

Virtu Financial, Inc.  
Form 10-K  
March 13, 2018  
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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the year ended December 31, 2017

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number: 001-37352

Virtu Financial, Inc.

(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of incorporation or organization)

32-0420206  
(I.R.S. Employer Identification No.)

300 Vesey Street  
New York, New York 10282

10282

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(Address of principal executive offices) (Zip Code)

(212) 418-0100

(Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.  
Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company  
(Do not check if a smaller reporting company) Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  
No

The aggregate market value of voting and non-voting common stock held by non-affiliates of the registrant as of June 30, 2017 was approximately \$699.7 million, based on the closing price of \$17.65 per share as reported by NASDAQ on such date.

As of March 13, 2018, the Company has the following classes of common stock outstanding:

| Class of Stock                                      | Shares Outstanding<br>as of March 13, 2018 |
|---|--|
| Class A common stock, par value \$0.00001 per share | 91,512,582                                 |
| Class C common stock, par value \$0.00001 per share | 17,066,564                                 |
| Class D common stock, par value \$0.00001 per share | 79,610,490                                 |

Portions of Part III of this Form 10-K are incorporated by reference from the Registrant's definitive proxy statement (the "2018 Proxy Statement") for its 2018 annual meeting of shareholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of the Registrant's fiscal year.

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VIRTU FINANCIAL, INC. AND SUBSIDIARIES

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Unless the context otherwise requires, the terms “we,” “us,” “our,” “Virtu” and the “Company” refer to Virtu Financial, Inc., a Delaware corporation, and its consolidated subsidiaries and the term “Virtu Financial” refers to Virtu Financial LLC, a Delaware limited liability company and a consolidated subsidiary of ours.



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PART I

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This Form 10-K contains forward looking statements, including certain statements contained in the risk factors. You should not place undue reliance on forward looking statements because they are subject to numerous uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. Forward looking statements include information concerning our possible or assumed future results of operations, including descriptions of our business strategy. These forward looking statements can be identified by the use of forward looking terminology, including the terms “may,” “will,” “should,” “believe,” “expect,” “anticipate,” “intend,” “estimate,” “project” or, in each case, their negative, or other variations or comparable terminology and expressions. These statements are based on assumptions that we have made in light of our experience in the industry as well as our perceptions of historical trends, current conditions, expected future developments and other factors we believe are appropriate under the circumstances. As you read and consider this Form 10-K, you should understand that these statements are not guarantees of performance or results and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate, may differ materially from those made in or suggested by the forward looking statements contained in this Form 10-K. By their nature, forward looking statements involve known and unknown risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. Although we believe that the forward looking statements contained in this Form 10-K are based on reasonable assumptions, you should be aware that many factors could affect our actual financial results or results of operations and cash flows, and could cause actual results to differ materially from those in such forward looking statements, including but not limited to:

- reduced levels of overall trading activity;
- dependence upon trading counterparties and clearing houses performing their obligations to us;
  - failures of our customized trading platform;
- risks inherent to the electronic market making business and trading generally;
- increased competition in market making activities and execution services;
- dependence on continued access to sources of liquidity;
- risks associated with self clearing and other operational elements of our business;
- compliance with laws and regulations, including those specific to our industry;
- obligation to comply with applicable regulatory capital requirements;
- litigation or other legal and regulatory based liabilities;
- proposed legislation that would impose taxes on certain financial transactions in the European Union, the U.S. and other jurisdictions;
- obligation to comply with laws and regulations applicable to our international operations;
- enhanced media and regulatory scrutiny and its impact upon public perception of us or of companies in our industry;
- need to maintain and continue developing proprietary technologies;

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- failure to maintain system security or otherwise maintain confidential and proprietary information;
- the effect of the Acquisition of KCG (as defined below) on existing business relationships, operating results, and ongoing business operations generally;
- the significant costs and significant indebtedness that we incurred in connection with the Acquisition of KCG, and the integration of KCG into our business;
- the risk that we may encounter significant difficulties or delays in integrating the two businesses and the anticipated benefits, costs savings and synergies or capital release may not be achieved;
- the assumption of potential liabilities relating to KCG's business;
- capacity constraints, system failures, and delays;
- dependence on third party infrastructure or systems;
- use of open source software;
- failure to protect or enforce our intellectual property rights in our proprietary technology;
- risks associated with international operations and expansion, including failed acquisitions or dispositions;
- the effects of and changes in economic conditions (such as volatility in the financial markets, inflation, monetary conditions and foreign currency and exchange rate fluctuations, foreign currency controls and/or government mandated pricing controls, as well as in trade, monetary, fiscal and tax policies in international markets) and political conditions (such as military actions and terrorist activities);
- risks associated with potential growth and associated corporate actions;
- inability to, or delay, in accessing the capital markets to sell shares or raise additional capital;
- loss of key executives and failure to recruit and retain qualified personnel; and
- risks associated with losing access to a significant exchange or other trading venue.

We undertake no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that may arise after the date of this Form 10-K.

ITEM 1. BUSINESS

BUSINESS

Overview

We are a leading financial services firm that leverages cutting edge technology to deliver liquidity to the global markets and innovative, transparent trading solutions to our clients. We believe that our broad diversification, in combination with our proprietary technology platform and low-cost structure, enables us to facilitate risk transfer between global capital markets participants by supplying execution services and competitive liquidity in over 25,000 securities and other financial instruments, on over 235 venues, in 36 countries worldwide while at the same time earning attractive margins and returns.

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Technology and operational efficiency are at the core of our business, and our focus on market making and order routing technology is a key element of our success. We have developed a proprietary, multi asset, multi currency technology platform that is highly reliable, scalable and modular, and we integrate directly with exchanges and other liquidity centers. Our market data, order routing, transaction processing, risk management and market surveillance technology modules manage our market making and institutional agency activities in an efficient manner that enables us to scale our activities globally across additional securities and other financial instruments and asset classes without significant incremental costs or third party licensing or processing fees.

We believe that technology-enabled market makers like Virtu serve an important role in maintaining and improving the overall health and efficiency of the global capital markets by continuously posting bids and offers for financial instruments and thereby providing market participants a transparent and efficient means to transfer risk. All market participants benefit from the increased liquidity, lower overall trading costs and improve execution certainty that Virtu provides.

As described in “Acquisition of KCG” below, on July 20, 2017 (the “Closing Date”), we completed our all-cash acquisition (the “Acquisition”) of KCG Holdings, Inc. (“KCG”). KCG was a leading independent securities firm offering clients a range of services designed to address trading needs across asset classes, product types and geographies. KCG combined advanced technology with specialized client service across market making, agency execution and trading venues and also engaged in principal trading via electronic market making.

Prior to the Acquisition, Virtu operated as a single reportable business segment. As a result of the Acquisition, beginning in the third quarter of 2017, we have three operating segments: Market Making, Execution Services, and Corporate. Our management allocates resources, assesses performance and manages our business according to these segments.

We primarily conduct our Americas Equities business through our three SEC registered broker dealers. We are registered with the Central Bank of Ireland and the Financial Conduct Authority (“FCA”) in the UK for our European trading and the Monetary Authority of Singapore and Australian Securities and Investments Commission for our Asia Pacific trading. We register as a market maker or liquidity provider and/or enter into direct obligations to provide liquidity on nearly every exchange or venue that offers such programs. We engage regularly with regulators around the world on issues affecting electronic trading and to advocate for increased transparency. In the U.S., we conduct our business from our headquarters in New York, New York and our trading centers in Austin, Texas and Chicago, Illinois. Abroad, we conduct our business through trading centers located in London, England, Dublin, Ireland and Singapore.

## Market Making

Our Market Making segment principally consists of market making in the cash, futures, and options markets across global equities, options, fixed income, currencies and commodities. As a leading, low cost market maker dedicated to improving efficiency and providing liquidity across multiple securities, asset classes and geographies, we aim to provide critical market functionality and robust price competition in the securities and other financial instruments in which we provide liquidity. This contribution to the financial markets, and the scale and diversity of our market making activities, provides added liquidity and transparency, which we believe are necessary and valuable components to the efficient functioning of market infrastructure and benefit all market participants. We support transparent and efficient, technologically advanced marketplaces, and advocate for legislation and regulation that promotes fair and transparent access to markets.



As a market maker, we commit capital on a principal basis by offering to buy securities from, or sell securities to, broker dealers, banks and institutions. We engage in principal trading in the Market Making segment direct to clients as well as in a supplemental capacity on exchanges and on alternative trading systems (“ATs”). As a complement to electronic market making, our cash trading business handles specialized orders and transacts on the OTC Bulletin Board marketplaces operated by the OTC Markets Group Inc. and the Alternative Investment Market of the London Stock Exchange (“AIM”).

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We make markets in a number of different assets classes, which are discussed in more detail below. We register as market makers and liquidity providers where available and support affirmative market making obligations.

We provide competitive and deep liquidity that helps to create more efficient markets around the world. We stand ready, at any time, to buy or sell a broad range of securities, and we generate revenue by buying and selling large volumes of securities and other financial instruments and earning small bid/ask spreads. Our market structure expertise, broad diversification, and execution technology enables us to provide competitive bids and offers in over 25,000 securities and other financial instruments, at over 235 venues, in 36 countries worldwide.

We believe the overall level of volumes and realized volatility in the various markets we serve have the greatest impact on our businesses. Increases in market volatility can cause bid/ask spreads to widen as market participants are more willing to transact immediately and as a result market makers' capture rate per notional amount transacted will increase.

We believe that the most relevant asset class distinctions and venues for the markets we serve include the following:

| Asset Classes  | Percentage of Adjusted Net Trading Income(1)<br>(Year Ended December 31, 2017) |   | Selected Venues in Which We Make Markets   |
|--|--|---|--|
| Americas Equities  | 50   | % | BATS, BM&F Bovespa, CHX, CME, MexDer, NASDAQ, NYSE, NYSE Arca, NYSE American, TSX, major private liquidity pools   |
| Rest Of World ("ROW") Equities   | 17   | % | Amsterdam, Aquis, ASX, BATS Europe, Bolsa de Madrid, Borsa Italiana, Brussels, EUREX, Euronext -Paris, ICE Futures Europe, Johannesburg Stock Exchange, Lisbon, LSE, OSE, SBI Japannext, SGX, SIX Swiss Exchange, TOCOM, TSE |
| Global Fixed Income, Currencies, Commodities ("FICC"), Options and Other | 23   | % | BOX, BrokerTec, CME, Currenex, EBS, eSpeed, Hotspot, ICE, ICE Futures Europe, LMAX, NASDAQ Energy Exchange, NYSE Arca Options, PHLX, Reuters/Fxall, SGX, TOCOM   |

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(1) For a full description of Adjusted Net Trading Income and a reconciliation of Adjusted Net Trading Income to trading income, net, see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations"

Technology is at the core of our business. Our team of in-house software engineers develops our software and applications, and we utilize optimized infrastructure to integrate directly with the exchanges and other trading venues on which we provide liquidity. Our focus on technology and our ability to leverage our technology enables us to be one of the lowest cost providers of liquidity to the global electronic trading marketplace.

Leveraging the scalability and low costs of our platform, we are able to test and rapidly deploy new liquidity provisioning strategies, expand to new securities, asset classes and geographies and increase transaction volumes at little incremental cost. These efficiencies are central to our ability to deliver consistently positive Adjusted Net Trading Income as our profitability per trade and per instrument is not significant, particularly in U.S. equities.

Our transaction processing is automated over the full life cycle of a trade. Our market making platform generates and disseminates continuous bid and offer quotes. At the moment when a trade is executed, our systems capture and deliver this information back to the source, in most cases within a fraction of a second, and the trade record is written into our clearing system, where it flows through a chain of control accounts that allow us to automatically and efficiently reconcile trades, positions and payments until the final settlement occurs.

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We have built and continuously refine our automated and integrated, real time systems for global trading, risk management, clearing and cash management, among other purposes. We have also assembled a proprietary connectivity network between us and exchanges around the world. Efficiency and speed in performing prescribed functions are always crucial requirements for our systems, and generally we focus on opportunities in markets that are sufficiently advanced to allow the seamless deployment of our automated strategies, risk management system and core technology.

Our systems are monitored 24 hours a day, five days a week by our core operations team and are substantially identical across our offices, in New York, New York; Austin, Texas; Chicago, Illinois; Dublin, Ireland; London, England; and Singapore. This redundancy covers our full technology platform, including our market data, order routing, transaction processing, risk management and market surveillance technology modules.

### Clients and Products

We offer direct-to-client market making services across multiple asset classes primarily to sell-side clients including global, national and regional broker dealers and banks as well as buy-side clients comprising, among others, mutual funds, pension plans, plan sponsors, hedge funds, trusts and endowments in North America, Europe and Asia.

We generally compete based on execution quality and immediacy, market coverage, price-improvement, payment for order flow, fulfillment rates and client service. In direct-to-client electronic market making in U.S. equities, execution quality is generally accepted as speed, spread and price improvement under SEC Rule 605. In other asset classes, standards for execution quality are both mandatory by applicable regulation and in many cases, client defined.

We continually work to provide clients with high quality, low-cost trade executions that enable them to satisfy their fiduciary obligation to seek the best execution on behalf of the end client. We continually refine our automated order routing models so that we may remain competitive.

### Americas Equities

Americas Equities trading accounted for approximately 50% and 29% of our Adjusted Net Trading Income for the years ended December 31, 2017 and 2016, respectively. We trade over 25,000 listed Americas equity securities including, among others, equity related futures and exchange traded products, on thirteen U.S. Securities and Exchange Commission (“SEC”) registered exchanges as well as other ATSS, including the New York Stock Exchange (“NYSE”), the NASDAQ, NYSE Arca, Cboe BATS, Chicago Stock Exchange, the TSX in Canada, Bovespa in Brazil and BMV in Mexico, and we connect to more than 20 private liquidity pools.

As exchange traded products, or “ETPs,” and other similar products have proliferated both domestically and internationally, demand has increased for trading the underlying assets or hedging such funds. Our technology has enabled us to expand into providing liquidity to this growing area by making markets across these assets in a variety of trading venues globally. We are authorized participants, and can create and/or redeem ETPs in the Americas. As of December 31, 2017, we are the Lead Market Maker or Designated Liquidity Provider in over 600 ETPs listed in the Americas.

### Rest of World (“ROW”) Equities

ROW equities trading accounted for approximately 17% and 22% of our Adjusted Net Trading Income for the years ended December 31, 2017 and 2016, respectively. Similar to our strategy in the Americas, we utilize direct connections to all of the registered exchanges in a particular jurisdiction including the London Stock Exchange, Cboe BATS Europe, NYSE Euronext, Six Swiss Exchange, Australian Securities Exchange, Tokyo Stock Exchange and Singapore Exchange, as well as other trading venues and additional pools of liquidity to which we can gain access either directly or through a broker.

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We are also well positioned in European ETPs, as an authorized participant in many European ETPs. We are authorized participants in over 2,000 ETPs and can create and/or redeem ETPs listed outside the Americas. As of December 31, 2017, we are the registered Market Maker in over 500 ETPs listed abroad.

We increased our presence in APAC equities in 2016 by completing the acquisition of a minority stake in SBI Japannext Co., Ltd. (“SBI”), a leading Proprietary Trading System in Japan.

### Global FICC, Options, and Other

Trading in Global FICC, Options, and Other accounted for approximately 23% and 46% of our Adjusted Net Trading Income for the years ended December 31, 2017 and 2016, respectively.

Our Fixed Income market making includes our activity in U.S. Treasury securities and other sovereign debt, corporate bonds, and other debt instruments. We trade these products on a variety of specialized exchanges, direct to counterparties, and other trading venues, including BrokerTec, eSpeed, DealerWeb, and BGS’s Fenics UTS.

Our Currencies market making, including spot, futures and forwards, comprises our activity in over 80 currencies, including deliverable, non-deliverable, fiat, and digital currencies, across dozens of venues and direct to counterparties. During the years ended December 31, 2017 and 2016, we were a leading participant in the major foreign exchange venues, including Reuters, Currenex, Cboe FX and NEX.

Our Commodities market making on both the CME, ICE, and Nasdaq Futures in crude oil, natural gas, heating oil, gasoline futures. We trade approximately 100 energy products and futures on the ICE, CME, and TOCOM. We also actively trade precious metals, including gold, silver, platinum and palladium, as well as base metals such as aluminum and copper.

Our Options and Other market making includes our activity on all of the U.S. options exchanges of which we are a member (i.e., Cboe, ISE and NYSE Arca) and through the U.S. futures exchanges.

### Execution Services

Virtu offers agency execution services in global equities, ETFs, futures and fixed income to institutions, banks and broker dealers. We generally earn commissions as an agent when executing orders on behalf of clients. Agency based, execution-only trading is done primarily through: (a) algorithmic trading and order routing; (b) institutional sales traders who offer portfolio trading and single stock sales trading which provides execution expertise for program, block and riskless principal trades in global equities and ETFs; and (c) matching of client orders in Virtu MatchIt (our registered ATS for U.S. equities) and in Virtu BondPoint (our fixed income ECN, which we sold in January 2018 as described in Note 4 “Business Held for Sale” of the Company’s Consolidated Financial Statements included in Part II Item 8 herein). Additionally we do act as principal on occasions, either when we manually work an order for a client, or more often, via electronic trading algorithms, executing against our firm’s liquidity. We also earn technology services revenues by providing our proprietary technology and infrastructure to select third parties for a service fee.

### Clients and Products

We offer agency execution services across multiple asset classes to buy-side clients including mutual funds, pension plans, plan sponsors, hedge funds, trusts and endowments and sell-side clients including global, national and regional broker dealers and banks in North America, Europe and Asia. In 2017, our Execution Services segment did not have any client that accounted for more than 10% of our commissions earned.

In this segment, we generally compete on trading technology, execution performance, costs, client service, market coverage, liquidity, platform capabilities and anonymity. We draw on in-house developed trading technologies to meet client criteria for best execution and for managing trading costs. As a result, we are able to attract a diverse array of clients

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in terms of strategy, size and style. We also provide algorithmic trading and order routing that combine technology, access to our differentiated liquidity and support from experienced professionals to help clients execute trades.

We offer electronic execution services in global equities, options, futures and commodities via algorithmic trading, order routing and an execution management system (“EMS”) as well as internal crossing through our registered ATS. Our ATS provides clients with an anonymous source of non-displayed liquidity.

We offer clients a broad range of products and services and voice access to global markets including sales and trading for equities, ETFs and options. Additionally, we provide buy-side clients with deep liquidity, actionable market insights, anonymity and trade executions with minimal market impact and offer comprehensive trade execution services covering the depth and breadth of the market. We handle large complex trades, accessing liquidity from our order flow and other sources. We also provide soft dollar and commission recapture programs.

## Corporate

Our Corporate segment contains investments principally in strategic financial services-oriented opportunities and maintains corporate overhead expenses and all other income and expenses that are not attributable to our other segments.

## Risk Management

We are intensely focused on risk management and it is at the core of our trading infrastructure. Our real time risk controls monitor all of our market making positions, incorporating market data and evaluating our risk exposure to continuously update our outstanding bid and offer quotes, often many times per second. Although the majority of our market making is automated, the trading process and our risk exposure are monitored by a team of individuals, including members of our senior management team, who oversee our risk management processes in real-time. Our risk management system is intrinsic to our trading infrastructure that is utilized in each of our trading centers.

Our on exchange market making strategies are designed to put minimal capital at risk at any given time by limiting the notional size of our positions. Our strategies are also designed to lock in returns through precise hedging in the primary instrument or in one or more economically equivalent instruments, as we seek to eliminate the price risk in any positions held. Our real time risk management system is built into our trading platform and is an integral part of our order life cycle, analyzing real time pricing data and ensuring that our order activity is conducted within strict pre determined trading and position limits. If our risk management system detects that a trading strategy is generating revenues or losses in excess of our preset limits, it will lockdown that strategy and alert management.



The market making activities, where we interact with customers, involve the taking on of position risks. The risks at any point in time are limited by the notional size of positions as well as other factors. The overall portfolio risks are quantified using internal risk models and monitored by the Chief Risk Officer (“CRO”), the independent risk group and senior management.

In addition, our risk management system continuously reconciles our internal transaction records against the records of the exchanges and other liquidity centers with which we interact.

Our risk management policies and risk limits are set by our Risk Advisory Committee, and overseen by our CRO, who also reports independently into the Board Risk Committee.

We utilize the following approach to managing risk:

- On Exchange Market Making Strategy Lockdowns. Messages that leave our trading environment must first pass through a series of preset risk controls, or “lockdowns,” which are intended to minimize the likelihood of unintended activities by our market making algorithms, and which cannot be modified by our traders. Not only do we implement preset risk controls to limit downside risk, but we also do the same to limit upside risk — if our risk management system detects that a trading strategy is generating revenues or losses in excess of our

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preset limits, a lockdown will be triggered. When a lockdown is triggered, our risk management system alerts us and automatically freezes the applicable trading strategy, cancels all applicable open orders and prevents the placement of additional related orders. Following a lockdown, a trader must manually reset the applicable trading strategy. While this risk prevention layer adds a degree of latency to our trading infrastructure and can prevent us from earning outsized returns in times of extreme market volatility, we believe that this trade off is necessary to properly limit our downside risk.

- Customer Market Making Model Restrictions. All models have limits in place which restrict individual position sizes, sector exposures and imbalanced portfolios with significant directional risks. Strategies are designed to automatically reduce exposures when limits are reached. The models are monitored by the trading team and the risk managers constantly.
- Aggregate Exposure Monitoring. Pursuant to our risk management policies, our automated management information systems monitor in real time and generate report on daily and periodic bases. Exposures monitored include:
  - o Risk Profiles
  - o Statistical Risk Measures including Value at Risk (“VaR”), and Equity Betas
  - o Stress and Scenario analysis
  - o Concentration measures
  - o Profit and Loss analysis
  - o Trading performance reports
- Our assets and liabilities are marked to market daily for financial reporting purposes by reference to official exchange prices, and they are re-valued continuously throughout the trading day for risk management and asset/liability management purposes.
- Operational Controls. We have a series of fully automated controls over of our business. Key automated controls include:
  - o Our technical operations system continuously monitors our network and the proper functioning of each of our trading centers around the world;
  - o Our market making system continuously evaluates the listed securities in which we provide bid and offer quotes and changes its bids and offers in such a way as to minimize exposure to directional price movements. The speed of communicating with exchanges and market centers is maximized through continuous software and network engineering innovation, allowing us to achieve real time controls over market exposure. We connect to exchanges and other electronic venues through a network of co-location facilities around the world that are monitored 24 hours a day, five days a week, by our staff of experienced network professionals;
  - o Our clearing system captures trades in real-time and performs automated reconciliations of trades and positions, corporate action processing, options exercises, securities lending and inventory management, allowing us to effectively manage operational risk;
  - o Software developed to support our market making systems performs daily profit and loss and position reconciliations; and

- o After event reviews where operational issues are evaluated and risk mitigations are identified and subsequently implemented
- Credit Controls. Trading notional limits are applied to customers and counterparties. These are monitored throughout the day by trading support and risk.
- Liquidity Controls. We seek to minimize liquidity risk by focusing the majority of trading in highly active and liquid instruments. Less liquid securities are identified and restrictions are in place as to the size of positions we hold in such instruments.

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We rely heavily on technology and automation to perform many functions within Virtu, which exposes us to various forms of cyberattacks, including data loss or destruction, unauthorized access, unavailability of service or the introduction of malicious code. We have taken significant steps to mitigate the various cyber threats, and we devote significant resources to maintain and regularly upgrade our systems and networks and review the ever changing threat landscape. We have created a Risk Advisory Committee, which includes key personnel from each of our locations globally and is comprised of our CRO and our Chief Compliance Officer, members of our senior management team, senior technologists and traders, and certain senior officers. We will continue to periodically review policies and procedures to ensure they are effective in mitigating current cyber and other information security threats. In addition to the policy reviews, we continue to look to implement technology solutions that enhance preventive and detection capabilities. We also maintain insurance coverage that may, subject to policy terms and conditions, cover certain aspects of cyber risks. However, such insurance may be insufficient to cover all losses.

Our board of directors, through the Board Risk Committee, is regularly apprised of risk events, risk profiles, trends and the activities of our Risk Advisory Committee, including our risk management policies, procedures and controls.

## Competition

Historically, our competition has been registered market making firms ranging from sole proprietors with very limited resources to large, integrated broker dealers. Today, a range of market participants may compete with us for revenues generated by market making activities across one or more asset classes and geographies, including market participants, such as Citadel Securities, Susquehanna International Group LLP, Two Sigma, Jane Street, DRW Holdings, IMC, and Optiver. Some of our competitors in market making are larger than we are and have more captive order flow in certain assets. We believe that the high cost of developing a competitive technological framework is a significant barrier to entry by new market participants.

Technology and software innovation is a primary focus for us, rather than relying solely on the speed of our network. We believe that our scalable technology allows us to access new markets and increase volumes with limited incremental costs.

## Intellectual Property and Other Proprietary Rights

We rely on federal and state laws that govern trade secrets, trademarks, domain names, copyright and contract law to protect our intellectual property and proprietary technology. We enter into confidentiality, intellectual property invention assignment and/or non competition and non solicitation agreements or restrictions with our employees, independent contractors and business partners, and we control access to, and distribution of, our intellectual property.

## Employees

As of March 5, 2018, we had approximately 560 employees, all of whom were employed on a full time basis. None of our employees are covered by collective bargaining agreements. We believe that our employee relations are good.

## Regulation

We conduct our U.S. equities and options market making and provide execution services through our three SEC registered broker dealers, Virtu Financial BD LLC, Virtu Financial Capital Markets LLC, and Virtu Americas LLC. Virtu Financial BD LLC is a self clearing broker dealer, is regulated by the SEC and its designated examining authority is the Chicago Stock Exchange. Both Virtu Americas LLC and Virtu Financial Capital Markets LLC are dual clearing broker dealers (which means each self clears certain proprietary and customer transactions and clears and settles the majority of customer transactions through fully disclosed clearing arrangements), are regulated by the SEC and their designated examining authority is the Financial Industry Regulatory Authority, Inc. (“FINRA”).

Our activities in U.S. equities are primarily self cleared. We are a full clearing member of the National Securities Clearing Corporation (NSCC), and the DTCC. Merrill Lynch, Pierce, Fenner & Smith Incorporated acts as our

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clearing broker and carries and clears, on a fully disclosed basis, accounts for our institutional customers and acts as a prime broker for certain of our market making accounts. In other asset classes, we use the services of prime brokers who provide us direct market access to markets and often cross margining and margin financing in return for an execution and clearing fee. We continually monitor the credit quality of our prime brokers and rely on large multinational banks for most of our execution and clearing needs globally.

Our energy, commodities and currency market making and trading activities are primarily conducted through Virtu Financial Global Markets LLC.

We conduct our European, Middle Eastern and African (“EMEA”) market making and trading activities from Dublin and through our Irish subsidiary, Virtu Financial Ireland Limited, which is authorized as an “Investment Firm” with the Central Bank of Ireland. Execution Services and market making are also conducted through KCG Europe Limited. In order to reduce the complexity of compliance with the requirements of the Markets in Financial Instruments Directive (“MiFID”) and Markets in Financial Instruments Directive II (“MiFID II”), the operations of KCG Europe Limited, including all of its clients, are being transitioned to Virtu Financial Ireland Limited. Virtu Financial Ireland Limited has received authorization from the Central Bank of Ireland to provide agency execution services to customers and to operate a branch office in London. Once the transition is complete, KCG Europe Limited will cease operations and withdraw its authorization with the FCA.

We conduct our Asia-Pacific (“APAC”) market making and trading activities from Singapore and through our Singapore subsidiary, Virtu Financial Singapore Pte. Ltd. Virtu Financial Singapore Pte. Ltd. is registered with the Monetary Authority of Singapore for an investment incentive arrangement.

Most aspects of our business are subject to extensive regulation under federal, state and foreign laws and regulations, as well as the rules of the various self-regulatory organization (“SROs”) of which our subsidiaries are members. The SEC, the U.S. Commodity Futures Trading Commission (“CFTC”), state securities regulators, FCA, the Securities and Futures Commission (“SFC”), FINRA, National Futures Association (“NFA”), other SROs and other U.S. and foreign governmental regulatory bodies promulgate numerous rules and regulations that may impact our business. As a matter of public policy, regulatory bodies are charged with safeguarding the integrity of the securities and other financial markets and with protecting the interests of investors in those markets. Regulated entities are subject to regulations concerning all aspects of their business, including but not limited to trading practices, order handling, best execution practices, anti money laundering and financial crimes, handling of material non public information, safeguarding data, compliance with exchange and clearinghouse rules, capital adequacy, reporting, record retention, market access and the conduct of officers, employees and other associated persons. Virtu Americas LLC carries certain customer accounts and is therefore subject to applicable SEC requirements relating to the protection of customer securities and the maintenance of a cash reserve account for the benefit of customers.

Rulemaking by these and other regulators (foreign and domestic), including resulting market structure changes, has had an impact on our regulated subsidiaries by directly affecting our method of operation and, at times, our

profitability. Legislation can impose, and has imposed, significant obligations on broker dealers, including our regulated subsidiaries. These increased obligations require the implementation and maintenance of internal practices, procedures and controls which have increased our costs and may subject us to government and regulatory inquiries, claims or penalties.

Failure to comply with any laws, rules or regulations could result in administrative or court proceedings, censures, fines, penalties, judgments, disgorgement, restitution and censures, suspension or expulsion from a certain jurisdiction, SRO or market, the revocation or limitation of licenses, the issuance of cease and desist orders or injunctions or the suspension or disqualification of the entity and/or its officers, employees or other associated persons. These administrative or court proceedings, whether or not resulting in adverse findings, can require substantial expenditures of time and money and can have an adverse impact on a firm's reputation, customer relationship and profitability. We and other broker dealers and trading firms have been the subject of requests for information and documents from the SEC, FINRA and other regulators. We have cooperated and complied with the requests for information and documents.

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The regulatory environment in which we operate is subject to constant change. Our business, financial condition and operating results may be adversely affected as a result of new or revised legislation or regulations imposed by the U.S. Congress, foreign legislative bodies, state securities regulators, U.S. and foreign governmental regulatory bodies and SROs. Additional regulations, changes in existing laws and rules, or changes in interpretations or enforcement of existing laws and rules often directly affect the method of operation and profitability of regulated broker-dealers. We cannot predict what effect, if any, the above-noted legislation, regulation or changes might have. However, there have been in the past, and could be in the future, significant technological, operational and compliance costs associated with the obligations which derive from compliance with such regulations.

On July 21, 2010, the Dodd-Frank Act was enacted in the U.S. Implementation of the Dodd-Frank Act is being accomplished through extensive rulemaking by the SEC, the CFTC and other governmental agencies. The Dodd-Frank Act includes the “Volcker Rule,” which significantly limits the ability of banks and their affiliates to engage in proprietary trading, and Title VII, which provides a framework for the regulation of the swap markets. The CFTC has largely finalized its rules with respect to those swaps markets and participants it regulates, while the SEC has not yet completed all of its rules relating to security-based swaps. One of our subsidiaries is registered with the CFTC as a floor trader, and is exempt from registration as a swap dealer based on its current activity. Registration as a swap dealer would subject our subsidiary to various requirements, including those related to capital, conduct, and reporting.

The SEC and other regulatory bodies have enacted and are actively considering rules that may affect our operations and profitability. In particular, on November 15, 2016, the SEC approved an NMS Plan to create a single, comprehensive database known as the Consolidated Audit Trail (“CAT”) to enable regulators to track all data relating to US equity and options market activity. The current compliance date for large reporting broker-dealers is November 15, 2018. Among other things, the NMS Plan will impose substantial new reporting obligations and costs on broker-dealers. Regulators may propose other market structure changes particularly considering the continued regulatory scrutiny of high frequency trading, alternative trading systems, market fragmentation, colocation, access to market data feeds, and remuneration arrangements such as payment for order flow and exchange fee structures.

We have foreign subsidiaries and plan to continue to expand our international presence. The market making industry in many foreign countries is heavily regulated, much like in the U.S. The varying compliance requirements of these different regulatory jurisdictions and other factors may limit our ability to conduct business or expand internationally. MiFID, which was implemented in November 2007, has been replaced by a more prescriptive MiFIR Regulation and MiFID II. MiFID II represents the most significant change to take place in the operation of European capital markets to date and became effective on January 3, 2018. MiFID II introduces requirements for increased pre and post trade transparency, technological and organizational requirements for firms deploying algorithmic trading techniques, restrictions on dark trading, and the roll out of a new bi-lateral OTC equity trading regime called the Systematic Internalizer regime. MiFID II will require European firms to conduct all trading on European Trading Venues including Regulated Markets, Multilateral Trading Facilities, Systematic Internalisers or equivalent third country venues, require market makers like us to post firm quotes at competitive prices and will supplement current requirements with regard to investment firms’ pre-trade risk controls related to the safe operation of electronic systems. MiFID II also imposes additional requirements on trading platforms, such as additional technological requirements, clock synchronization, microsecond processing granularity, pre-trade risk controls, transaction reporting requirements and limits on the ratio of unexecuted orders to trades. Each of these requirements imposes additional technological, operational and compliance costs on us. New laws, rules or regulations as well as any regulatory or legal actions or



proceedings, changes in legislation or regulation and changes in market customs and practices could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Certain of our subsidiaries are subject to regulatory capital rules of the SEC, FINRA, other SROs and foreign regulators. These rules, which specify minimum capital requirements for our regulated subsidiaries, are designed to measure the general financial integrity and liquidity of a broker-dealer and require that at least a minimum part of its assets be kept in relatively liquid form. Failure to maintain required minimum capital may subject a regulated subsidiary to a fine, requirement to cease conducting business, suspension, revocation of registration or expulsion by applicable regulatory authorities, and ultimately could require the relevant entity's liquidation. See "Item 1A. Risk Factors — Risks Related to Our Business — Failure to comply with applicable regulatory capital requirements could subject us to sanctions imposed by the SEC, FINRA and other SROs or regulatory bodies."

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### Corporate History

We and our predecessors have been in the electronic trading and market making business for more than 15 years. We conduct our business through Virtu Financial LLC (“Virtu Financial”) and its subsidiaries. We completed our initial public offering (“IPO”) in April 2015, after which shares of our Class A common stock began trading on NASDAQ under the ticker symbol “VIRT.”

Prior to our initial public offering, we completed a series of reorganization transactions (the “Reorganization Transactions”) pursuant to which we became the sole managing member of Virtu Financial, all of the existing equity interests in Virtu Financial were reclassified into non-voting common interest units (“Virtu Financial Units”), our certificate of incorporation was amended and restated to authorize the issuance of four classes of common stock: Class A, Class B, Class C and Class D, and the holders of Virtu Financial Units other than us subscribed for shares of Class C common stock or Class D common stock (in the case of the Founder Post-IPO Member, as defined below) in an amount equal to the number of Virtu Financial Units held by such member.

The Class A common stock and Class C common stock each provide holders with one vote on all matters submitted to a vote of stockholders, and the Class B common stock and Class D common stock each provide holders with 10 votes on all matters submitted to a vote of stockholders. The holders of Class C common stock and Class D common stock do not have any of the economic rights (including rights to dividends and distributions upon liquidation) provided to holders of Class A common stock and Class B common stock. Shares of our common stock generally vote together as a single class on all matters submitted to a vote of our stockholders.

On July 20, 2017, the Company completed the all-cash acquisition of KCG Holdings, Inc. In connection with the Acquisition, the Company issued 8,012,821 shares of the Company’s Class A stock to Aranda Investments Pte. Ltd. (together with Havelock Fund Investments Pte. Ltd., the “Temasek Stockholders”), an affiliate of Temasek Holdings (Private) Limited (“Temasek”) for an aggregate purchase price of approximately \$125.0 million and 40,064,103 shares of the Company’s Class A stock to an affiliate of North Island Holdings (the “North Island Stockholder”) for an aggregate purchase price of approximately \$618.7 million, in each case in accordance with terms of an investment agreement in a private placement exempt from the registration requirements of the Securities Act of 1933, as amended, pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended (collectively, the “July 2017 Private Placement”).

As a result of the completion of the IPO, the Reorganization Transactions, the July 2017 Private Placement, and certain other secondary offerings and permitted exchanges by current and former employees of Virtu Financial common units for shares of the Company’s Class A common stock, the Company holds an approximately 48.3% interest in Virtu Financial at December 31, 2017. The remaining issued and outstanding Virtu Financial Units are held by an affiliate of Mr. Viola (the “Founder Post-IPO Member”), two entities whose equityholders include certain members of the management of Virtu Financial and certain other current and former members of management of Virtu Financial (collectively, the “Virtu Post-IPO Members”). The Founder Post-IPO Member controls approximately 88.1% of the combined voting power of our outstanding common stock as of December 31, 2017. As a result, the Founder Post-IPO Member controls any actions requiring the general approval of our stockholders, including the election of

our board of directors, the adoption of amendments to our certificate of incorporation and bylaws and the approval of any merger or sale of substantially all of our assets. The Founder Post-IPO Member is controlled by family members of Mr. Viola, our Founder and Chairman Emeritus.

#### Available Information

Our website address is [www.virtu.com](http://www.virtu.com). The information on our website is not, and shall not be deemed to be, a part of this Annual Report on Form 10-K or incorporated into any other filings we make with the Securities and Exchange Commission (the "SEC"). Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act") are available free of charge on our website as soon as possible after we electronically file them with, or furnish them to, the SEC. You can also read, access and copy any document that we file, including this Annual Report on Form 10-K, at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Call the SEC at 1-800-SEC-0330 for information on the operation of the Public Reference

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Room. In addition, the SEC maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers, including Virtu, that are electronically filed with the SEC.

Our Investor Relations Department can be contacted at Virtu Financial, Inc., 300 Vesey Street, New York, NY, 10282, Attn: Investor Relations, e-mail: [investor\\_relations@virtu.com](mailto:investor_relations@virtu.com).

ITEM 1A. RISK FACTORS

Risks Related to Our Business

Because our revenues and profitability depend on trading volume and volatility in the markets in which we operate, they are subject to factors beyond our control, are prone to significant fluctuations and are difficult to predict.

Our revenues and profitability depend in part on the level of trading activity of securities, derivatives and other financial products on exchanges and in other trading venues in the U.S. and abroad, which are directly affected by factors beyond our control, including economic and political conditions, broad trends in business and finance and changes in the markets in which such transactions occur. Weaknesses in the markets in which we operate, including economic slowdowns in recent years, have historically resulted in reduced trading volumes for us. Declines in trading volumes generally result in lower revenues from market making and transaction execution activities. Lower levels of volatility generally have the same directional impact. Declines in market values of securities or other financial instruments can also result in illiquid markets, which can also result in lower revenues and profitability from market making and transaction execution activities. Lower price levels of securities and other financial instruments, as well as compressed bid/ask spreads, which often follow lower pricing, can further result in reduced revenues and profitability. These factors can also increase the potential for losses on securities or other financial instruments held in inventory and failures of buyers and sellers to fulfill their obligations and settle their trades, as well as claims and litigation. Declines in the trading activity of institutional or “buy-side” market participants may result in lower revenue and/or diminished opportunities for us to earn commissions from execution activities. Any of the foregoing factors could have a material adverse effect on our business, financial condition, results of operations and cash flows. In the past, our revenues and operating results have varied significantly from period to period due primarily to movements and trends in the underlying markets and to fluctuations in trading volumes and volatility levels. As a result, period to period comparisons of our revenues and operating results may not be meaningful, and future revenues and profitability may be subject to significant fluctuations or declines.

We are dependent upon our trading counterparties and clearing houses to perform their obligations to us.

Our business consists of providing consistent two-sided liquidity to market participants across numerous geographies and asset classes. In the event of a systemic market event, resulting from large price movements or otherwise, certain market participants may not be able to meet their obligations to their trading counterparties, who, in turn, may not be able to meet their obligations to their other trading counterparties, which could lead to major defaults by one or more market participants. Following the implementation of certain mandates under the Dodd-Frank Act in the U.S. and similar legislation worldwide, many trades in the securities and futures markets, and an increasing number of trades in

the over the counter derivatives markets, are cleared through central counterparties. These central counterparties assume, and specialize in managing, counterparty performance risk relating to such trades. However, even when trades are cleared in this manner, there can be no assurance that a clearing house's risk management methodology will be adequate to manage one or more defaults. Given the concentration of counterparty performance risk that is concentrated in central clearing parties, any failure by a clearing house to properly manage a default could lead to a systemic market failure. If our trading counterparties do not meet their obligations to us, or if any central clearing parties fail to properly manage defaults by market participants, we could suffer a material adverse effect on our business, financial condition, results of operations and cash flows.

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We may incur losses in our market making activities and our execution services businesses in the event of failures of our customized trading platform.

The success of our market making business is substantially dependent on the accuracy and performance of our customized trading platform, which evaluates and monitors the risks inherent in our market making strategies and execution services business, assimilates market data and reevaluates our outstanding quotes and positions continuously throughout the trading day. Our strategies are designed to automatically rebalance our positions throughout the trading day to manage risk exposures on our positions. Flaws in our strategies, order management system, latencies or inaccuracies in the market data that we use to generate our quotes, or human error in managing risk parameters or other strategy inputs, may lead to unexpected and unprofitable trades, which may result in material trading losses and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may incur material trading losses from our market making activities.

A significant portion of our revenues are derived from our trading as principal in our role as a formal or registered market maker and liquidity provider on various exchanges and markets, as well as direct to customer market making. We may incur trading losses relating to these activities since each primarily involves the purchase, sale or short sale of securities, futures and other financial instruments for our own account. In any period, we may incur significant trading losses for a variety of reasons, including price changes, performance, size and volatility of portfolios we may hold in connection with our customer market making activities, lack of liquidity in instruments in which we have positions and the required performance of our market making obligations. Furthermore, we may from time to time develop large position concentrations in securities or other financial instruments of a single issuer or issuers engaged in a specific industry, or alternatively a single future or other financial instrument, which would result in the risk of higher trading losses than if our concentration were lower.

These risks may limit or restrict, for example, our ability to either resell securities we have purchased or to repurchase securities we have sold. In addition, we may experience difficulty borrowing securities to make delivery to purchasers to whom we have sold securities short or lenders from whom we have borrowed securities.

In our role as a market maker, we attempt to derive a profit from bid/ask spreads. However, competitive forces often require us to match or improve upon the quotes that other market makers display, thereby narrowing bid/ask spreads, and to hold long or short positions in securities, futures or other financial instruments. We cannot assure you that we will be able to manage these risks successfully or that we will not experience significant losses from such activities, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our risk management activities related to our on exchange market making strategies utilize a four pronged approach, consisting of strategy lockdowns, centralized strategy monitoring, aggregate exposure monitoring and operational controls. In particular, messages that leave our trading environment first must pass through a series of preset risk controls or “lockdowns” that are intended to minimize the likelihood of unintended activities. In certain cases this layer of risk management, which adds a layer of latency to our process, may limit our ability to profit from acute volatility in the markets. This would be the case, for example, where a particular strategy being utilized by one of our traders is temporarily locked down for generating revenue in excess of the preset risk limit. Even if we are able to quickly and correctly identify the reasons for a lockdown and quickly resume the trading strategy, we may limit our potential upside as a result of our risk management policies.

The valuation of the securities we hold at any particular time may result in large and occasionally anomalous swings in the value of our positions and in our earnings in any period.

The market prices of our long and short positions are reflected on our books at closing prices, which are typically the last trade prices before the official close of the primary exchange on which each such security trades. Given that we manage a globally integrated portfolio, we may have large and substantially offsetting positions in securities that trade on different exchanges that close at different times of the trading day and may be denominated in different currencies. Further, there may be large and occasionally anomalous swings in the value of our positions on any particular day and in our earnings in any period. Such swings may be especially pronounced on the last business day of each

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calendar quarter, as the discrepancy in official closing prices resulting from the asynchronous closing times may cause us to recognize a gain or loss in one quarter which would be substantially offset by a corresponding loss or gain in the following quarter.

We are exposed to losses due to lack of perfect information.

As a market maker, we provide liquidity by consistently buying securities from sellers and selling securities to buyers. We may at times trade with others who have information that is more accurate or complete than the information we have, and as a result we may accumulate unfavorable positions preceding large price movements in a given instrument. Should the frequency or magnitude of these events increase, our losses would likely increase correspondingly, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We face substantial competition which would harm our financial performance.

Revenues from our market making activities depend on our ability to offer to buy and sell financial instruments at prices that are attractive and represent the best bid and/or offer in a given instrument at a given time. To attract order flow, we compete with other firms not only on our ability to provide liquidity at competitive prices, but also on other factors such as order execution speed and technology. Similarly, revenues from our technology services and agency execution services depend on our ability to offer cutting edge technology and risk management solutions.

Our competitors include other registered market makers, as well as unregulated or lesser regulated trading and technology firms that also compete to provide liquidity and Execution Services. Our competitors range from sole proprietors with very limited resources to highly sophisticated groups, hedge funds, well capitalized broker dealers and proprietary trading firms or other market makers that have substantially greater financial and other resources than we do. These larger and better capitalized competitors may be better able to respond to changes in the market making industry, to compete for skilled professionals, to finance acquisitions, to fund internal growth, to manage costs and expenses and to compete for market share generally. Trading firms that are not registered as broker dealers or broker dealers not registered as market makers may in some instances have certain advantages over more regulated firms, including our subsidiaries that may allow them to bypass regulatory restrictions and trade more cheaply than more regulated participants on some markets or exchanges. In addition, we may in the future face enhanced competition from new market participants that may also have substantially greater financial and other resources than we do, which may result in compressed bid/ask spreads in the marketplace that may negatively impact our financial performance. Moreover, current and potential competitors may establish cooperative relationships among themselves or with third parties or may consolidate to enhance their services and products. The trend toward increased competition in our business is expected to continue, and it is possible that our competitors may acquire increased market share. Increased competition or consolidation in the marketplace could reduce the bid/ask spreads on which our business and profitability depend, and may also reduce commissions paid by institutional clients for execution services, negatively impacting our financial performance. As a result, there can be no assurance that we will be able to compete effectively with current or future competitors, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our market making business is concentrated in U.S. equities; accordingly, our operating results may be negatively impacted by changes that affect the U.S. equity markets.

Approximately 81% of our market making revenues for 2017 were derived from our market making in U.S. equities. The level of activity in the U.S. equity markets is directly affected by factors beyond our control, including U.S.



economic and political conditions, broad trends in business and finance, legislative and regulatory changes and changes in volume and price levels of U.S. equity transactions. As a result, to the extent these or other factors reduce trading volume or volatility or result in a downturn in the U.S. equity markets, we may experience a material adverse effect on, our business, financial condition and operating results.

We could lose significant sources of revenues if we lose any of our larger clients.

At times, a limited number of clients could account for a significant portion of our order flow, revenues

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and profitability, and we expect a large portion of the future demand for, and profitability from, our trade execution services to remain concentrated within a limited number of clients. The loss of one or more larger clients could have an adverse effect on our revenues and profitability in the future. None of these clients is currently contractually obligated to utilize us for trade execution services and, accordingly, these clients may direct their trade execution activities to other execution providers or market centers at any time. Some of these clients have grown organically or acquired market makers and specialist firms to internalize order flow or will have entered into strategic relationships with competitors. There can be no assurance that we will be able to retain these significant clients or that such clients will maintain or increase their demand for our trade execution services. Further, the continued integration of legacy systems and the development of new systems could result in disruptions to our ongoing businesses and relationships or cause issues with standards, controls, procedures and policies that adversely affect our ability to maintain relationships with customers, or to solicit new customers. The loss, or a significant reduction, of demand for our services from any of these clients could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We are subject to liquidity risk in our operations.

We require liquidity to fund various ongoing obligations, including operating expenses, capital expenditures, debt service and dividend payments. Our main sources of liquidity are cash flow from the operations of our subsidiaries, our broker-dealer revolving credit facility (described under “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Long-Term Borrowings”), margin financing provided by our prime brokers and cash on hand. Our liquidity could be materially impaired by a number of factors, including reduced business activity due to a market downturn, adverse regulatory action or a downgrade of our credit rating. If our business activities decrease or we are unable to borrow additional funds in the future on terms that are acceptable to us, or at all, we could suffer a material adverse effect on our business, financial condition, results of operations and cash flows.

Self-clearing and other elements of our trade processing operations expose us to significant operational, financial and liquidity risks.

We currently self-clear substantially all of our domestic equity trades and may expand our self-clearing operations internationally and across product offerings and asset classes in the future. Self-clearing exposes our business to operational risks, including business disruption, operational inefficiencies, liquidity, financing risks, counterparty performance risk and potentially increased expenses and lost revenue opportunities. While our clearing platform, operational processes, risk methodologies, enhanced infrastructure and current and future financing arrangements have been carefully designed, we may nevertheless encounter difficulties that may lead to operating inefficiencies, including delays in implementation, disruption in the infrastructure that supports the business, inadequate liquidity and financial loss. Any such delay, disruption or failure could negatively impact our ability to effect transactions and manage our exposure to risk and could have a material adverse effect on our business, financial condition, results of operations cash flows.

We have a substantial amount of indebtedness, which could negatively impact our business and financial condition, and our debt agreements contain restrictions that will limit our flexibility in operating our business.

We are a highly leveraged company. As of December 31, 2017, we had an aggregate of \$1,431 million outstanding indebtedness under our long-term borrowings. If we cannot generate sufficient cash flow from operations to service our debt, we may need to refinance our debt, dispose of assets or issue equity to obtain necessary funds. We do not know whether we will be able to take any of such actions on a timely basis, on terms satisfactory to us or at all.

Additionally, we are party to the \$150.0 million uncommitted facility (the “Uncommitted Facility”) under which we had \$25.0 million of borrowings outstanding as of December 31, 2017. We are also party to the \$500.0 million revolving credit facility (the “Revolving Credit Facility”) under which we had \$7.0 million of borrowing outstanding as of December 31, 2017. Also, certain of our non-guarantor subsidiaries are party to various short-term credit facilities with various prime brokers and other financial institutions in an aggregate amount of \$543.0 million under which we had \$205.7 million in borrowings outstanding at December 31, 2017.

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The Fourth Amended and Restated Credit Agreement and the indenture governing the Notes contain, and any other existing or future indebtedness of ours may contain a number of covenants that impose significant operating and financial restrictions on us, including restrictions on our and our restricted subsidiaries' ability to, among other things:

- incur additional debt, guarantee indebtedness or issue certain preferred equity interests;
- pay dividends on or make distributions in respect of, or repurchase or redeem, our equity interests or make other restricted payments;
- prepay, redeem or repurchase certain debt;
- make loans or certain investments;
- sell certain assets;
- create liens on our assets;
- consolidate, merge or sell or otherwise dispose of all or substantially all of our assets;
- enter into certain transactions with our affiliates;
-