thing. If you segment liquidity to a market maker, we can provide more size and hopefully attractive prices, right. That's the theme in terms of doing that across every asset class. We have never done that in commodities. We haven't done that in metals. We've never really done that in options at all, right. So there's a lot of opportunity for us to be a larger, more scaled market maker by moving upstream and segmenting liquidity. That's the theme that we've been talking to all of our customers and counterparties with, which is we're prepared to be a market maker on a screen in RFQ environment. And if you want -we're happy to be disclosed and have you send us directly, and we're doing in a competitive fashion, right. So that's how these -- that's how the firm is going to grow.

Alex Blostein, Analyst

That was helpful. Shifting gears a little bit. Let's talk about the agency side of the house and the ITG business, obviously. So deal closed a little while back. You guys have done a lot on integration side. And you shift to new offices, kind of give us a mark to market...

Douglas Cifu, Chief Executive Officer

I moved on March 2. We closed on March 1, where -- it feels like just happened.

There you go.

Alex Blostein, Analyst

Where are you guys in the integration process and sort of what's on the to-do list into 2020 when it comes to ITG integration?

Douglas Cifu, Chief Executive Officer

Yeah, look, I mean, obviously, we move -- I seriously didn't move in on March 2. Actually, March 1, the day we closed because I'm a big believer in physically integrating these firms and the only way to do it is to mush everybody together and figure out what you got. And so, we've already talked about the synergy number, and we increased that. And we told you we're going to get the high end of the range and all those things are important because they help "pay for the transaction." And that's important. I'm not minimizing that, and we've been good stewards and good operator. So we'll continue to be so.

The more important thing that about ITG, which I think people really didn't understand and folks really undervalue that ITG was a great, great product company. We now have from pre-trade to post-trade. This suite of products, whether it's pre-trade analytics, whether it's algos, whether it's Algo Wheel, RFQ Hub, Triton EMS, analytics, Commission Management, post-trade settlement and clearing for institutional clients, post-trade analytics. What did I forget? RFQ, Andrew is looking at me...the Commission Management. I said everything.

Anyhow, so we have nine, 10, 11, 12 products, plus bespoke liquidity that we can now stream to everybody. We're on the desktop, and studies have shown the more touch points, not surprisingly, you

have with clients, right, the larger share of the wallet you're going to get, right. You can't just be an execution-only facility, right. You can't just do one thing. You have to do everything. So you got to be able to offer high touch, low touch portfolio trading and all of these financial products. That's what we can offer. And what we're doing is again re-platforming all of that, Alexm onto Virtu, right, because we've got this large-scale platform that can handle all of this flow and handle all of this variety of financial products as that creates the efficiency. It's got to be global in nature. ITG was a very silo'ed technologically and geographically, right. We've eliminated all of that.

And so by definition, you have a more efficient firm that actually communicates and works better, right and you can actually reduce your headcount and your physical infrastructure as part of that. That's 100% of what we're doing. And so, that will be largely completed by the end of 2020, right. We will be re-platformed all of these things. We are already rolling out to the ITG US and European customers, the Virtu Algo suite, more than half of the US customers are already have been moved over and a significant portion in Europe. We now have an Algo suite ready to be launched in Canada where we had nothing before and the same thing in Asia. So by this time next year, virtually the entire world of ITG Algo clients are all going to be on a single global technology stack run by Virtu, right.

Alex Blostein, Analyst

As you think about some of the revenue synergies, you talked about a couple of things in the past, but if you were to rank order some of the more kind of concrete organic revenue synergies with ITG over the next 12 to 24 months, right, just to give you credit for the platform migration that's going to get done by the end of next year. What are the top three things we should be paying attention?

Douglas Cifu, Chief Executive Officer

Yeah. I think number one, number two and number three is multi-asset class, right. At the end of the day, that was one of the main drivers behind this transaction. ITG is a wonderful firm, was known as a great global equities firm, give it an A for that. I would give it not because I'm a great inflatobut because I like these guys. I'd give him a B for FX and for other asset classes. They just didn't have the expertise and couldn't frankly afford the investment in these other asset classes.

So perfect example is Triton, right. Greenwich Associates tells me that Triton is the Number 2 EMS in the world, I believe, Greenwich, why not. I didn't pay for it. So it's kind of truthful, I guess. Right behind Bloomberg, it's on desktops around the world at buy side institutions that I marvel at, right, because I can't believe the caliber and the quality of the clients that this firm had, but it's basically the global equities execution system. Why can't that be FX and fixed income? Of course, it can. That's what we do at Virtu. We run EMSs in FX and fixed income. It wasn't architected with that type of scale in mind, right. The back-end is all going to be re-platformed on Virtu, and they didn't have the experience and frankly, the connectivity and the funds to pay for the market data and all those other asset classes. We do. That's what we do for a living, right. So that's a concrete example. Same thing with analytics, right. Analytics, folks want multi-asset class analytics, they have to have it either regulatory or because this is what they need to show their best exclusivity in their clients.

Well, ITG has had offerings in FX and in fixed income. Again, they made an earnest effort, but they didn't have either the resources and/or the understanding of the market in order to provide a truly scaled really, really good FX product. Well, on day one, I said, why don't we just take the FX feeds -- market

data feeds that Virtu has. We have a view of the best bid and best offer in over 95 different payers globally that we use for our market making business. So, it better be pretty darn good, otherwise we lose money, right. So why not use that same feed in the FX analytics product that we're offering? So we've done that and we've launched TCA for FX and for fixed income, right.

Our partnership with MarketAxess, same thing. Our friends in MarketAxess came to us and said, hey, do you know what the net asset value, NAV calculation is for a bunch of ETFs at all time particularly fixed income. We said, of course, here it is on this screen. They said well, people want that. We can sell it as a product. I said, well, that's news to me, but that's a good -- that's good, right. When people want to buy something from me, that's good. So I said, okay, we'll sell that. And so, we're going to call it eNAV and my friend, Chris Concannon tells me that there's a lot of excitement about that, right. So these are ways for us to grow. So it's really making the firm better from a technological standpoint and making it truly multi-asset class, that's how you grow.

Alex Blostein, Analyst

The multi-asset element, I'm not surprised you call it one, two and three, definitely makes a lot of sense.

Douglas Cifu, Chief Executive Officer

You want four? Is that where we're going?

Alex Blostein, Analyst

No, no no. I was going to ask, in terms of the investment that you need to make, right, Triton, you said they have the desktop presence, how easy is it to incorporate that?

Douglas Cifu, Chief Executive Officer

Here's the great answer. I'll tell you. I'm not going to trivialize it as my CTO always says, right, because this is what I do because I'm a hand waving non-technologist and he is 30 IQ points smarter than I'm, but it's not like we have to build a new back-end, we have it, right. I'm not to going to say what we call it because we have a goofy name for it, but we have this back-end ability to take market data and send orders out, not surprisingly, right. That's what we do for a living, right. So using that same basic framework, all right, is what we're going to do. RFQ Hub. RFQ Hub, you may not know it, but it's Number 3, probably of three RFQ platforms for ETF trading in the world, right; Bloomberg, Dealerweb, RFQ Hub is a very distant third. The way it was architected, it was done really more for special products based out of Paris. We looked at it and said, well, that doesn't make any sense. What do we have on the shelf, right?

We respond to quotes. We have something called vFX, you may have heard it, right, where we're sending out indications all the time. So the DNA of like a quoting platform, the matching engine we have is that of Virtu. So it will take a little bit of re-architecting sure, right. But it's not like we have to reinvent the wheel here. These are all technologies that we built that were the basis for Virtu. So everything is going to get re-platformed onto this architecture. Do I have to divert some of the developers at Virtu away from other tasks? Of course, we're going to prioritize that, but nothing is more important than the ITG acquisition and Triton, right. It's a delivery mechanism. We're now sitting on 1,000 desktops around the world, where people are seeing the Virtu name and we can push things to them, our own liquidity for example.

Alex Blostein, Analyst

Is there a hurdle on the client's perspective, meaning are there additional resources the client has to get kind of allocated to this effort, if they wanted to partner with you guys on receiving some of the data?

Douglas Cifu, Chief Executive Officer

Here is the good news. Once they move to a new version of Triton Valor, for example, it actually becomes less of a pain in the tuchus.

Right, right. Am I allowed to say that?

A less of a pain in the butt than it used to be, right, because we now can push our changes to them without having to go to their desktop. So we're actually making it easier. Yeah, there's going to be some education in terms of, hey, move to Triton Valor, move to our portal system for analytics, right, so that rather than getting a PDF, you can actually work on it in your office. The new version of alert, which is our block crossing network, is 72 times -- 72%, excuse me, lower latent than the prior version. So, yeah, you got to install that, but once you do that, it's going to work a heck of a lot better. These are all workflow technology solutions. ITG had this large swath of what they call broker neutral. They're really just workflow technology solution, right and what firm is really good at managing technology and getting market data into it and getting price indications additive. At Virtu is all we do, right.

So the combination of two actually is incredibly powerful. So at some point, may not be towards by the end of next year, but certainly, darn close to that. All of the back end of all of that is going to be replaced. Triton in the front end, the skin of it, the UI, the feel of it, the functionality, we had no experience doing that, right. We had our own GUIs, they work for Virtu, but in terms of what the buy side wanted, give the Triton team and ITG an A plus plus, great product. But what happens after the interface, all right, that's where Virtu is an A plus plus plus.

Alex Blostein, Analyst

Shifting gears a little bit, you mentioned credit. What are you guys doing in credit? Is there anything outside of ETF market making and kind of maybe some of the exhaust credit trading that will come on the back of that? Is that the plan or you're actually looking to do more in credit market making, especially maybe like lower-end IG market where things are already pretty electronic?

Douglas Cifu, Chief Executive Officer

Yeah, I think the answer is yes and yes. I mean, I think the impetus to really getting interested and excited about it came off of the ETF desk, right. The young man that runs -- our global ETF business has been with Virtu for really, really long time and he is brilliant and really talented, and they came to me and basically said, we can build this credit business, because we're kind of in it, right, because we do these bespoke creation redemption in ETF -- in fixed income ETFs, the basket you kind of negotiate with the issuer and how that all works, right. So you have effectively this inventory. So we're now pricing a couple of thousand investment-grade CUSIPs every day, right.

So if you're going to be doing that and you're going to end up having to transact with that bespoke underlying basket, when you do your redemptions, you might as well become a participant in it, right, because we're going to BondPoint. We're going to ICE bonds, whatever they call it now. We're going to

MarketAxess, and we're going to all these other folks. And so, it was a natural way for us to get into that. So we're starting with investment grade, right, because that's the largest and probably the least idiosyncratic risk if you will, because typically, those companies don't go insolvent overnight, but certainly there's opportunity to kind of move out the skew there as we develop the DNA.

Again, no significant investments need to be made, right. We have the connectivity. We have the technology. We have the pricing mechanism. Might I hire some people, right, that are a little more experienced and had a price fixed income, right and how to trade it, sure. But you know my style, right. I'm going to be drilled with them, right, it will be a handful, and we'll grow the business organically that way.

Alex Blostein, Analyst

Yeah. All right. Let's shift gears a little bit and talk about some of the bigger picture opportunities.

Douglas Cifu, Chief Executive Officer

Here we go, get me in trouble.

Alex Blostein, Analyst

Which one am I going to go to...

Douglas Cifu, Chief Executive Officer

MEMX, I don't know (inaudible). There you go...

Alex Blostein, Analyst

I was going to e-brokers first and then MEMX.

Douglas Cifu, Chief Executive Officer

Okay. Whatever you want to, sure.

Alex Blostein, Analyst

So Schwab-Ameritrade...

Douglas Cifu, Chief Executive Officer

I'll say something stupid, I'm sure.

Alex Blostein, Analyst

Schwab-Ameritrade merger, let's talk about that and really the implications on the ecosystem are really Virtu broadly, right, because the concern is, is this going to make payment for order flow more expensive. Is there any sort of share dynamic between...

Douglas Cifu, Chief Executive Officer

How did I get you to stop saying payment for order flow. I love you, you're great. But...

Alex Blostein, Analyst

You guys put in your results?

Douglas Cifu, Chief Executive Officer

We do.

Alex Blostein, Analyst

We got payments for order flow number?

Douglas Cifu, Chief Executive Officer

Alex, we have to change that. All right. Yes. Yes. Again, I know I sound defensive, but the way retail wholesale market making works is, we've got 200-some-odd brokers...

Alex Blostein, Analyst

That's a mouthful, (inaudible).

Douglas Cifu, Chief Executive Officer

I know, I know, I know, it's like dark pools that was a terrible name. The way it works is around 10% of those do take a rebate. 90% of them don't. We don't compete basically, period, end of story. The large e-brokers and all the wealth managers send orders to Virtu, Citadel, Susquehanna, Two Sigma, UBS kind of in that order based on the amount of price improvement off of the national best bid or best offer that we are prepared to offer. They do that monthly and quarterly, and they do it by their own metrics and however, they measure it, right. So that's how we're competing. That doesn't show up in our financials at all, right.

And last year, we paid \$430 million of price improvement back to our retail brokers that they then gave to their clients. So if you're a Schwab customer, you look at your confirm, you got a four digits -- after four digits in terms of what you paid and then, it tells you how much money you saved off of the national best bid or best offer, that was brought to you by your friends at Virtu, right. So the reason that this is a sticky business that's never going to go away and the zero commission thing actually helps is because an exchange can't provide that service. If you send those orders to an exchange and you said you got to provide better than national best offer, first you got to change the law. Second, well, you are going to get your face ripped off like it's nobody's business. The reason we can make money on this is because it's segmented and it's sent to us and we gave a good price, right and then we internalize the order and deal with the risk, right. So exchanges can't do that. Not that they're bad, they do some things that aren't so great, but exchanges have a purpose. This is a totally different market and that's why it's here and it's here to stay.

Now, zero commission just means that we just became even more important to the ecosystem, right, not because people are going to have the hands out and so they give us this giant rebate, but because we are providing it now a real value to their end-user, right, and we've made this multi-year hundreds of million dollar investments in order to be able to do that, right. The retail brokers can't do that, and they've got a conflict and they don't want to do that. So they really kind of embedded with us.

Our market share with Schwab and TD Ameritrade are all public. Our market share with Schwab is higher than the TD Ameritrade, which is a good thing and I'm very hopeful that this ends up being a

positive for us. We've got great relationships with both of those institutions that grow -- both great institutions and I hope the transaction happens because of my friends at Schwab are excited about it, but other than that I have zero insight.

Alex Blostein, Analyst

You mentioned MEMX, you own them.

Douglas Cifu, Chief Executive Officer

I know, I love them. I just get in trouble because for the record, I'm not allowed to speak from MEMX. I would -- they slap my wrist and say -- I want to speak about Virtu's interest in MEMX.

Alex Blostein, Analyst

We will talk about that. So...

Douglas Cifu, Chief Executive Officer

But I'll talk about it anyhow.

Alex Blostein, Analyst

What do you think are the implications for the cost structure on the back of that? Obviously, they're coming out to be as a low-cost provider. What do you think is the success going to look like in that story, two or three years from now?

Douglas Cifu, Chief Executive Officer

I think, look, I mean first of all, I'm very excited, Jonathan Kellner is a great CEO. The team that he's assembled around him, a lot of them I know because they worked at Virtu, they are first rate. So, the technology is going to be awesome. They're going to use new style technology. So it will be really like literally one cabinet will be the entire exchange, right. That's how much technology has evolved. Really, we're proving the point, which is you can run one of these things and make it really deterministic around tech, around speed, you can make it really low latent. You can be really transparent around order types, all that kind of stuff and it don't have to cost that much. That was the Virtu impetus behind this. It's called "the emperor has no close theory of business," which is I thought that we were being overcharged for market data and connectivity. I thought that it wasn't consistent with the 34 Act, so I made a fuss about it and I got -- Virtu and myself behind this MEMX idea, because I thought we could create an exchange that would do everything that an exchange should do at a fraction, fraction, fraction of the cost and still be profitable and you can because we run a very large-scale technology businesses and I know what it costs to run. I know what MEMX is going to cost to run. It will be profitable, and it will charge nothing for market data and connectivity to start and then it'll charge a fair amount, which will be all fully disclosed and it can be very profitable running the business the right way.

Alex Blostein, Analyst

Let's pivot a little bit. I want to talk about the expenses...

Douglas Cifu, Chief Executive Officer

I didn't too much trouble, did I? Okay, good.

Alex Blostein, Analyst

That was pretty good. Let's talk about expenses for a couple of minutes. So clearly, integration with ITG is going well from a cost perspective, for sure to your point earlier, you've raised the cost guide and you've raised the synergy guidance. So that's coming along. Once you get through that, can you help us think about kind of the steady state expense growth level that you need to kind of have in this business now that you do have the market making of agency business?

Douglas Cifu, Chief Executive Officer

It's a great, great question.

Alex Blostein, Analyst

You've got to support the growth?

Douglas Cifu, Chief Executive Officer

Great question. What I've said, and this is how Vinnie and I started Virtu a long time ago. There's nothing more important in what we do than managing our costs and expenses, right. Again, because there's going to be times of feast, there's going to be times of famine. And when all said and done between the Knight firm and the ITG firm, we will have taken out gap over like \$550 million of expenses, which is pretty extraordinary, right. And in my view made both of the firms markedly better and operate better and made their technology a lot better, right. That's the power of the operating discipline and the financial technology that we bring to bear, right. So pre these acquisitions, we are always very, very good with our expenses. Generally, we didn't disappoint you one way or the other. We have made significant investments in the last five years and all of these new fangled technologies. That's a nice way of saying wireless and FPGA cards, and all the rest.

I don't know if we're going to have like neutrino is going through the earth, I don't think so, right. I'm kind of half joking. I'm not a physicist, but my physicist friend says that's not going to happen. So it's hard for me to think that there'll be a new fangled technology because we're really close to the speed of light between all these various data centers. And so, we've made all those investments. So we'll always keep up with the Joneses when it comes to that. We will always buy new boxes, because that actually helps reduce the cost and the scale of our business and you know that in terms of how we spend CapEx.

The important thing is and I want to be careful how I say this, like managing the firm with the right amount of headcount is kind of really all that really matters at the end of the day, right, because you want to have the right number of people, so the firm operates correctly and then you can super motivate really good people because you can pay them exceptionally well, right and you don't have -- every time, you have a person, you need a Bloomberg, you're going to need this and you need that. So I'm a big believer in operating discipline around the firm, big big believer, whether or not we're having a year like 2018 or it's a year like 2019. So that's going to be our mantra going forward. So we will never be more than the kind of the single-digit growth that we experienced or expense growth that we experienced in '15 and '16 and '17 before we made the acquisition of Knight in July of 2017. I kind of hope it goes the other way, so that the Knight staff works.

Alex Blostein, Analyst

Yeah. That's helpful. Let's talk about some of the capital priorities for you guys over the next 12 to 24 months. So obviously, with the revenue backdrop not great, the leverage ratio is creeping up, if you kind of look at, I think it's at the end of the quarter, you guys were at 3.7. If you kind of lose Q4, you look at full year 2019 and maybe closer to 4, so what are your plans for deleveraging, what are your plans for -- I know you obviously committed to the dividend and that's very important to you, but help us kind of frame if the environment stays roughly maybe gets a little bit better, but it doesn't experience a consistent like Q1 of last year.

Douglas Cifu, Chief Executive Officer

Yeah, I mean, I've said this on the earnings call. First of all, for the record, we don't have a maintenance covenant in any of our debt. Some of the hedge funds we're putting that out there, I'll be nice and say it like that. It was -- it's not the correct narrative, our next maturity is 2026, right. So from a corporate finance perspective, we're in great shape. We just hedged a bunch of our debt at like 4.85%, right. So our capital structure is in great shape. We have a lot of excess capital within the firm, right, from doing these acquisitions. We have committed. We've already -- we paid back \$100 million and then, we reborrowed \$25 million. So net, we paid back \$75 million from the acquisition eight, nine months ago. We told the Street we would have \$125 million I think of excess capital, so that extra \$50 million is clearly sitting there. We generate a lot of free cash and as you said, other than paying the dividend and some CapEx, our need for capital doesn't grow materially. So between excess capital and cash flow that we throw off, I'm very, very comfortable that we'll continue to amortize our debt sensibly. There's no magic to saying we need to be levered 1.5 times to 2.5 times. It really will depend ultimately on the market conditions. Yes, I'm committed to doing that, right. I'd like to run Virtu as I say, like my family used to run at the time grocery store, right. You want to count what's going on and not have too much debt. But at the end of the day, we're very, very, very comfortable from a capital and from a debt perspective right now.

Alex Blostein, Analyst

In terms of the trade-off and to an extent, you do have a little bit of excess capital that you want to spend, whether it's deleveraging versus share repurchases?

Douglas Cifu, Chief Executive Officer

We've done both.

Alex Blostein, Analyst

Right.

Douglas Cifu, Chief Executive Officer

We've done both. I mean, it really just depends on the amount of excess we have and kind of frankly what the stock price is. I think we bought back \$61 million of stock in 2018, am I directionally correct? Andrew said yes. And we paid off \$750 million from the Knight acquisition plus add \$75 million, so \$825 million and we paid a dividend, so -- which is a \$1 -- \$0.96 a share, we have 195 million shares, so you guys can do the math. I mean we throw off a lot of cash and I'm a big believer in doing that.

The real key though Alex is reducing the cost to really a manageable amount. When you do that, life gets a lot easier. We're in this sausage making period right now, right. And it doesn't look so pretty. At the end of it comes a beautiful sausage. I like sausage a lot. And unfortunately, as a public company, you got to report every quarter and once we get to the end state of what our headcount should be and all that stuff, the picture becomes a lot more understandable.

Alex Blostein, Analyst

Got it. Makes sense. All right. We got about a minute. If anybody has questions, let me know. There should be a mic coming around. Maybe, I'll ask another one just around M&A. Obviously, you guys have been acquisitive in the past.

Douglas Cifu, Chief Executive Officer

Yeah.

Alex Blostein, Analyst

You talked about really building out this platform that could make it even more compelling to do other transaction. When you kind of look at the spectrum of market makers or agency firms kind of where is your preference and again, to what degree, do you have capacity to use these firms because of the leverage?

Douglas Cifu, Chief Executive Officer

Here is what I would say all of the above. I mean, we're a public company, so, we can issue stock, right? We can -- depending upon the company, if it's levered, we can -- you get all that stuff. The beauty of what we've created is like everything from pre-trade to post-trade, we now have a footprint in, right. And we've built out pretty much the world in terms of marketplaces and exchanges and things like that. So we got 58% synergies from Knight Capital. We got 44% or 45% from ITG. That's pretty powerful, right, that pays for a lot of leverage and pays for a lot of acquisition price. I don't know that there's another firm in the world that has that ability to do that and has a currency and is in all these places and is that broad. So one of the reasons, Mr. Rosenthal who's in the front row here, I was really excited that he joined us because he is brilliant at this stuff and we're -- we've been inundated with opportunities because the world is getting more competitive. Bid offer spreads aren't getting wider. Commission rates aren't getting higher. So we're going to be very intelligent and selective about what we do. We want to do things that are strategic, that are accretive, right and kind of makes sense to the overall story and perhaps fill in a part of that ecosystem that we're maybe not that great in. Well, we don't have large market share or that kind of fit in really nicely. So you can imagine, there's a lot of things along that continuum that make a lot of sense.

Alex Blostein, Analyst

Perfect. All right. Well, on that note, we'll leave it there.

Douglas Cifu, Chief Executive Officer

Thank you.

Alex Blostein, Analyst

Douglas Cifu, Chief Executive Officer

Thank you very much. It's always pleasure.

Alex Blostein, Analyst

Appreciate your time.

Douglas Cifu, Chief Executive Officer

Thank you.

Alex Blostein, Analyst

Thanks again.