

# Earnings Presentation

Second 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

- Generated \$238.9 million of Adjusted Net Trading Income (“Adjusted NTI”)<sup>1</sup> in 2Q 2019
  - \$133.8 million from Market Making
  - \$105.1 million from Execution Services
- Average daily Adjusted NTI<sup>1</sup> of \$3.79 million for the quarter
- Normalized Adjusted EPS<sup>1</sup> of \$0.16 in 2Q 2019
  - Basic and diluted GAAP loss per share of \$0.27, driven by acquisition-related write-offs
- Adjusted EBITDA<sup>1</sup> of \$89.2 million in 2Q 2019

## Expense synergies

- Adjusted Operating Expense<sup>1</sup> \$164.5 million for 2Q 2019; full year 2019<sup>2</sup> guidance revised to \$585-\$615 million
  - Full year 2020 guidance of \$620-\$650 million introduced
  - Gross synergies<sup>2,3</sup> based on 2019 guidance total \$146 million and based on new 2020 guidance total \$167 million, compared to initial estimate of \$133 million (\$123 million net)
- Current headcount 1,157
  - Combined Virtu and ITG headcount at 12/31/2018 was 1,390

## Balance sheet

- Debt outstanding at 6/30/2019 of \$2.0 billion
- Debt to Pro Forma LTM 2Q 2019 Adjusted EBITDA<sup>1,2,4</sup> of 3.2x
- Total trading capital<sup>1</sup> \$1.63 billion at June 30, 2019

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

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

<sup>3</sup> Synergy estimates based on mid-point of guidance vs. FY 2018 Pro Forma expenses (ITG results pro-rated for 10 months for FY 2019 synergy).

<sup>4</sup> Pro Forma Adjusted EBITDA calculated as Virtu LTM 2Q 2019 Adjusted EBITDA (\$497 million) plus ITG 3Q 2018 & 4Q 2018 Adjusted EBITDA (\$53 million) plus publically announced target cash synergies (\$114 million) minus YTD estimated realized cash synergies (\$45 million).

# Low Volume & Volatility Resulted in a Challenging Environment for Market Making



A lack of market volume decreases the number of opportunities a market maker has to generate revenue

- From a high level, a market maker generates revenue by earning the spread across a large number of trades; low volume environments inherently provide for fewer trades on which a market maker can earn the spread
- Across all regions in which Virtu makes markets, volumes were down quarter-over-quarter

Market Metric	QoQ $\Delta$
US Equity Consolidated Share ADV	(8%)
US OTC Equity Share ADV	(37%)
IBKR Retail Share ADV	(20%)

Market Metric	QoQ $\Delta$
Pan-EU Notional Value ADV (excl Auction)	(5%)
TSE Notional ADV	(8%)
OSE Nikkei 225 Futures Contracts	(4%)

Low volatility typically translates to narrow spreads

- Narrow spreads dampen a market maker's opportunity to generate revenue on each trade
- Across all regions in which Virtu makes markets, volatility was down quarter-over-quarter

Market Metric	QoQ $\Delta$
SPX Implied / Realized Volatility	(8%) / (17%)
SX5E Implied / Realized Volatility	(4%) / (3%)

Market Metric	QoQ $\Delta$
NKY Implied / Realized Volatility	(7%) / (32%)

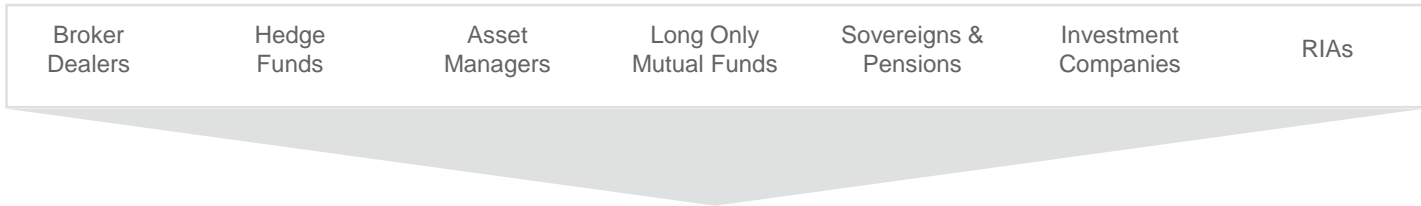
The combination of consistently lower volumes and volatility across all markets compounds the negative impact on a market maker's opportunity to generate revenue

# Virtu's Customer Offerings are Industry Leading and Embedded in Client Workflows



We provide an end-to-end suite of technology-enabled products and services that are complementary and well integrated

Global diversified customer base



Public Operating Segments

	Execution Services				Market Making	
	Financial Technology Products		Trading Solutions			
	Broker Neutral		Liquidity Sourcing	Execution Services	Customer Market Making	Proprietary Market Making
	Workflow	Analytics				
End-to-end world class product suite	Triton EMS Triton OMS Algo Wheel ITG Net CSA	Multi-Asset TCA (Pre-Trade, Real-time, & Post-Trade) Global Peer Database ACE Portfolio Optimizer Fair Value	POSIT POSIT Alert RFQ-hub MATCHNow MatchIt	Global Algo Suite Best Market Server Smart Order Router Portfolio Trading High-Touch Trading ETF Trading	ETF Blocks High Touch OTC Trading vEQ Link vFI vFX vMX	Global Equities ETFs FX Fixed Income Energy + Metals Options
Market volumes	✓	✓	✓	✓	✓	✓
Installed base fees	✓	✓				
Volatility			✓	✓	✓	✓

Multi-Asset Class

Revenue Drivers

# Strategic Growth Initiatives



Opportunities identified of \$25-50 million annually

## Continue to leverage Virtu's best-in-class technology and operational expertise to enhance Legacy ITG products

- Superior technology on the back-end results in increased throughput, enhanced client experience, and reductions in operating costs
- Harmonization of technology and support across regions and product lines allows for greater efficiency and scalability, as well as improved interaction among client interfaces
- Virtu's global multi-asset capabilities promote expansion of products and service offerings

### Own the Desktop

- Further integrate products such as Triton and TCA Portal within client workflow via a more centralized, integrated offering that allows for ergonomic deployment and scalable upgrades
- Enrich RFQ-hub back-end technology and leverage MarketAxess partnership

### Increase Client Access to Liquidity

- Leverage desktop presence to offer clients the ability to interact with Virtu's custom liquidity solutions (e.g. vEQ, vFX, vFI, VCERS) and reduce their market impact

### Expansion of Core Business

- Expand multi-asset capabilities of Triton and TCA Portal (e.g. Fixed Income and FX)
- Leverage enhanced distribution tools to grow market making offerings in ETP block trading, options, corporate bonds, and global equities
- Explore additional services and offerings in which Virtu does not currently participate

# Adjusted NTI Highlights



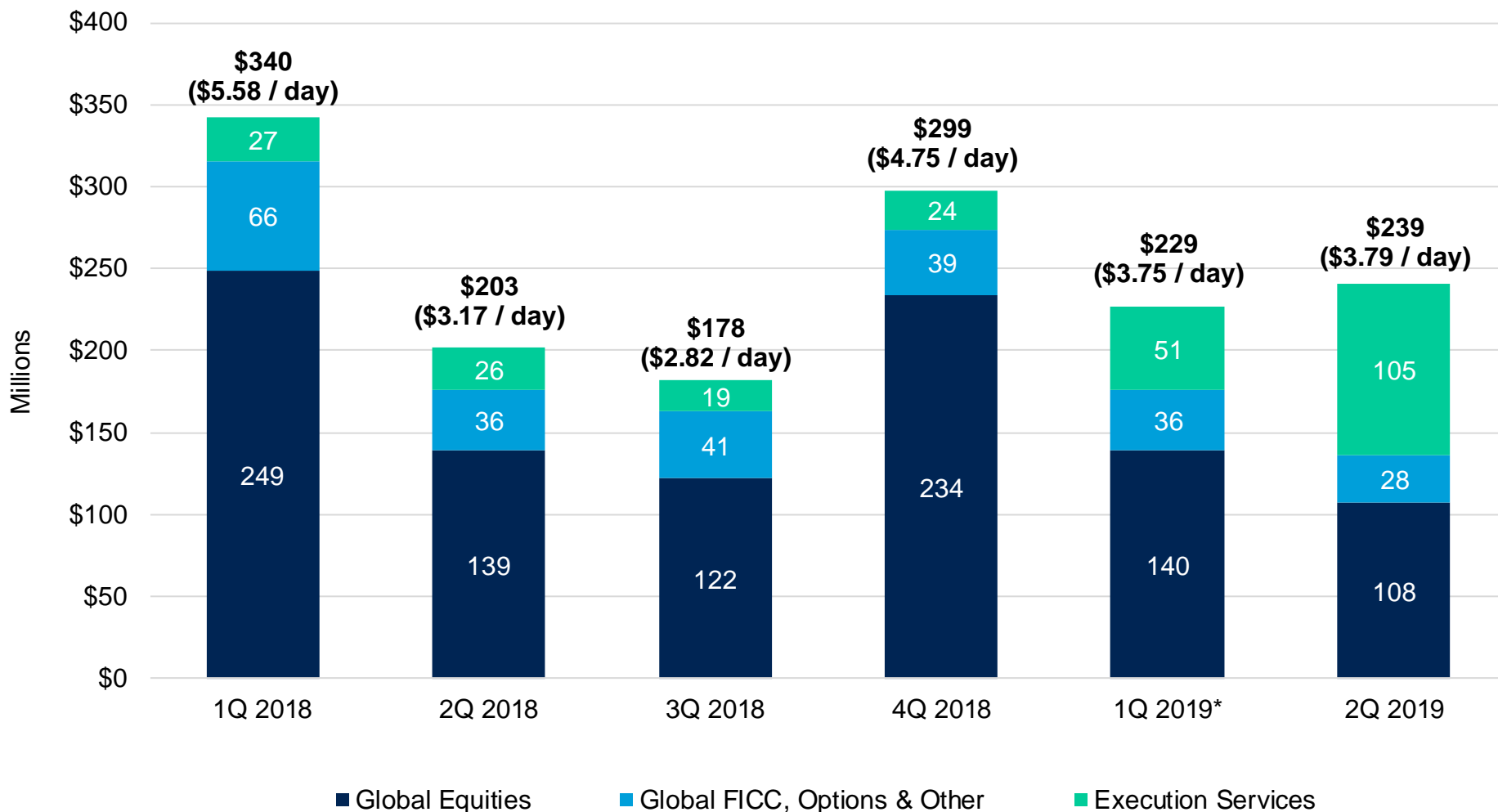
Adjusted Net Trading Income (NTI) <sup>1</sup> (\$mm)	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>2</sup>	2Q 2019	2Q 2019 v 1Q 2019	
<b>Market Making</b>								
Adjusted NTI	\$313.5	\$176.7	\$158.9	\$274.9	\$177.8	\$133.8	- 27.1%	
Average Daily Adjusted NTI	\$5.14	\$2.76	\$2.52	\$4.36	\$2.91	\$2.12		
<b>Execution Services</b>								
Adjusted NTI	\$26.7	\$26.3	\$19.0	\$24.3	\$51.0	\$105.1	+ 99.4%	
Average Daily Adjusted NTI	\$0.44	\$0.41	\$0.30	\$0.39	\$0.84	\$1.67		
<b>Grand Total</b>								
<b>Total Adjusted NTI</b>	<b>\$340.3</b>	<b>\$202.9</b>	<b>\$177.9</b>	<b>\$299.2</b>	<b>\$228.8</b>	<b>\$238.9</b>	<b>+ 1.1%</b>	
<b>Total Average Daily Adjusted NTI</b>	<b>\$5.58</b>	<b>\$3.17</b>	<b>\$2.82</b>	<b>\$4.75</b>	<b>\$3.75</b>	<b>\$3.79</b>		
<b>Market Metrics (Average Daily)</b>								
US Equity Consolidated Volume ( <i>mm shares</i> )	7,621	6,859	6,387	8,476	7,526	6,935	- 7.9%	
Realized Volatility of S&P 500 Index	19.82	12.42	7.35	23.87	13.81	11.45	- 17.1%	
Implied Volatility of S&P 500 Index (VIX)	17.35	15.34	12.86	21.05	16.47	15.18	- 7.8%	
Number of Trading Days	61	64	63	63	61	63		
					<b>VES Product</b>	<b>1Q 2019 Pro Forma</b>	<b>2Q 2019</b>	
					Execution Services	\$72.9M	\$68.8M	
					Workflow Technology & Analytics	\$37.2M	\$36.3M	
					<b>VES Total</b>	<b>\$110.1M</b>	<b>\$105.1M</b>	

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

<sup>2</sup> 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 NTI<sup>1</sup> Trend



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<sup>2</sup> 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.*



# Operating Expense Trajectory



Adjusted Operating Expenses <sup>1</sup> (\$mm)	FY 2018 Pro Forma			1Q 2019 <sup>2</sup> Actual	2Q 2019 Actual	Announced Target Synergy <sup>3</sup>	YTD Synergy Achieved <sup>4</sup>
	Virtu	ITG	Total				
Occupancy, Overhead and Cash Compensation	\$233	\$217	\$450	\$63	\$95	\$96	\$31
Communications and Data Processing	169	78	247	42	54	18	14
Depreciation & Amortization	61	44	105	16	15	20	14
<b>Adjusted Operating Expenses</b>	<b>\$463</b>	<b>\$339</b>	<b>\$802</b>	<b>\$121</b>	<b>\$165</b>	<b>\$133</b>	<b>\$59</b>

## Expense Guidance

Adjusted Operating Expenses <sup>1</sup> (\$mm)	FY 2019 Guidance - Revised			FY 2020 Guidance - New		
	Expense	Synergy <sup>5</sup>	% of Target	Expense	Synergy <sup>5</sup>	% of Target
Occupancy, Overhead and Cash Compensation	\$333 - \$343	\$76	79%	\$337 - \$347	\$108	113%
Communications and Data Processing	193 - 203	36	205%	203 - 213	39	222%
Depreciation & Amortization	59 - 69	33	170%	80 - 90	20	101%
<b>Adjusted Operating Expenses</b>	<b>\$585 - \$615</b>	<b>\$146</b>	<b>109%</b>	<b>\$620 - \$650</b>	<b>\$167</b>	<b>125%</b>

FY 2019 expense guidance reduced from original range of \$614 - \$649, resulting in a **28% increase** to expected synergies

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

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

<sup>3</sup> Gross synergies exclude \$10 million of announced revenue dis-synergies.

<sup>4</sup> YTD synergy estimates based on 1H 2019 actual (\$286 million) vs. FY 2018 Pro Forma expenses, pro-rating Virtu results for 6 months (\$231 million) and ITG results for 4 months (\$113 million).

<sup>5</sup> Synergy estimates based on mid-point of guidance vs. FY 2018 Pro Forma expenses (ITG results pro-rated for 10 months for FY 2019 synergy).

# Debt Capitalization



	(\$mm)
<b>Current Debt Outstanding</b>	<b>\$1,982</b>
Pro Forma LTM 2Q 2019 Adjusted EBITDA <sup>1,2,3</sup>	619
<b>Debt / Pro Forma LTM 2Q 2019 Adjusted EBITDA</b>	<b>3.2x</b>

Debt Description	Rate	Maturity	30 Jun 2019
Term Loan <sup>4</sup>	6.13%	Mar-2026	\$1,450
Bonds	6.75%	Jun-2022	500
Japannext <sup>5</sup>	5.00%	Jan-2020	32
<b>Total<sup>6</sup></b>	<b>6.27%</b>		<b>\$1,982</b>

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

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

<sup>3</sup> Pro Forma Adjusted EBITDA calculated as Virtu LTM 2Q 2019 Adjusted EBITDA (\$497 million) plus ITG 3Q 2018 & 4Q 2018 Adjusted EBITDA (\$53 million) plus publically announced target cash synergies (\$114 million) minus YTD estimated realized cash synergies (\$45 million).

<sup>4</sup> Current rate of LIBOR + 350 bps

<sup>5</sup> 3.5 billion JPY

<sup>6</sup> Blended rate

# Historical Return of Capital



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

## Cumulative Capital Return since IPO

Cumulative Adjusted EPS since IPO	\$4.92
Cumulative Dividends per Share since IPO	\$4.08
<b><i>Cumulative % Payout since IPO</i></b>	<b><i>83%</i></b>
Share Buyback Amount per Share <sup>4</sup>	\$0.34
<b><i>Cumulative % Payout after Buyback</i></b>	<b><i>90%</i></b>

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

<sup>2</sup> Virtu Financial, Inc. went public in 2Q 2015.

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

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

# Balance Sheet & Trading Capital



Assets (\$mm)	6/30/2019
Cash and equivalents	\$458.1
Cash restricted or segregated under regulations and other	39.5
Securities borrowed	1,201.3
Securities purchased under agreements to resell	23.0
Receivables from broker dealers and clearing organizations	1,287.1
Trading assets, at fair value	3,105.0
Receivables from customers	254.7
Property, equipment and capitalized software, net	117.9
Operating lease right-to-use of assets	318.3
Goodwill	1,196.5
Intangibles, net of accumulated amortization	532.1
Deferred tax assets	252.2
Other assets	295.8
<b>Total Assets</b>	<b>\$9,081.4</b>

Liabilities and Equity (\$mm)	6/30/2019
Short term borrowings, net	\$146.8
Securities loaned	778.4
Securities sold under agreements to repurchase	295.8
Payables to broker dealers and clearing organizations	668.5
Payables to customers	131.3
Trading liabilities, at fair value	2,716.4
Tax receivable agreement obligations	256.7
Deferred tax liabilities	65.8
Accounts payable and accrued expenses and other liabilities	349.8
Operating lease liabilities	388.1
Long-term borrowings, net	1,931.8
<b>Total Liabilities</b>	<b>\$7,729.5</b>
Equity	1,351.9
<b>Total Liabilities and Equity</b>	<b>\$9,081.4</b>

Trading Capital (\$mm)	6/30/2019
Sum of Trading Assets	\$6,368.6
Sum of Trading Liabilities	\$4,737.3
<b>Total Trading Capital</b>	<b>\$1,631.3</b>

# Appendix



# Market Metrics & Volumes



Americas Equities	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	2Q'19 vs. 1Q'19	2Q'19 vs. 2Q'18
<b>Volume Benchmarks (ADV)</b>												
U.S. Equity Consolidated ADV	Shares	M	<b>6,551</b>	7,621	6,859	6,387	8,476	<b>7,327</b>	7,526	6,935	- 7.9%	+ 1.1%
U.S. Notional Value ADV	\$USD	B	<b>272</b>	382	331	312	408	<b>358</b>	342	324	- 5.5%	- 2.1%
<b>Volatility Benchmarks (ADV)</b>												
SPX Implied Volatility - QTD	#	#	<b>11.09</b>	17.35	15.34	12.86	21.05	<b>16.62</b>	16.47	15.18	- 7.8%	- 1.0%
SPX Realized Volatility - QTD	#	#	<b>6.74</b>	19.82	12.42	7.35	23.87	<b>15.79</b>	13.81	11.45	- 17.1%	- 7.8%
Ratio: Realized Volatility / VIX	Ratio	%	<b>61%</b>	114%	81%	57%	113%	<b>95%</b>	84%	75%		
SPX Intraday Volatility	#	%	<b>0.51%</b>	1.38%	0.99%	0.60%	1.84%	<b>1.20%</b>	0.96%	0.81%	- 15.2%	- 18.2%
<b>Retail Volume Metrics (ADV)</b>												
U.S. OTC Equity Volume - Shares			<b>11,051</b>	13,347	8,463	5,690	7,115	<b>8,622</b>	8,995	5,675	- 36.9%	- 32.9%
IBKR - Average Daily Shares			<b>849</b>	1,075	765	676	675	<b>796</b>	794	636	- 19.9%	- 16.8%
EMEA Equities	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	2Q'19 vs. 1Q'19	2Q'19 vs. 2Q'18
<b>Volume Benchmarks (ADV)</b>												
Pan-EU Equity Shares (excl auction)	Shares	M	<b>4,050</b>	4,724	3,933	3,445	4,395	<b>4,117</b>	3,669	3,372	- 8.1%	- 14.3%
Pan-EU € Notional Value (excl auction)	Euro	B	<b>37.4</b>	41.6	37.1	32.2	36.7	<b>36.8</b>	32.4	30.9	- 4.7%	- 16.8%
<b>Volatility Benchmarks (ADV)</b>												
SX5E Implied Volatility - QTD	#	#	<b>14.74</b>	17.00	14.90	14.23	19.15	<b>16.30</b>	15.53	14.86	- 4.3%	- 0.3%
SX5E Realized Volatility - QTD	#	#	<b>10.11</b>	14.88	12.19	10.77	15.90	<b>13.41</b>	12.97	12.56	- 3.1%	+ 3.1%
Ratio: Realized Volatility / Implied	Ratio	%	<b>69%</b>	88%	82%	76%	83%	<b>82%</b>	83%	85%		
SX5E Intraday Volatility	#	%	<b>0.86%</b>	1.16%	1.00%	0.87%	1.33%	<b>1.09%</b>	1.02%	1.01%	- 1.3%	+ 0.7%
APAC Equities	Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	2Q'19 vs. 1Q'19	2Q'19 vs. 2Q'18
<b>Volume Benchmarks (ADV)</b>												
TSE ADV	Shares	M	<b>2,173</b>	1,934	1,779	1,627	1,827	<b>1,790</b>	1,490	1,407	- 5.6%	- 20.9%
TSE Notional ADV	¥	B	<b>2,818</b>	3,406	2,941	2,793	3,202	<b>3,082</b>	2,664	2,465	- 7.5%	- 16.2%
OSE Nikkei 225 Futures (Total)	Contracts	#	<b>182.2</b>	262.0	168.8	184.0	261.3	<b>218.3</b>	206.2	198.8	- 3.6%	+ 17.7%
<b>Volatility Benchmarks (ADV)</b>												
NKY Implied Volatility - QTD	#	#	<b>16.28</b>	21.70	17.01	16.50	22.93	<b>19.49</b>	18.93	17.58	- 7.1%	+ 3.4%
NKY Realized Volatility - QTD	#	#	<b>11.74</b>	23.36	10.72	13.82	25.68	<b>18.30</b>	17.51	11.88	- 32.1%	+ 10.8%
Ratio: Realized Volatility / VNKY	Ratio	%	<b>72%</b>	108%	63%	84%	112%	<b>94%</b>	93%	68%		
NKY Intraday Volatility	#	%	<b>0.73%</b>	1.30%	0.81%	0.94%	1.41%	<b>1.11%</b>	0.95%	0.80%	- 16.1%	- 1.2%

# Market Metrics & Volumes (continued)



Global Commodities			Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	2Q'19 vs. 1Q'19	2Q'19 vs. 2Q'18
<b>Futures Contract Volume (ADV)</b>														
CME Energy ADV	Contracts	M		<b>2.58</b>	2.75	2.63	2.20	2.67		<b>2.56</b>	2.33	2.50	+ 7.2%	- 5.0%
ICE Energy ADV	Contracts	M		<b>2.75</b>	2.89	2.74	2.45	2.91		<b>2.75</b>	2.55	2.69	+ 5.5%	- 1.9%
Total Energy	Contracts	M		<b>5.32</b>	5.65	5.37	4.65	5.58		<b>5.31</b>	4.88	5.19	+ 6.3%	- 3.4%
<b>Volatility Benchmarks (ADV)</b>														
GS Comm Implied Volatility - QTD	#	#		<b>262.9</b>	273.5	268.2	264.7	260.9		<b>266.8</b>	267.4	272.3	+ 1.9%	+ 1.5%
GS Comm Realized Volatility - QTD	#	#		<b>5.1</b>	3.7	5.3	6.1	8.1		<b>5.8</b>	4.0	8.8	+ 122.6%	+ 66.7%
<i>Ratio: Realized Volatility/Implied</i>	<i>Ratio</i>	%		<b>2.0%</b>	1.3%	2.0%	2.3%	3.1%		<b>2.2%</b>	1.5%	3.2%		
OVX Implied Volatility - QTD	#	#		<b>28.66</b>	25.18	27.29	26.28	40.30		<b>29.75</b>	34.03	33.20	- 2.4%	+ 21.6%
OVX Realized Volatility - QTD	#	#		<b>67.96</b>	72.89	68.18	60.25	86.22		<b>71.81</b>	61.26	80.18	+ 30.9%	+ 17.6%
<i>Ratio: Realized Volatility / Implied</i>	<i>Ratio</i>	%		<b>237%</b>	289%	250%	229%	214%		<b>241%</b>	180%	241%		
CBOE Energy Sector Vol	#	#		<b>17.09</b>	21.77	20.95	17.95	27.95		<b>22.13</b>	21.82	20.79	- 4.7%	- 0.8%
CBOE/COMEX Gold Vol Index	#	#		<b>12.36</b>	11.68	11.02	10.91	11.45		<b>11.26</b>	10.31	10.23	- 0.7%	- 7.2%
Global Currencies			Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	2Q'19 vs. 1Q'19	2Q'19 vs. 2Q'18
<b>Spot and Futures Volume (ADV)</b>														
Hotspot ADV FX	\$USD	M		<b>29,554</b>	42,225	38,414	34,556	35,064		<b>37,541</b>	35,378	32,540	- 8.0%	- 15.3%
EBS ADV FX (Spot)	\$USD	M		<b>53,264</b>	65,167	72,740	82,873	76,895		<b>74,476</b>	78,987	76,575	- 3.1%	+ 5.3%
FastMatch FX	\$USD	M		<b>18,416</b>	20,192	21,429	19,397	19,540		<b>20,147</b>	19,774	17,462	- 11.7%	- 18.5%
CME FX ADV	Contracts	K		<b>921</b>	1,100	1,035	944	940		<b>1,004</b>	885	872	- 1.4%	- 15.7%
<b>Volatility Benchmarks (ADV)</b>														
CVIX Implied Volatility - QTD	#	#		<b>8.34</b>	7.77	7.23	7.42	8.03		<b>7.61</b>	7.52	6.06	- 19.4%	- 16.1%
CVIX Realized Volatility - QTD	#	#		<b>40.80</b>	36.20	33.31	35.93	28.57		<b>33.50</b>	48.79	54.09	+ 10.9%	+ 62.4%
<i>Ratio: Realized Volatility / Implied</i>	<i>Ratio</i>	%		<b>4.9%</b>	4.7%	4.6%	4.8%	3.6%		<b>4.4%</b>	6.5%	8.9%		
JPMVXYG7 Implied Volatility - QTD	#	#		<b>8.41</b>	7.83	7.34	7.54	7.92		<b>7.65</b>	7.41	6.14	- 17.1%	- 16.4%
JPMVXYG7 Realized Volatility - QTD	#	#		<b>31.26</b>	39.44	29.54	29.55	24.95		<b>30.82</b>	28.36	37.02	+ 30.5%	+ 25.3%
<i>Ratio: Realized Volatility / Implied</i>	<i>Ratio</i>	%		<b>3.7%</b>	5.0%	4.0%	3.9%	3.2%		<b>4.0%</b>	3.8%	6.0%		
JPMorgan Emerging Market Volatility	#	#		<b>8.50</b>	8.11	8.94	11.19	10.04		<b>9.58</b>	8.79	8.45	- 3.9%	- 5.5%
CBOE/CME FX € Vol Index	#	#		<b>7.92</b>	7.97	7.57	7.42	7.59		<b>7.63</b>	6.52	5.57	- 14.6%	- 26.4%
CBOE/CME FX ¥ Vol Index	#	#		<b>9.69</b>	8.97	7.68	7.58	7.60		<b>7.95</b>	7.19	6.58	- 8.5%	- 14.4%
CBOE/CME FX £ Vol Index	#	#		<b>8.63</b>	8.85	7.98	8.50	11.83		<b>9.28</b>	12.24	7.70	- 37.1%	- 3.4%
Options, Fixed Income, & Other Securities			Type	Units	FY 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	FY 2018	1Q 2019	2Q 2019	2Q'19 vs. 1Q'19	2Q'19 vs. 2Q'18
<b>Futures and Options Contract Volume (ADV)</b>														
OCC ADV	Contracts	M		<b>16.69</b>	22.41	18.81	18.29	22.45		<b>20.46</b>	19.19	19.26	+ 0.3%	+ 2.4%
VIX Futures Volume	Contracts	K		<b>294.3</b>	363.0	252.7	227.4	329.0		<b>292.2</b>	229.3	252.3	+ 10.0%	- 0.2%

# Virtu GAAP Income Statement



Income Statement (\$mm)	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
Trading income, net	\$258.6	\$235.7	\$366.2	\$257.5	\$205.9
Commissions, net and technology services	46.6	38.9	45.5	75.1	145.1
Interest and dividends	21.9	21.5	26.2	29.1	24.2
Other	1.0	(2.3)	4.3	1.2	3.3
<b>Total Revenues</b>	<b>\$328.1</b>	<b>\$293.7</b>	<b>\$442.2</b>	<b>\$363.0</b>	<b>\$378.5</b>
Brokerage, exchange and clearance fees	73.3	67.3	73.8	64.1	75.9
Communications and data processing	48.8	39.5	38.3	41.8	54.4
Employee compensation and payroll taxes	41.2	44.8	64.8	107.8	83.7
Payment for order flow	15.8	18.3	24.3	23.6	23.6
Interest and dividends expense	35.0	32.6	40.6	45.4	36.8
Operations and administrative	16.2	15.6	13.1	22.1	34.8
Depreciation and amortization	16.2	16.0	13.6	16.5	14.8
Amortization of purchased intangibles and acquired capitalized software	6.8	6.4	6.1	10.9	20.6
Termination of office leases	1.8	1.4	0.1	-	65.2
Debt issue cost related to debt refinancing and prepayment	2.4	3.3	-	9.2	(1.3)
Transaction fees and expenses	1.8	(0.3)	2.5	15.1	1.8
Reserve for legal matters	0.4	1.6	-	-	-
Charges related to share based compensation at IPO	0.0	-	-	-	-
Financing interest expense	18.8	17.7	16.3	22.8	34.7
<b>Total Operating Expenses</b>	<b>\$278.5</b>	<b>\$264.3</b>	<b>\$293.5</b>	<b>\$379.2</b>	<b>\$445.0</b>
<b>Income (Loss) before income taxes</b>	<b>\$49.6</b>	<b>\$29.4</b>	<b>\$148.8</b>	<b>(\$16.2)</b>	<b>(\$66.6)</b>
Provision for income taxes (benefit)	3.0	13.8	0.8	(2.6)	(11.1)
<b>Net Income (Loss)</b>	<b>\$46.6</b>	<b>\$15.6</b>	<b>\$147.9</b>	<b>(\$13.6)</b>	<b>(\$55.5)</b>



# Adjusted Net Trading Income Reconciliation

## Consolidated Business



Adjusted Net Trading Income Reconciliation (\$mm)	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Trading income, net</b>	<b>\$406.2</b>	<b>\$258.6</b>	<b>\$235.7</b>	<b>\$366.2</b>	<b>\$257.5</b>	<b>\$205.9</b>
Commissions, net and technology services	53.8	46.6	38.9	45.5	75.1	145.1
Brokerage, exchange and clearance fees, net	(87.8)	(73.3)	(67.3)	(73.8)	(64.1)	(75.9)
Payments for order flow	(16.3)	(15.8)	(18.3)	(24.3)	(23.6)	(23.6)
Interest and dividends, net	(15.7)	(13.1)	(11.1)	(14.4)	(16.2)	(12.7)
<b>Adjusted Net Trading Income</b>	<b>\$340.3</b>	<b>\$202.9</b>	<b>\$177.9</b>	<b>\$299.2</b>	<b>\$228.8</b>	<b>\$238.9</b>

# Adjusted Net Trading Income Reconciliation



## Operating Segments

Adjusted Net Trading Income Reconciliation (\$mm)	Market Making					
	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Trading income, net</b>	<b>\$405.7</b>	<b>\$258.6</b>	<b>\$235.6</b>	<b>\$366.0</b>	<b>\$255.1</b>	<b>\$205.6</b>
Commissions, net and technology services	8.5	6.8	6.6	6.9	5.0	5.0
Brokerage, exchange and clearance fees, net	(69.1)	(59.8)	(54.3)	(59.7)	(43.0)	(40.0)
Payments for order flow	(16.2)	(15.8)	(18.3)	(24.2)	(23.5)	(23.6)
Interest and dividends, net	(15.4)	(13.2)	(10.7)	(14.1)	(15.8)	(13.1)
<b>Adjusted Net Trading Income</b>	<b>\$313.5</b>	<b>\$176.7</b>	<b>\$158.9</b>	<b>\$274.9</b>	<b>\$177.8</b>	<b>\$133.8</b>

Adjusted Net Trading Income Reconciliation (\$mm)	Execution Services					
	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Trading income, net</b>	<b>\$0.5</b>	<b>\$(0.0)</b>	<b>\$0.1</b>	<b>\$0.3</b>	<b>\$2.4</b>	<b>\$0.4</b>
Commissions, net and technology services	45.3	39.8	32.3	38.6	70.1	140.2
Brokerage, exchange and clearance fees, net	(18.8)	(13.5)	(13.0)	(14.2)	(21.0)	(35.8)
Payments for order flow	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Interest and dividends, net	(0.3)	0.1	(0.4)	(0.4)	(0.5)	0.4
<b>Adjusted Net Trading Income</b>	<b>\$26.7</b>	<b>\$26.3</b>	<b>\$19.0</b>	<b>\$24.3</b>	<b>\$51.0</b>	<b>\$105.1</b>

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

# Adjusted Net Trading Income Reconciliation



## Market Making

Adjusted Net Trading Income Reconciliation (\$mm)	Global Equities					
	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Trading income, net</b>	<b>\$324.9</b>	<b>\$198.4</b>	<b>\$180.8</b>	<b>\$309.6</b>	<b>\$208.6</b>	<b>\$163.0</b>
Commissions, net and technology services	8.5	6.7	6.5	6.9	5.0	5.0
Brokerage, exchange and clearance fees, net	(57.0)	(40.7)	(39.1)	(45.7)	(38.0)	(26.5)
Payments for order flow	(16.2)	(15.8)	(18.3)	(24.2)	(23.5)	(23.6)
Interest and dividends, net	(11.1)	(9.2)	(7.8)	(12.4)	(12.5)	(10.4)
<b>Adjusted Net Trading Income</b>	<b>\$249.0</b>	<b>\$139.4</b>	<b>\$122.0</b>	<b>\$234.2</b>	<b>\$139.6</b>	<b>\$107.5</b>

Adjusted Net Trading Income Reconciliation (\$mm)	Global FICC, Options, Other					
	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Trading income, net</b>	<b>\$82.1</b>	<b>\$55.8</b>	<b>\$58.1</b>	<b>\$54.6</b>	<b>\$49.8</b>	<b>\$41.1</b>
Commissions, net and technology services	(0.0)	0.1	0.1	0.0	(0.0)	-
Brokerage, exchange and clearance fees, net	(12.5)	(16.3)	(14.9)	(12.9)	(10.7)	(10.0)
Payments for order flow	-	-	-	-	-	-
Interest and dividends, net	(3.3)	(3.2)	(2.5)	(2.3)	(3.0)	(2.8)
<b>Adjusted Net Trading Income</b>	<b>\$66.3</b>	<b>\$36.3</b>	<b>\$40.8</b>	<b>\$39.4</b>	<b>\$36.1</b>	<b>\$28.3</b>

Adjusted Net Trading Income Reconciliation (\$mm)	Unallocated					
	1Q 2018	2Q 2018	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Trading income, net</b>	<b>\$(1.2)</b>	<b>\$4.5</b>	<b>\$(3.4)</b>	<b>\$1.8</b>	<b>\$(3.3)</b>	<b>\$1.4</b>
Commissions, net and technology services	-	-	-	-	-	-
Brokerage, exchange and clearance fees, net	0.5	(2.8)	(0.3)	(1.1)	5.6	(3.5)
Payments for order flow	-	-	-	-	-	-
Interest and dividends, net	(1.1)	(0.7)	(0.4)	0.7	(0.2)	0.0
<b>Adjusted Net Trading Income</b>	<b>\$(1.8)</b>	<b>\$1.0</b>	<b>\$(4.0)</b>	<b>\$1.3</b>	<b>\$2.1</b>	<b>\$(2.1)</b>

# Normalized Adjusted EPS Reconciliation



Adjusted EPS Reconciliation (\$mm)	2Q15 to 4Q15	FY 2016	FY 2017	FY 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Pre-Tax Income (Loss)</b>	<b>\$135.8</b>	<b>\$179.6</b>	<b>\$113.2</b>	<b>\$696.4</b>	<b>(\$16.2)</b>	<b>(\$66.6)</b>
Intangible amortization	0.2	0.2	15.4	26.1	10.9	20.6
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
Reserve for legal matter	5.4	-	0.7	2.0	-	-
Transaction fees and expenses	-	1.0	25.3	11.5	15.1	1.8
Trading related settlement income	-	(3.0)	(0.6)	-	-	-
Office lease termination	-	(0.3)	3.7	23.2	-	65.2
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
Connectivity early termination	-	-	-	7.1	-	-
Loss/(gain) on sale of business	-	-	-	(335.2)	-	-
Other	-	(0.0)	(95.0)	(5.0)	1.4	0.1
<b>Normalized Adjusted Pre-Tax Income</b>	<b>\$200.5</b>	<b>\$210.3</b>	<b>\$146.2</b>	<b>\$485.5</b>	<b>\$85.0</b>	<b>\$39.7</b>
Normalized provision for income taxes <sup>2</sup>	71.2	74.7	54.1	111.7	20.4	9.5
<b>Normalized Adjusted Net Income</b>	<b>\$129.3</b>	<b>\$135.6</b>	<b>\$92.1</b>	<b>\$373.8</b>	<b>\$64.6</b>	<b>\$30.1</b>
Weighted average fully diluted shares outstanding	138.8	139.7	161.5	191.3	192.7	194.2
<b>Normalized Adjusted EPS</b>	<b>\$0.93</b>	<b>\$0.97</b>	<b>\$0.57</b>	<b>\$1.95</b>	<b>\$0.34</b>	<b>\$0.16</b>

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

<sup>2</sup> 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)	3Q 2018	4Q 2018	1Q 2019 <sup>1</sup>	2Q 2019
<b>Pre-Tax Income (Loss)</b>	<b>\$29.4</b>	<b>\$148.8</b>	<b>(\$16.2)</b>	<b>(\$66.6)</b>
Interest expense	21.1	16.3	32.0	33.4
Depreciation and amortization	22.4	19.7	27.4	35.4
<b>EBITDA</b>	<b>\$72.9</b>	<b>\$184.7</b>	<b>\$43.2</b>	<b>\$2.2</b>
Loss/(gain) on sale of business	2.3	-	-	-
<b>EBITDA less loss/(gain) on sale of business</b>	<b>\$75.2</b>	<b>\$184.7</b>	<b>\$43.2</b>	<b>\$2.2</b>
<i>EBITDA Margin</i>	<i>42.3%</i>	<i>61.7%</i>	<i>18.9%</i>	<i>0.9%</i>
Severance	1.3	1.9	53.4	7.9
Reserve for legal matter	1.6	-	-	-
Transaction fees and expenses	(0.3)	2.5	15.1	1.8
Office lease termination	1.4	0.1	-	65.2
Write-down of assets	0.5	-	-	-
Share-based compensation	8.5	10.3	11.2	12.0
Connectivity early termination	-	-	-	-
Other	(0.1)	(4.3)	1.4	0.1
<b>Adjusted EBITDA</b>	<b>\$88.3</b>	<b>\$195.1</b>	<b>\$124.2</b>	<b>\$89.2</b>
<i>Adjusted EBITDA Margin</i>	<i>49.6%</i>	<i>65.2%</i>	<i>54.3%</i>	<i>37.3%</i>

# Adjusted EBITDA Reconciliation

## ITG Standalone



Adjusted EBITDA Reconciliation (\$mm)	3Q 2018	4Q 2018
<b>Net income / (loss)</b>	<b>\$0.2</b>	<b>\$(0.9)</b>
Lease consolidation	0.9	(0.5)
SEC settlement accrual and related fees	0.8	0.1
Acquisition costs	-	8.0
Restructuring	3.4	-
Interest expense	0.5	0.5
Income tax expense / (benefit)	2.5	2.6
Depreciation & amortization	10.9	10.7
Share-based compensation	6.3	9.3
Less: Investment Income	(0.6)	(1.5)
<b>Adjusted EBITDA</b>	<b>\$25.0</b>	<b>\$28.4</b>

# Adjusted Operating Expense Reconciliation



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

# Adjusted Operating Expense Reconciliation

## ITG Standalone



Adjusted Operating Expenses Reconciliation (\$mm)	FY 2018
Employee compensation and payroll taxes	183.9
Operations and administrative	78.9
Communications and data processing	78.1
Depreciation and amortization	43.6
<b>Operating Expenses<sup>1</sup></b>	<b>\$384.6</b>
Less:	
Share-based compensation	(23.7)
Lease consolidation	(0.4)
SEC settlement accrual and related fees	(13.2)
Acquisition costs	(8.0)
<b>Adjusted Operating Expenses</b>	<b>\$339.3</b>