

Earnings Presentation

Third Quarter 2019



Disclaimer



Cautionary Statement Regarding Forward Looking Statements

This presentation may contain “forward-looking statements” made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Statements regarding Virtu Financial, Inc.’s (“Virtu’s”, the “Company’s” or “our”) business that are not historical facts are forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by which, such performance or results will be achieved. The Company assumes no obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information, and if the Company does update one or more forward-looking statements, no inference should be drawn that the Company will make additional updates with respect thereto or with respect to other forward-looking statements. Forward-looking statements are based on information available at the time and/or management’s good faith belief with respect to future events, and is subject to risks and uncertainties, some or all of which are not predictable or within Virtu’s control, that could cause actual performance or results to differ materially from those expressed in the statements. Those risks and uncertainties include, without limitation: fluctuations in trading volume and volatilities in the markets in which we operate; the ability of our trading counterparties and various clearing houses to perform their obligations to us; the performance and reliability of our customized trading platform; the risk of material trading losses from our market making activities; swings in valuations in securities or other instruments in which we hold positions; increasing competition and consolidation in our industry; the effect of the acquisition of Investment Technology Group, Inc. (“ITG”) on existing business relationships, operating results, and ongoing business operations generally; the significant costs and significant indebtedness that we have incurred and expect to incur in connection with the acquisition of ITG; the risk that we may encounter significant difficulties or delays in integrating the two businesses and the anticipated benefits, cost savings and synergies or capital release may not be achieved; the assumption of potential liabilities relating to ITG’s business; the risk that cash flow from our operations and other available sources of liquidity will not be sufficient to fund our various ongoing obligations, including operating expenses, capital expenditures, debt service and dividend payments; regulatory and legal uncertainties and potential changes associated with our industry, particularly in light of increased attention from media, regulators and lawmakers to market structure and related issues; potential adverse results from legal or regulatory proceedings; our ability to remain technologically competitive and to ensure that the technology we utilize is not vulnerable to security risks, hacking and cyber-attacks; risks associated with third party software and technology infrastructure. For a discussion of the risks and uncertainties which could cause actual results to differ from those contained in forward-looking statements, see Virtu’s Securities and Exchange Commission filings, including but not limited to Virtu’s Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K filed with the SEC.

GAAP and Non-GAAP Results

This presentation includes certain non-GAAP financial measures, including Adjusted EPS, Normalized Adjusted EPS, Adjusted Net Trading Income, Normalized Adjusted Net Income, Normalized Adjusted Pre-Tax Income, EBITDA, Adjusted EBITDA, EBITDA Margin, Adjusted EBITDA Margin, Trading Capital, Adjusted Operating Expense and Adjusted Compensation Expense. Non-GAAP financial measures should be considered only as supplemental to, and not as superior to, financial measures prepared in accordance with GAAP. Other companies may use similarly titled non-GAAP financial measures that are calculated differently from the way we calculate such measures. Accordingly, our non-GAAP financial measures may not be comparable to similar measures used by other companies. We caution investors not to place undue reliance on such non-GAAP measures, but instead to consider them with the most directly comparable GAAP measure. Non-GAAP financial measures have limitations as analytical tools, and should not be considered in isolation, or as a substitute for our results as reported under GAAP. A reconciliation of non-GAAP measures to the most directly comparable financial measure prepared in accordance with GAAP is included at the end of this presentation.

Executive Summary



Business performance

- Adjusted Net Trading Income (“Adjusted NTI”)¹ of \$249.8 million in 3Q19, 4.6% higher than 2Q19
- Average daily Adjusted NTI¹ of **\$3.90** million, 2.9% higher than 2Q19
- Basic and diluted GAAP loss per share of \$0.04, vs. GAAP loss per share of \$0.27 in 2Q19; both driven by acquisition-related costs
- Normalized Adjusted EPS¹ of **\$0.21** in 3Q19, up from \$0.16 in 2Q19
- Adjusted EBITDA¹ of **\$103.9** million, 16.5% higher than 2Q19

Expense synergies

- Adjusted Operating Expense¹ of \$164 million for 3Q19
 - Full year 2019 guidance² – excluding ITG expenses prior to the close of the transaction – remains \$585-\$615 million; full year 2020 guidance remains \$620-\$650 million
 - Mid-point of FY 2020 guidance equates to a run rate of **\$159** million per quarter, compared to FY 2018 combined run rate for Virtu & ITG of **\$201** million per quarter
- Headcount at 9/30/19 was 1,118 vs. combined Virtu & ITG headcount at 12/31/18 of 1,390

Balance sheet

- Current debt outstanding of \$1.96 billion
 - Refinanced **\$500 million 6.75% bond debt with \$525 million 4.8% fixed-rate³ first lien debt** as of 10/9/19, creating annualized interest rate expense savings of \$8.6 million
 - Paid down \$50 million of floating-rate first lien debt on 11/1/19
- Debt to Pro Forma LTM 3Q 2019 Adjusted EBITDA^{1,2,4} of 3.4x

¹ This reflects a non-GAAP measure. Please refer to slides at the end of this presentation for reconciliation to the equivalent GAAP measure.

² ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

³ Virtu entered into a 5-year fixed-for-floating interest rate swap with Jefferies.

⁴ Pro Forma Adjusted EBITDA calculated as Virtu LTM 3Q19 Adjusted EBITDA (\$512 million) *plus* ITG 4Q 2018 Adjusted EBITDA (\$28 million) *plus* publicly announced target cash synergies (\$114 million) *minus* YTD estimated realized cash synergies (\$74 million).

Adjusted NTI Highlights



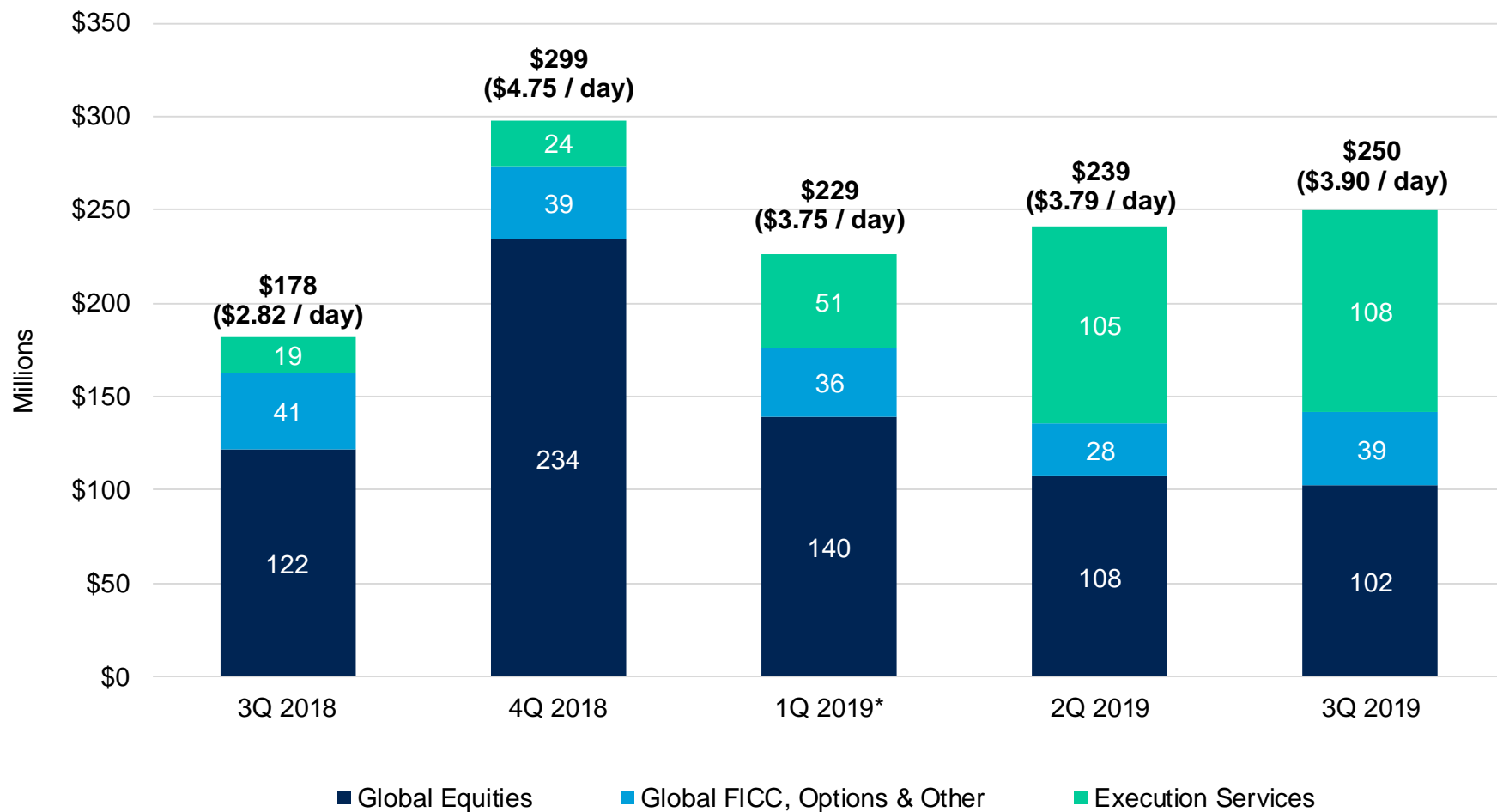
Adjusted Net Trading Income (NTI) ¹ (\$mm)	3Q 2018	4Q 2018	1Q 2019 ²	2Q 2019	3Q 2019	3Q 2019 v 2Q 2019
Market Making						
Adjusted NTI	\$158.9	\$274.9	\$177.8	\$133.8	\$141.7	+ 4.3%
Average Daily Adjusted NTI	\$2.52	\$4.36	\$2.91	\$2.12	\$2.21	
Execution Services						
Adjusted NTI	\$19.0	\$24.3	\$51.0	\$105.1	\$108.1	+ 1.2%
Average Daily Adjusted NTI	\$0.30	\$0.39	\$0.84	\$1.67	\$1.69	
Grand Total						
Total Adjusted NTI	\$177.9	\$299.2	\$228.8	\$238.9	\$249.8	+ 2.9%
Total Average Daily Adjusted NTI	\$2.82	\$4.75	\$3.75	\$3.79	\$3.90	
Market Metrics (Average Daily)						
US Equity Consolidated Volume (mm shares)	6,387	8,476	7,526	6,935	6,927	- 0.1%
Realized Volatility of S&P 500 Index	7.35	23.87	13.81	11.45	14.79	+ 29.2%
Implied Volatility of S&P 500 Index (VIX)	12.86	21.05	16.47	15.18	15.96	+ 5.1%
U.S. OTC Equity Volume (mm shares)	5,684	7,115	8,995	5,675	5,074	- 10.6%
IBKR Retail Equity Volume (mm shares)	676	675	794	636	645	+ 1.5%
Number of Trading Days	63	63	61	63	64	
3Q 2019 operating environment mixed, but similar overall to 2Q 2019						

¹ This reflects a non-GAAP measure. Please refer to slides at the end of this presentation for reconciliation to the equivalent GAAP measure.

² ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

Note: Adjusted Net Trading Income from Corporate reflected in the total sums, but not explicitly reflected as components of the table.

Adjusted NTI¹ Trend



¹ This reflects a non-GAAP measure. Please refer to slides at the end of this presentation for reconciliation to the equivalent GAAP measure.

² ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

Note: Adjusted Net Trading Income from Unallocated and Corporate reflected in the total sums, but not explicitly reflected as components of the chart.

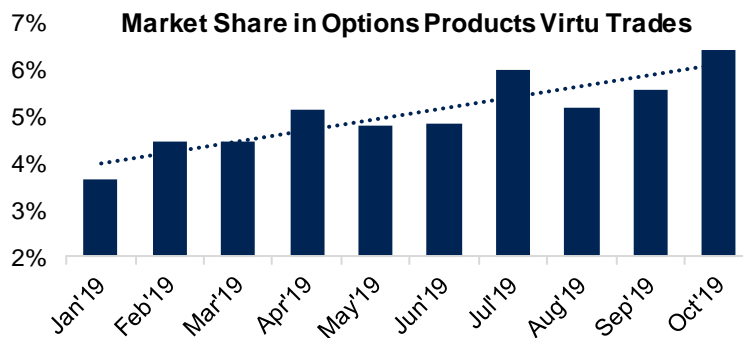
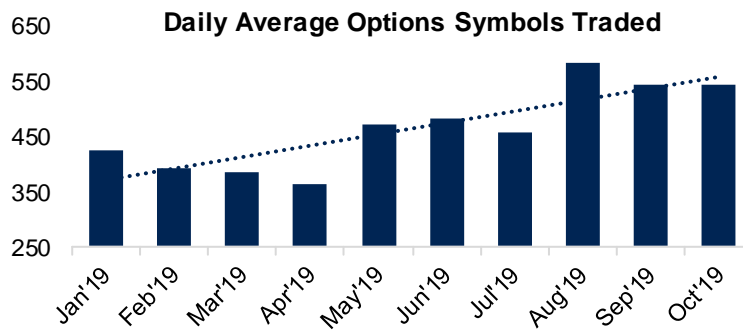
Organic Growth Initiatives



Revenue Synergies

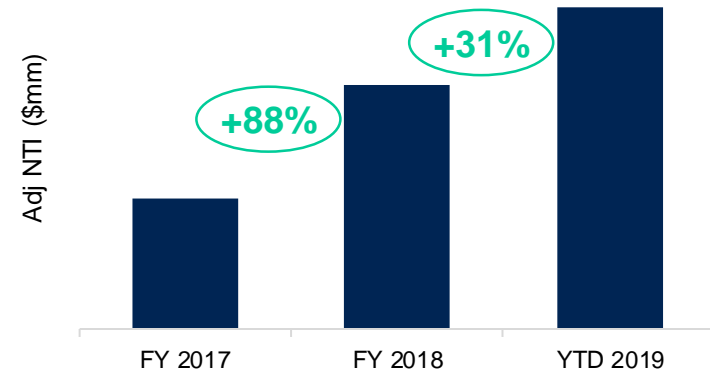
Highly scalable technology allows us to deploy trading strategies to previously un-traded products and markets or expand our footprint within existing opportunities as well as to improve internalization

Technological enhancements have allowed us to grow our Options Market Making presence



Global expansion of our customer-facing ETF offering has led to significant organic growth

YTD 2019 Adj. NTI has already surpassed 2018 total:



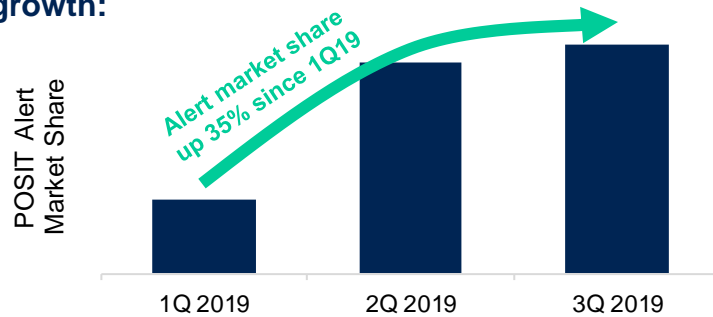
Organic Growth Initiatives



Product Enhancement

Continued investment in our global, scaled Execution Services product suite allows us to improve our clients' workflow processes and create sustainable revenue capture and growth opportunities

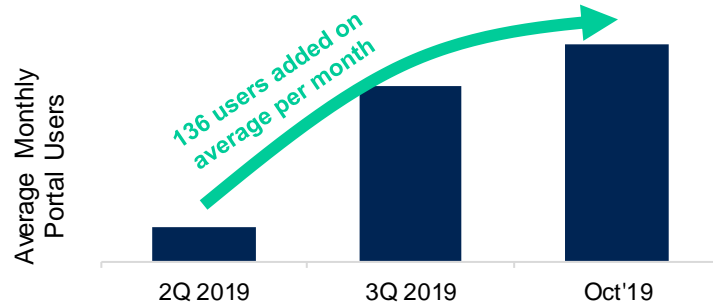
Reduced latency has contributed to POSIT Alert growth:



Newly introduced Workflow Technology and Analytics products have been well received by clients



Analytics Portal has gained traction since introduction:



14

Clients currently live on Triton Valor, the latest platform of our EMS product

34

New subscriptions year-to-date for our Analytics products, including new FX and Fixed Income modules

Organic Growth Initiatives

Complementary Service Offerings



We leverage our market structure expertise, global technology platform, and extensive distribution network to deliver efficient and transparent products and solutions to the market

Execution Concierge Service (ECS)

Virtu's outsourced trading offering – launched in October – provides full-service functionality and the utilities of a professional multi-asset global trading desk.

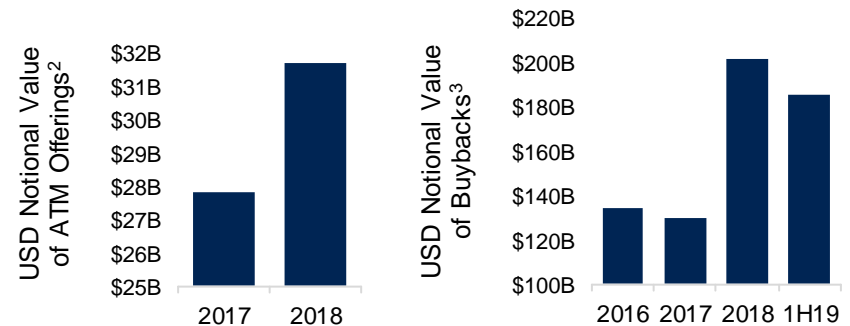
We leverage our advanced technology, transparent trading solutions and global multi-asset experience to empower buy-side clients to improve investment performance while reducing costs and enhancing operational practices.

Opimas forecasts that about **20%** of investment managers with AUM above \$50 billion will outsource some portion of their trading desks by 2022.¹

Virtu Capital Markets (VCM)

VCM will utilize Virtu's execution and distribution expertise to provide select capital markets services, including At-The-Market offerings (ATMs) and Corporate Buybacks.

ATMs and Corporate Buybacks are Large, Growing Marketplaces



¹ Markets Media, 2/27/2019, <https://www.marketsmedia.com/outsourced-trading-opportunity-amid-disruption/>

² <https://www.lockelord.com/-/media/files/newsandevents/publications/2019/05/markets-trends-2018-19-atthemarket-equity-offering.pdf>

³ <http://press.spglobal.com/2019-03-25-S-P-500-Q4-2018-Buybacks-Set-4th-Consecutive-Quarterly-Record-at-223-Billion-2018-Sets-Record-806-Billion>

Operating Expense Trajectory



Adjusted Operating Expenses ¹ (\$mm)	FY 2018 Actual			Actuals			Initial Synergy Target ³	YTD Synergy	
	Virtu	ITG	Total	1Q19 ²	2Q19	3Q19		Achieved ⁴	% of Target
Occupancy, Overhead & Cash Compensation	\$233	\$217	\$450	\$63	\$95	\$86	\$96	\$57	60%
Communications and Data Processing	169	78	247	42	54	60	18	16	93%
Adjusted Cash Operating Expenses	\$402	\$296	\$697	\$105	\$150	\$146	\$114	\$74	65%
Depreciation & Amortization	61	44	105	16	15	18	20	22	115%
Total Adjusted Operating Expenses	\$463	\$339	\$802	\$121	\$165	\$164	\$133	\$96	72%

Synergy Guidance

Adjusted Operating Expenses ¹ (\$mm)	FY 2019 Guidance ⁵			FY 2020 Guidance		
	Expense	Synergy	% of Target	Expense	Synergy	% of Target
Occupancy, Overhead & Cash Compensation	\$333 - \$343	\$71 - \$81	74% - 84%	\$337 - \$347	\$103 - \$113	108% - 118%
Communications and Data Processing	193 - 203	31 - 41	176% - 233%	203 - 213	34 - 44	193% - 250%
Adjusted Cash Operating Expenses	\$526 - \$546	\$102 - \$122	90% - 108%	\$540 - \$560	\$137 - \$157	121% - 139%
Depreciation & Amortization	59 - 69	29 - 39	145% - 196%	80 - 90	15 - 25	75% - 126%
Total Adjusted Operating Expenses	\$585 - \$615	\$131 - \$161	98% - 121%	\$620 - \$650	\$152 - \$182	114% - 137%

We expect FY 2019 synergies to be in the lower half of this guidance

We expect FY 2020 synergies to be in the upper half of this guidance

¹ This reflects a non-GAAP measure. Please refer to slides at the end of this presentation for reconciliation to the equivalent GAAP measure.

² ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

³ Gross synergies exclude \$10 million of announced revenue dis-synergies.

⁴ YTD synergies based on YTD 2019 actual vs. FY 2018 Pro Forma expenses, pro-rating Virtu results for 9 months and ITG results for 7 months.

⁵ FY 2019 expense & synergy guidance excludes ITG results prior to the March 1, 2019 transaction close date.

Debt Capitalization



	(\$mm)
Current Debt Outstanding	\$1,957
Pro Forma LTM 3Q 2019 Adjusted EBITDA ^{1,2,3}	581
Debt / Pro Forma LTM 3Q 2019 Adjusted EBITDA	3.4x

Current Debt Structure:

Debt Description	Rate	Maturity	05 Nov 2019
First Lien Debt - Floating ⁴	6.04%	Mar-2026	\$1,400
First Lien Debt - Fixed ⁵	4.80%	Mar-2026	525
Japannext ⁶	5.00%	Jan-2020	32
Total⁷	5.69%		\$1,957



Interest Rate Benefit From:	Rate Reduction	Annualized Interest Expense Savings
Reduced LIBOR & Debt Paydown	0.09%	\$4.3 million
Debt Refinancing	1.95%	\$8.6 million
Total Benefit		\$12.8 million

Prior Debt Structure:

Debt Description	Rate	Maturity	30 Jun 2019
First Lien Debt - Floating ⁴	6.13%	Mar-2026	\$1,450
Bonds	6.75%	Jun-2022	500
Japannext ⁶	5.00%	Jan-2020	32
Total⁷	6.27%		\$1,982

¹ This reflects a non-GAAP measure. Please refer to slides at the end of this presentation for reconciliation to the equivalent GAAP measure.

² ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

³ Pro Forma Adjusted EBITDA calculated as Virtu LTM 3Q 2019 Adjusted EBITDA (\$512 million) plus ITG 4Q 2018 Adjusted EBITDA (\$28 million) plus publicly announced target cash synergies (\$114 million) minus YTD estimated realized cash synergies (\$74 million).

⁴ Rate of LIBOR + 350 bps

⁵ Virtu entered into a 5-year fixed-for-floating interest rate swap with Jefferies.

⁶ 3.5 billion JPY

⁷ Blended rate

Historical Return of Capital



Adjusted EPS ¹ & Dividend Payouts since IPO ²	2Q15 to 4Q15	FY 2016	FY 2017	FY 2018	1Q 2019 ³	2Q 2019	3Q 2019
Normalized Adjusted EPS ¹	\$0.93	\$0.97	\$0.57	\$1.95	\$0.34	\$0.16	\$0.21
Dividends Declared	\$0.72	\$0.96	\$0.96	\$0.96	\$0.24	\$0.24	\$0.24
<i>Cumulative Payout Ratio</i>	77%	88%	107%	81%	81%	83%	84%

Cumulative Capital Return since IPO	
Cumulative Adjusted EPS since IPO	\$5.12
Cumulative Dividends per Share since IPO	\$4.32
<i>Cumulative % Payout since IPO</i>	84%
Share Buyback Amount per Share ⁴	\$0.34
<i>Cumulative % Payout after Buyback</i>	91%

¹ This reflects a non-GAAP measure. Please refer to slides at the end of this presentation for reconciliation to the equivalent GAAP measure.

² Virtu Financial, Inc. went public in 2Q 2015.

³ ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

⁴ Calculated as total dollar amount of shares repurchased to date divided by weighted average of fully diluted shares currently outstanding.

Virtu GAAP Income Statement



Income Statement (\$mm)	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$235.7	\$366.2	\$257.5	\$205.9	\$220.1
Commissions, net and technology services	40.3	45.5	75.1	145.1	139.6
Interest and dividends	21.5	26.2	29.1	24.2	23.4
Other	(2.3)	4.3	1.2	3.3	2.2
Total Revenues	\$295.1	\$442.2	\$363.0	\$378.5	\$385.4
Brokerage, exchange and clearance fees	68.6	73.8	64.1	75.9	74.3
Communications and data processing	39.5	38.3	41.8	54.4	59.8
Employee compensation and payroll taxes	44.8	64.8	107.8	83.7	90.6
Payment for order flow	18.3	24.3	23.6	23.6	24.5
Interest and dividends expense	32.6	40.6	45.4	36.8	34.5
Operations and administrative	15.6	13.1	22.1	34.8	28.4
Depreciation and amortization	16.0	13.6	16.5	14.8	17.6
Amortization of purchased intangibles and acquired capitalized software	6.4	6.1	10.9	20.6	18.9
Termination of office leases	1.4	0.1	-	65.2	1.3
Debt issue cost related to debt refinancing and prepayment	3.3	-	9.2	(1.3)	-
Transaction fees and expenses	(0.3)	2.5	15.1	1.8	7.2
Reserve for legal matters	1.6	-	-	-	-
Financing interest expense	17.7	16.3	22.8	34.7	34.2
Total Operating Expenses	\$265.7	\$293.5	\$379.2	\$445.0	\$391.2
Income (Loss) before income taxes	\$29.4	\$148.8	(\$16.2)	(\$66.6)	(\$5.8)
Provision for income taxes (benefit)	13.8	0.8	(2.6)	(11.1)	(0.6)
Net Income (Loss)	\$15.6	\$147.9	(\$13.6)	(\$55.5)	(\$5.2)

Normalized Adjusted EPS Reconciliation



Adjusted EPS Reconciliation (\$mm)	2Q15 to 4Q15	FY 2016	FY 2017	FY 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Pre-Tax Income (Loss)	\$135.8	\$179.6	\$113.2	\$696.4	(\$16.2)	(\$66.6)	(\$5.8)
Intangible amortization	0.2	0.2	15.4	26.1	10.9	20.6	18.9
Financing interest expense	-	-	4.6	-	-	-	-
Debt issue costs related to financing	-	5.6	10.5	11.7	9.2	(1.3)	-
Severance	0.8	1.3	14.9	9.5	53.4	7.9	13.4
Reserve for legal matter	5.4	-	0.7	2.0	-	-	-
Transaction fees and expenses	-	1.0	25.3	11.5	15.1	1.8	7.2
Trading related settlement income	-	(3.0)	(0.6)	-	-	-	-
Office lease termination	-	(0.3)	3.7	23.2	-	65.2	1.3
Write-down of assets	0.3	0.4	2.8	3.2	-	-	-
Acquisition related retention bonus	-	-	23.1	-	-	-	-
Share-based compensation	58.2	25.6	27.8	34.9	11.2	12.0	16.4
Connectivity early termination	-	-	-	7.1	-	-	-
Loss/(gain) on sale of business	-	-	-	(335.2)	-	-	-
Other	-	(0.0)	(95.0)	(5.0)	1.4	0.1	0.8
Normalized Adjusted Pre-Tax Income	\$200.5	\$210.3	\$146.2	\$485.5	\$85.0	\$39.7	\$52.1
Normalized provision for income taxes ²	71.2	74.7	54.1	111.7	20.4	9.5	12.5
Normalized Adjusted Net Income	\$129.3	\$135.6	\$92.1	\$373.8	\$64.6	\$30.1	\$39.6
Weighted average fully diluted shares outstanding	138.8	139.7	161.5	191.3	192.7	194.3	192.6
Normalized Adjusted EPS	\$0.93	\$0.97	\$0.57	\$1.95	\$0.34	\$0.16	\$0.21

¹ ITG revenues and expenses included in financials beginning on March 1, 2019 close date.

² Reflects U.S. federal, state, and local income tax rate applicable to corporations of approximately 35.5% for 2015 and 2016, 37% for 2017, 23% for 2018, and 24% for 2019.

EBITDA & Adjusted EBITDA Reconciliation



EBITDA / Adjusted EBITDA Reconciliation (\$mm)	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Pre-Tax Income (Loss)	\$148.8	(\$16.2)	(\$66.6)	(\$5.8)
Interest expense	16.3	32.0	33.4	34.2
Depreciation and amortization	19.7	27.4	35.4	36.5
EBITDA	\$184.7	\$43.2	\$2.2	\$64.9
<i>EBITDA Margin</i>	61.7%	18.9%	0.9%	26.0%
Severance	1.9	53.4	7.9	13.4
Transaction fees and expenses	2.5	15.1	1.8	7.2
Office lease termination	0.1	-	65.2	1.3
Share-based compensation	10.3	11.2	12.0	16.4
Other	(4.3)	1.4	0.1	0.8
Adjusted EBITDA	\$195.1	\$124.2	\$89.2	\$103.9
<i>Adjusted EBITDA Margin</i>	65.2%	54.3%	37.3%	41.6%

Balance Sheet & Trading Capital



Assets (\$mm)	9/30/2019
Cash and cash equivalents	\$372.7
Cash and securities segregated under regulations and other	22.1
Securities borrowed	1,578.9
Securities purchased under agreements to resell	18.8
Receivables from broker dealers and clearing organizations	1,563.7
Trading assets, at fair value	2,674.8
Receivables from customers	267.1
Property, equipment and capitalized software, net	117.2
Operating lease right-to-use of assets	305.1
Goodwill	1,195.5
Intangibles, net of accumulated amortization	513.2
Deferred tax assets	247.6
Other assets	309.9
Total Assets	\$9,186.7

Liabilities and Equity (\$mm)	9/30/2019
Short-term borrowings	\$94.9
Securities loaned	1,093.3
Securities sold under agreements to repurchase	281.8
Payables to broker dealers and clearing organizations	1,024.5
Payables to customers	118.3
Trading liabilities, at fair value	2,248.9
Tax receivable agreement obligations	256.7
Deferred tax liabilities	65.9
Accounts payable and accrued expenses and other liabilities	396.0
Operating lease liabilities	375.4
Long-term borrowings	1,934.4
Total Liabilities	\$7,890.0
Equity	1,296.7
Total Liabilities and Equity	\$9,186.7

Trading Capital (\$mm)	9/30/2019
Sum of Trading Assets	\$6,498.2
Sum of Trading Liabilities	\$4,861.7
Total Trading Capital	\$1,636.5

Appendix



Adjusted Net Trading Income Reconciliation

Consolidated Business



Adjusted Net Trading Income Reconciliation (\$mm)	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$235.7	\$366.2	\$257.5	\$205.9	\$220.1
Commissions, net and technology services	40.3	45.5	75.1	145.1	139.6
Brokerage, exchange and clearance fees, net	(68.6)	(73.8)	(64.1)	(75.9)	(74.3)
Payments for order flow	(18.3)	(24.3)	(23.6)	(23.6)	(24.5)
Interest and dividends, net	(11.1)	(14.4)	(16.2)	(12.7)	(11.2)
Adjusted Net Trading Income	\$177.9	\$299.2	\$228.8	\$238.9	\$249.8

Adjusted Net Trading Income Reconciliation



Operating Segments

Adjusted Net Trading Income Reconciliation (\$mm)	Market Making				
	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$235.6	\$366.0	\$255.1	\$205.6	219.5
Commissions, net and technology services	6.6	6.9	5.0	5.0	7.3
Brokerage, exchange and clearance fees, net	(54.3)	(59.7)	(43.0)	(40.0)	(49.0)
Payments for order flow	(18.3)	(24.2)	(23.5)	(23.6)	(24.5)
Interest and dividends, net	(10.7)	(14.1)	(15.8)	(13.1)	(11.6)
Adjusted Net Trading Income	\$158.9	\$274.9	\$177.8	\$133.8	\$141.7

Adjusted Net Trading Income Reconciliation (\$mm)	Execution Services				
	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$0.1	\$0.3	\$2.4	\$0.4	\$0.6
Commissions, net and technology services	33.7	38.6	70.1	140.2	132.4
Brokerage, exchange and clearance fees, net	(14.3)	(14.2)	(21.0)	(35.8)	(25.3)
Payments for order flow	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Interest and dividends, net	(0.4)	(0.4)	(0.5)	0.4	0.4
Adjusted Net Trading Income	\$19.0	\$24.3	\$51.0	\$105.1	\$108.1

Adjusted Net Trading Income Reconciliation (\$mm)	Corporate				
	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	-	-	-	-	-
Commissions, net and technology services	-	-	-	-	-
Brokerage, exchange and clearance fees, net	-	-	-	-	-
Payments for order flow	-	-	-	-	-
Interest and dividends, net	0.0	0.0	-	-	-
Adjusted Net Trading Income	\$0.0	\$0.0	-	-	-

Adjusted Net Trading Income Reconciliation



Market Making

Adjusted Net Trading Income Reconciliation (\$mm)	Global Equities				
	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$180.8	\$309.6	\$208.6	\$163.0	\$166.0
Commissions, net and technology services	6.5	6.9	5.0	5.0	7.3
Brokerage, exchange and clearance fees, net	(39.1)	(45.7)	(38.0)	(26.5)	(37.4)
Payments for order flow	(18.3)	(24.2)	(23.5)	(23.6)	(24.5)
Interest and dividends, net	(7.8)	(12.4)	(12.5)	(10.4)	(8.9)
Adjusted Net Trading Income	\$122.0	\$234.2	\$139.6	\$107.5	\$102.5

Adjusted Net Trading Income Reconciliation (\$mm)	Global FICC, Options, Other				
	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$58.1	\$54.6	\$49.8	\$41.1	\$52.1
Commissions, net and technology services	0.1	0.0	(0.0)	-	-
Brokerage, exchange and clearance fees, net	(14.9)	(12.9)	(10.7)	(10.0)	(10.0)
Payments for order flow	-	-	-	-	-
Interest and dividends, net	(2.5)	(2.3)	(3.0)	(2.8)	(2.8)
Adjusted Net Trading Income	\$40.8	\$39.4	\$36.1	\$28.3	\$39.3

Adjusted Net Trading Income Reconciliation (\$mm)	Unallocated				
	3Q 2018	4Q 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Trading income, net	\$(3.4)	\$1.8	\$(3.3)	\$1.4	\$1.4
Commissions, net and technology services	-	-	-	-	-
Brokerage, exchange and clearance fees, net	(0.3)	(1.1)	5.6	(3.5)	(1.5)
Payments for order flow	-	-	-	-	-
Interest and dividends, net	(0.4)	0.7	(0.2)	0.0	0.0
Adjusted Net Trading Income	\$(4.0)	\$1.3	\$2.1	\$(2.1)	\$(0.1)

Adjusted Operating Expense Reconciliation



Adjusted Operating Expenses Reconciliation (\$mm)	FY 2018	1Q 2019 ¹	2Q 2019	3Q 2019
Employee compensation and payroll taxes	\$215.6	\$107.8	\$83.7	\$90.6
Operations and administrative	64.9	22.1	34.8	28.4
Communications and data processing	176.1	41.8	54.4	59.8
Depreciation and amortization	61.2	16.5	14.8	17.6
Less:				
Severance	(9.5)	(53.4)	(7.9)	(13.4)
Share-based compensation	(34.9)	(11.2)	(12.0)	(16.4)
Sublease rent income included within other revenue	-	(2.6)	(3.4)	(3.0)
Connectivity early termination	(7.1)	-	-	-
Write-down of assets	(3.2)	-	-	-
Adjusted Operating Expenses	\$463.0	\$121.1	\$164.5	\$163.5

Adjusted Operating Expense Reconciliation

ITG Standalone



Adjusted Operating Expenses Reconciliation (\$mm)	FY 2018 (ITG)
Employee compensation and payroll taxes	183.9
Operations and administrative	78.9
Communications and data processing	78.1
Depreciation and amortization	43.6
Operating Expenses¹	\$384.6
Less:	
Share-based compensation	(23.7)
Lease consolidation	(0.4)
SEC settlement accrual and related fees	(13.2)
Acquisition costs	(8.0)
Adjusted Operating Expenses	\$339.3

Adjusted EBITDA Reconciliation

ITG Standalone



Adjusted EBITDA Reconciliation <i>(\$mm)</i>	4Q 2018
Net income / (loss)	\$(0.9)
Lease consolidation	\$(0.5)
SEC settlement accrual and related fees	\$0.1
Acquisition costs	\$8.0
Interest expense	\$0.5
Income tax expense / (benefit)	\$2.6
Depreciation & amortization	\$10.7
Share-based compensation	\$9.3
Less: Investment Income	\$(1.5)
Adjusted EBITDA	\$28.4

Market Metrics & Volumes



Americas Equities	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	3Q 2019	3Q'19 vs. 2Q'19	3Q'19 vs. 3Q'18
Volume Benchmarks (ADV)													
U.S. Equity Consolidated ADV	Shares	M	6,551	7,621	6,859	6,387	8,476	7,327	7,526	6,935	6,927	- 0.1%	+ 8.5%
U.S. Notional Value ADV	\$USD	B	272	382	331	312	408	358	342	324	317	- 2.2%	+ 1.7%
Canada Volume Traded ADV	Shares	M	955	1,284	940	1,002	1,210	1,107	1,153	979	912	- 6.8%	- 8.9%
Canada Value Traded ADV	\$CAD	B	10,638	12,893	11,144	10,852	13,909	12,186	13,317	11,992	11,395	- 5.0%	+ 5.0%
Canada Trades ADV	Trades	M	1,678	2,121	1,740	1,745	2,311	1,976	2,052	1,814	1,778	- 2.0%	+ 1.9%
Volatility Benchmarks (ADV)													
SPX Implied Volatility - QTD	#	#	11.09	17.35	15.34	12.86	21.05	16.62	16.47	15.18	15.96	+ 5.1%	+ 24.1%
SPX Realized Volatility - QTD	#	#	6.74	19.82	12.42	7.35	23.87	15.79	13.81	11.45	14.79	+ 29.2%	+ 101.1%
<i>Ratio: Realized Volatility / VIX</i>	<i>Ratio</i>	<i>%</i>	61%	114%	81%	57%	113%	91%	84%	75%	93%	+ 22.9%	+ 62.0%
SPX Intraday Volatility	#	%	0.51%	1.38%	0.99%	0.60%	1.84%	1.20%	0.96%	0.81%	0.96%	+ 18.5%	+ 60.5%
Retail Engagement Benchmarks (ADV)													
U.S. OTC Equity Volume - Shares	Shares	M	11,051	13,347	8,463	5,684	7,115	8,626	8,995	5,675	5,074	- 10.6%	- 10.7%
IBKR - Average Daily Shares	Shares	M	849	1,075	765	676	675	796	794	636	645	+ 1.5%	- 4.5%
EMEA Equities													
Volume Benchmarks (ADV)													
Pan-EU Equity Shares (excl auction)	Shares	M	4,050	4,724	3,933	3,445	4,395	4,117	3,669	3,372	3,159	- 6.3%	- 8.3%
Pan-EU € Notional Value (excl auction)	Euro	B	37.4	41.6	37.1	32.2	36.7	36.8	32.4	30.9	26.1	- 15.5%	- 18.8%
Volatility Benchmarks (ADV)													
SX5E Implied Volatility - QTD	#	#	14.74	17.00	14.90	14.23	19.15	16.30	15.53	14.86	15.81	+ 6.4%	+ 11.1%
SX5E Realized Volatility - QTD	#	#	10.11	14.88	12.19	10.77	15.90	13.41	12.97	12.56	13.93	+ 10.9%	+ 29.3%
<i>Ratio: Realized Volatility / Implied</i>	<i>Ratio</i>	<i>%</i>	69%	88%	82%	76%	83%	83%	83%	85%	88%	+ 4.2%	+ 16.4%
SX5E Intraday Volatility	#	%	0.86%	1.16%	1.00%	0.87%	1.33%	1.09%	1.02%	1.01%	1.09%	+ 7.5%	+ 24.4%
APAC Equities													
Volume Benchmarks (ADV)													
TSE ADV	Shares	M	2,173	1,934	1,779	1,627	1,827	1,790	1,490	1,428	1,405	- 1.7%	- 13.7%
TSE Notional ADV	¥	B	2,818	3,406	2,941	2,793	3,202	3,082	2,664	2,494	2,381	- 4.5%	- 14.8%
OSE Nikkei 225 Futures (Total)	Contracts	#	182.2	262.0	168.8	184.0	261.3	218.3	206.2	198.8	190.6	- 4.1%	+ 3.6%
Volatility Benchmarks (ADV)													
NKY Implied Volatility - QTD	#	#	16.28	21.70	17.01	16.50	22.93	19.49	18.93	17.58	16.98	- 3.4%	+ 2.9%
NKY Realized Volatility - QTD	#	#	11.74	23.36	10.72	13.82	25.68	18.30	17.51	11.88	13.75	+ 15.7%	- 0.5%
<i>Ratio: Realized Volatility / VNKY</i>	<i>Ratio</i>	<i>%</i>	72%	108%	63%	84%	112%	93%	93%	68%	81%	+ 19.8%	- 3.4%
NKY Intraday Volatility	#	%	0.73%	1.30%	0.81%	0.94%	1.41%	1.11%	0.95%	0.80%	0.77%	- 4.2%	- 18.1%

Market Metrics & Volumes (continued)



Global Commodities	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	3Q 2019	3Q'19 vs. 2Q'19	3Q'19 vs. 3Q'18
Futures Contract Volume (ADV)													
CME Energy ADV	Contracts	M	2.58	2.75	2.63	2.20	2.67	2.56	2.33	2.50	2.46	- 1.5%	+ 11.9%
ICE Energy ADV	Contracts	M	2.75	2.89	2.74	2.45	2.91	2.75	2.55	2.69	2.77	+ 2.9%	+ 12.9%
Total Energy	Contracts	M	5.32	5.65	5.37	4.65	5.58	5.31	4.88	5.19	5.23	+ 0.8%	+ 12.4%
Volatility Benchmarks (ADV)													
GS Comm Implied Volatility - QTD	#	#	262.9	273.5	268.2	264.7	260.9	266.8	267.4	272.3	258.2	- 5.2%	- 2.5%
GS Comm Realized Volatility - QTD	#	#	5.1	3.7	5.3	6.1	8.1	5.8	4.0	8.8	33.4	+ 278.0%	+ 447.9%
Ratio: Realized Volatility/Implied	Ratio	%	2.0%	1.3%	2.0%	2.3%	3.1%	2.2%	1.5%	3.2%	12.9%	+ 298.7%	+ 461.8%
OVX Implied Volatility - QTD	#	#	28.66	25.18	27.29	26.28	40.30	29.75	34.03	33.20	34.96	+ 5.3%	+ 33.0%
OVX Realized Volatility - QTD	#	#	67.96	72.89	68.18	60.25	86.22	71.81	61.26	80.18	87.15	+ 8.7%	+ 44.6%
Ratio: Realized Volatility / Implied	Ratio	%	238%	289%	250%	229%	214%	245%	180%	241%	249%	+ 3.2%	+ 8.7%
CBOE Energy Sector Vol	#	#	17.09	21.77	20.95	17.95	27.95	22.13	21.82	20.79	21.59	+ 3.8%	+ 20.3%
CBOE/COMEX Gold Vol Index	#	#	12.36	11.68	11.02	10.91	11.45	11.26	10.31	10.23	14.94	+ 46.1%	+ 37.0%
Global Currencies	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	3Q 2019	3Q'19 vs. 2Q'19	3Q'19 vs. 3Q'18
Spot and Futures Volume (ADV)													
Hotspot ADV FX	\$USD	M	29,554	42,225	38,414	34,556	35,064	37,541	35,378	32,540	32,196	- 1.1%	- 6.8%
Reuters ADV FX	\$USD	M	90,012	108,206	103,666	95,206	91,415	99,604	93,226	86,469	84,015	- 2.8%	- 11.8%
FastMatch FX	\$USD	M	18,416	20,192	21,429	19,397	19,540	20,147	19,774	17,462	19,375	+ 11.0%	- 0.1%
CME FX ADV	Contracts	K	921	1,100	1,035	944	940	1,004	885	872	854	- 2.2%	- 9.6%
Volatility Benchmarks (ADV)													
CVIX Implied Volatility - QTD	#	#	8.34	7.77	7.23	7.42	8.03	7.61	7.39	6.06	6.91	+ 14.2%	- 6.9%
CVIX Realized Volatility - QTD	#	#	40.80	36.20	33.31	35.93	28.57	33.50	43.43	43.65	45.78	+ 4.9%	+ 27.4%
Ratio: Realized Volatility / Implied	Ratio	%	4.9%	4.7%	4.6%	4.8%	3.6%	4.4%	5.9%	7.2%	6.6%	- 8.1%	+ 36.8%
JPMVXYG7 Implied Volatility - QTD	#	#	8.41	7.83	7.34	7.54	7.92	7.65	7.41	6.14	6.89	+ 12.3%	- 8.5%
JPMVXYG7 Realized Volatility - QTD	#	#	31.26	39.44	29.54	29.55	24.95	30.82	28.36	37.02	43.59	+ 17.8%	+ 47.5%
Ratio: Realized Volatility / Implied	Ratio	%	3.7%	5.0%	4.0%	3.9%	3.2%	4.0%	3.8%	6.0%	6.3%	+ 4.9%	+ 61.2%
JPMorgan Emerging Market Volatility	#	#	8.50	8.11	8.94	11.19	10.04	9.58	8.79	8.45	8.07	- 4.5%	- 28.0%
CBOE/CME FX € Vol Index	#	#	7.92	7.97	7.57	7.42	7.59	7.63	6.52	5.57	5.84	+ 4.8%	- 21.3%
CBOE/CME FX ¥ Vol Index	#	#	9.69	8.97	7.68	7.58	7.60	7.95	7.19	6.58	7.35	+ 11.7%	- 3.0%
CBOE/CME FX £ Vol Index	#	#	8.63	8.85	7.98	8.50	11.83	9.28	12.24	7.70	9.15	+ 18.9%	+ 7.7%
Options, Fixed Income, & Other Securities	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	3Q 2019	3Q'19 vs. 2Q'19	3Q'19 vs. 3Q'18
Futures and Options Contract Volume (ADV)													
OCC ADV	Contracts	M	16.69	22.41	18.81	18.29	22.45	20.46	19.19	19.26	19.81	+ 2.9%	+ 8.3%
VIX Futures Volume	Contracts	K	294.3	363.0	252.7	227.4	329.0	292.2	229.3	255.2	278.8	+ 9.2%	+ 22.6%