



Market Structure & Technology

Sample Market Trends Reports:

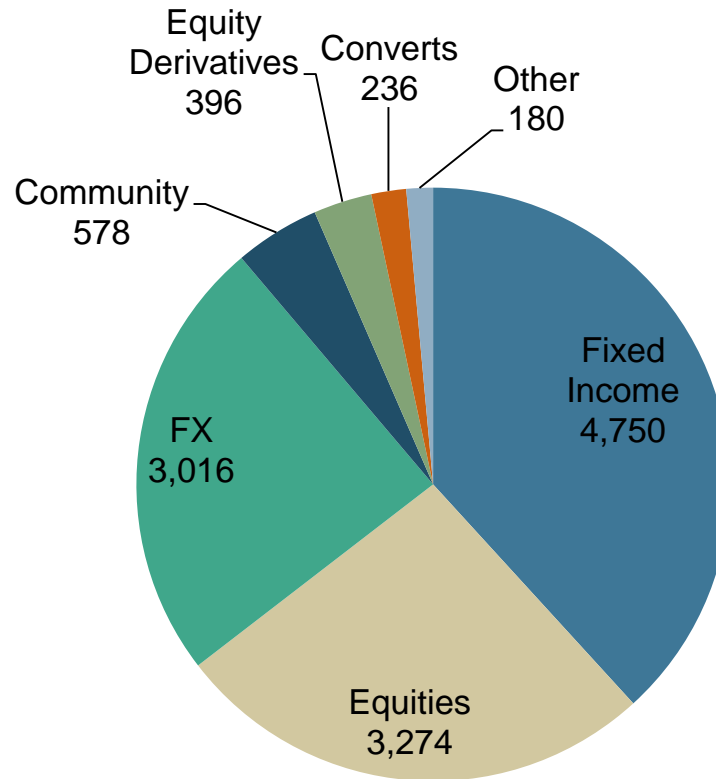
- Fixed Income
- Equities
- Foreign Exchange

2017

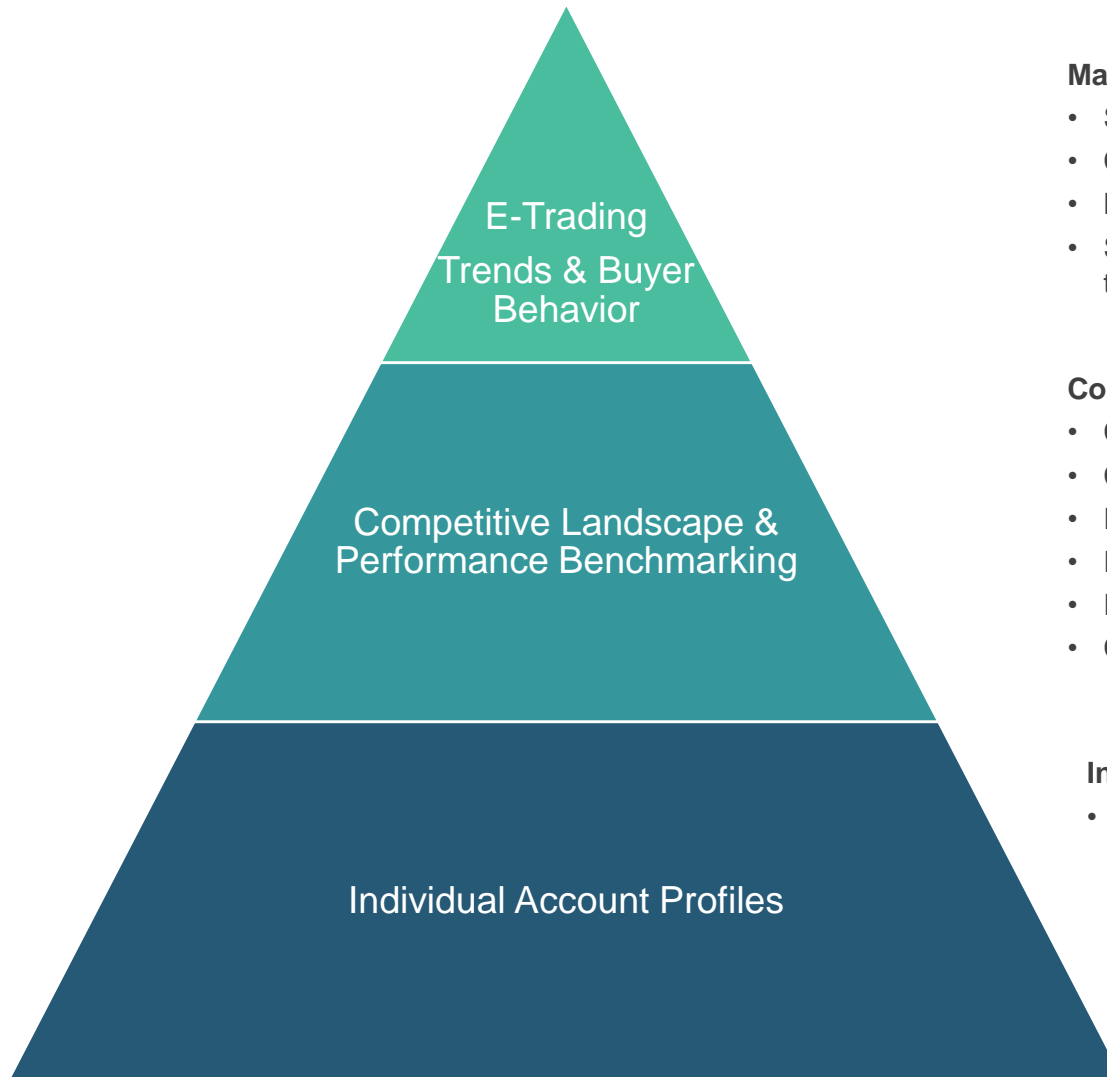
Market Structure & Technology

Our research examines financial product usage, market share, market sizing, electronic trading, perceive regulatory impact, and much more.

12,430 Interviews Annually



Insights Are Underpinned By In-Person Interviews



Market Trends

- Strategic shifts in the market
- Customer behavior and selection criteria
- Multi-year trends and analysis
- Strategic implications: opportunities & threats



Competitive Landscape & Benchmarking

- Competitive landscape and evolution
- Competitive positioning & gaps
- Perceived strengths, weaknesses, threats
- Performance benchmarking and tracking
- Prescriptive recommendations and actions
- Case studies and role models



Individual Account Data

- Name-level intelligence to inform sales tactics, segmentation, prioritization, account planning, wallet profiling, resource allocation



Fixed Income

1. Fixed-Income: Sample Market Level Insights

Market Information

- Trading volume by product
- AUM by product
- Relative importance of sales, research, secondary market execution, new issues, clearing, repo/financing, and back office in business allocation
- Current and expected use of nonbank liquidity providers
- Impact of business allocation in a product by the relationship with the dealer in other asset classes
- Influence of trading flow products on the amount of high-value business shown
- Research services clients would be most inclined to pay in cash in light of proposed regulations in Europe

Sample Product Level Detail

Investment-Grade Credit

- Demand for investment-grade credit derivatives by product
- Use of investment-grade ETFs

Interest Rate Derivatives

- Expected proportion of OTC swaps to shift to IR swaps futures or treasury/euro-denominated futures
- Change of business due to non-bank liquidity providers

Electronic Trading

- Multi-dealer platforms currently used
- Forward momentum for platforms currently used
- New trading platforms expected to be used
- Preferred platforms for pre-trade discovery
- Show voice trades due to electronic liquidity
- Demand for electronic trading
- Proportion of trading volume traded electronically
- Expected use of new platforms
- Use of platforms for pre-trade discovery
- Current and expected use of non-bank liquidity providers

Note: **Bold** text indicates new addition

Fixed-Income Trading Volume

Number of fixed-income investors – United States (1063) (998)

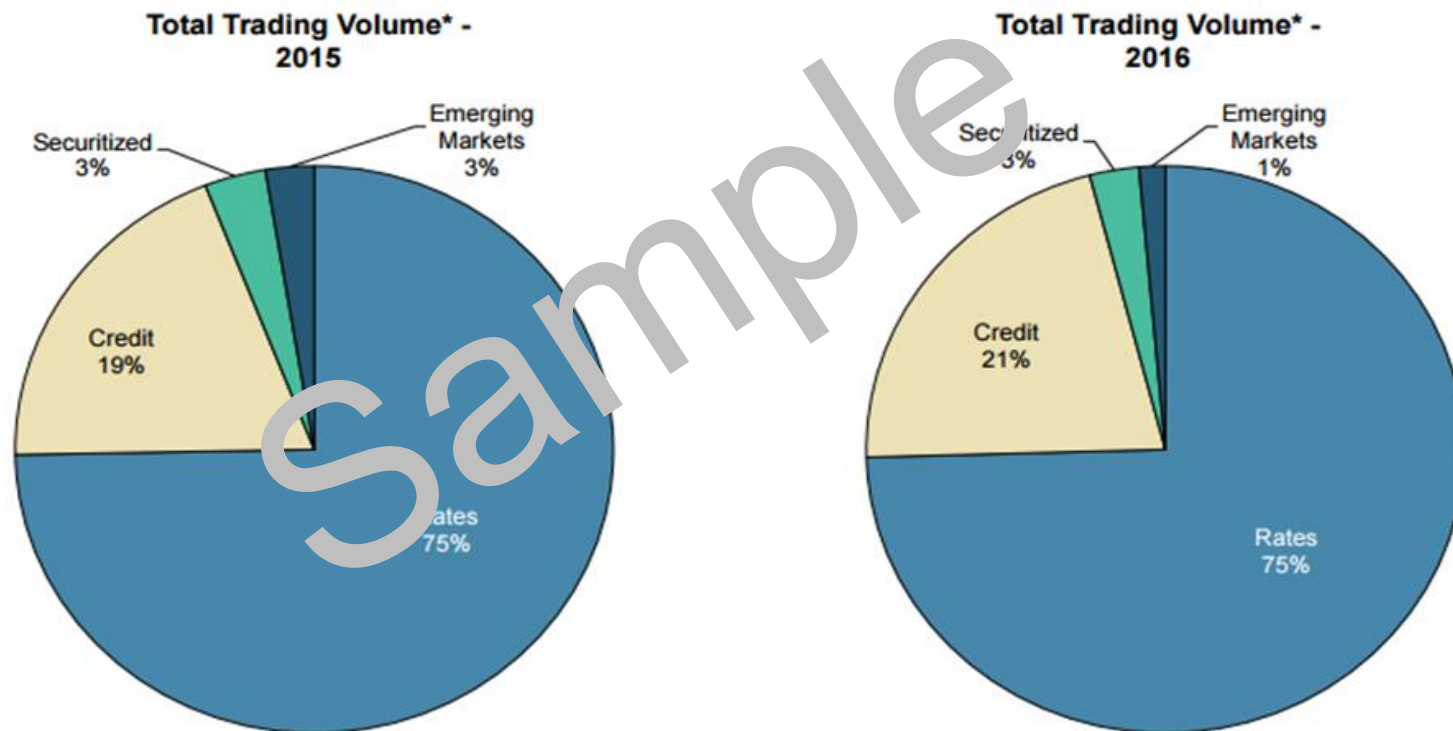
	Number of Investors		Total Bonds/ Derivatives Trading Volume*		Government Bonds		Agency Securities		Interest Rate Derivatives	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Fixed-Income Trading Volume										
Over \$50 billion	(78)	(76)								
\$10 billion - \$50 billion	(199)	(205)								
\$1 billion - \$10 billion	(470)	(425)								
Under \$1 billion	(174)	(170)								
Type of Institution										
Banks	(77)	(76)								
Funds/Advisors	(536)	(483)								
Hedge Funds	(284)	(271)								
Insurance Companies	(57)	(57)								
Government Agencies	(43)	(40)								
Other	(66)	(39)								
Total Institutions	(1063)	(998)								

Note: In billions.

* Excludes Short-Term Fixed-Income.

Rates Products: Largest Portion Of Customer Trading Volume

Fixed Income – United States



Rates: Government Bonds, Agency Securities, Interest Rate Derivatives, Mortgage-Backed Pass-Through Securities

Credit: Investment-Grade Credit, High-Yield Credit, Distressed Debt, Par Loans, Structured Credit, CLOs

Securitized: Agency CMOs/ARMs & Mortgage Derivatives, Non-Agency RMBS, Consumer ABS, CMBS & CMBX

Emerging Markets: G3 Corporates & Sovereigns, Local Currency Corporates & Sovereigns

*Excludes short-term fixed-income.

Based on responses from 998 fixed-income investors in the United States in 2016 and 1063 in 2015.

Source: 2016 North American Fixed-Income Study



Equities

2. Equities: Sample of Market Level Insights

Information

- Total U.S. equity assets under management and commissions
- Expected change in total U.S. equity commissions
- Percentage of commissions from small/mid-cap trades
- Percentage of commissions related to trades for passive/quantitative strategies
- All-in blended commission rates — current and forecasted
- Current and expected trading volume executed via sales traders, electronic single-stock trades using algorithms or sent to crossing networks, or portfolio trades
- Proportion of commissions allocated to research/advisory services, capital commitment, sales trading, and agency execution
- Proportion of high-touch business requiring capital commitment
- Degree to which commission allocation varies from the broker vote
- Use of formal best execution committees to evaluate trading performance
- Current and expected number of trading firms
- Concentration of trading business with leading ten brokers
- Use of emerging brokerage firms and number of emerging brokerage firms used
- Proportion of business done with emerging brokers and mix of trades executed directly with emerging brokers, through other broker's electronic trading systems or as "step-outs" (i.e., the emerging broker settles the trade, but does not execute)
- Typical execution practice with emerging brokers (e.g., emerging broker executes the entire block; lessen net capital requirements in approving emerging brokers, etc.)
- Number of buy-side traders at institution
- Use of commission management arrangements

Note: Availability of market trend information may differ by region.

Portion Of U.S. Equity Trading Volume

U.S. Institutions – U.S. Traders (321) (320) – full service vs. Electronic Basis

Type of Institution	Single-Stock Trades with Broker Sales Traders		Portfolio Trades		Total Electronic Single-Stock Trading**	
	Respondents		Expected in Three Years		Expected in Three Years	
	2015	2016				
Long Only	(224)	(228)				
Investment Managers	(176)	(171)				
Mutual Funds	(23)	(30)				
Pensions & Endowments	(11)	(11)				
Banks	(7)	(8)	43.6%	53.8%	40.0%	15.6%
Hedge Funds	(68)	(71)	16.3%	29.3%	41.4%	30.0%
Assets Under Management						
Over \$20 Billion	(72)	(66)				
\$10-20 Billion	(30)	(34)				
\$3-10 Billion	(66)	(65)	54.6%	58.1%	51.9%	5.2%
Under \$3 Billion	(57)	(74)	6.9%	7.0%	40.2%	35.0%
U.S. Tiering						
Tier 1	(11)	(12)				
Tier 2	(13)	(11)				
Tier 3	(15)	(19)				
Tier 4	(7)	(31)				
Tier 5	(6)					
Tier 6	(67)		56.7%	56.5%	51.3%	8.4%
Tier 7	(101)	(106)	7.9%	8.7%	34.9%	35.6%
Greenwich Associates Priorities*						
U.S. Priorities (Tier 1-4 Institutions)	(70)		52.4%	45.5%	42.9%	8.7%
Total Institutions	(292)	(299)	10.3%	10.0%	38.9%	44.2%
			55.8%	53.9%	48.7%	8.1%
			8.6%	8.8%	36.1%	37.5%
						42.5%

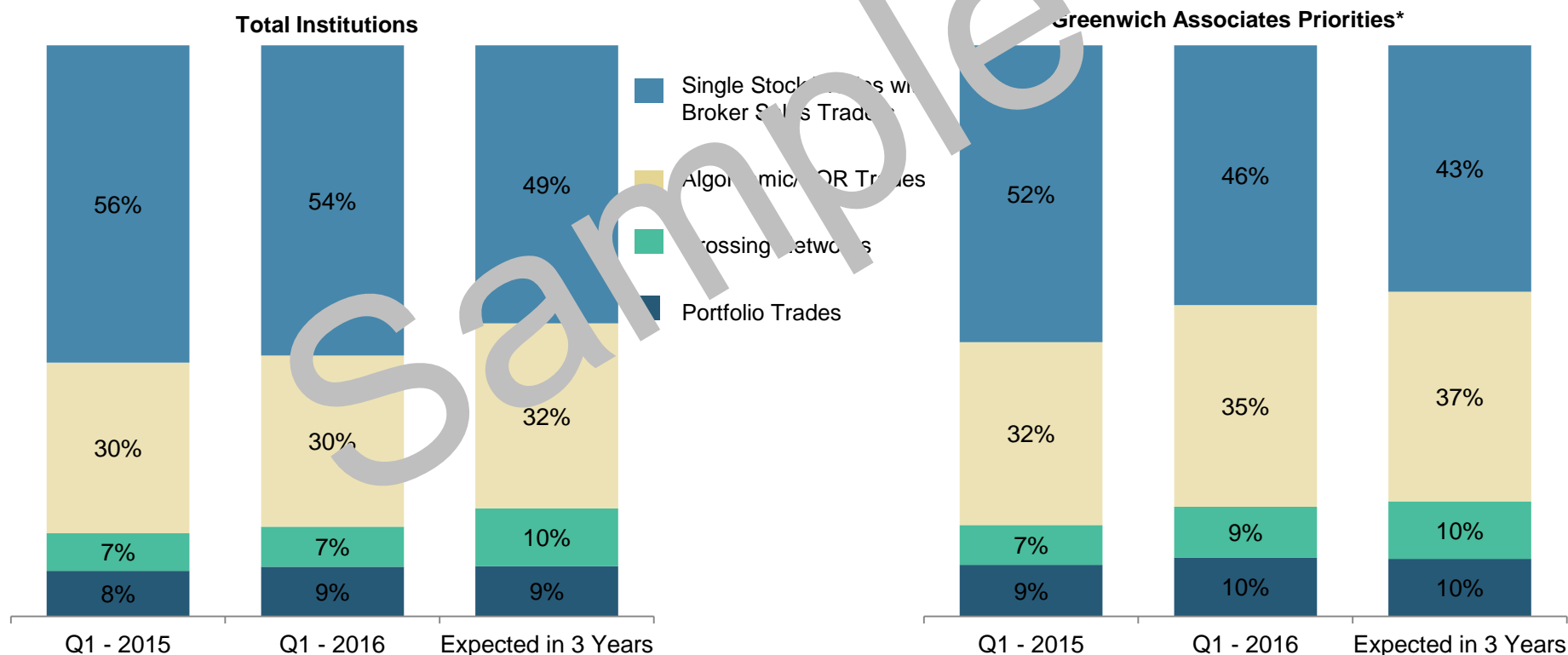
Note: *Greenwich Associates Priorities are defined as institutions in Tiers 1-4 of seven. Tiers are determined by institutional commission volume, with Tier 1 containing the largest and Tier 7 the smallest commission payers. Long (includes Investment Managers, Mutual Funds, Banks, Insurance Companies, & Pensions).

**Includes algorithmic trading (including dark pool sourcing algos), direct to market trades, and trades sent to crossing networks.

High-Touch vs. Electronic Mix

U.S. Equity Trading Dollar Volume

- For the 12 months ended Q1 2016, a stable 37% of U.S. equity trading dollar volume was executed via electronic trades by buy-side Long Onlys and Hedge Funds (excluding any HFT, broker-dealer or retail flows). The mix was again comprised of 30% algorithmic/smart-order routing trading and 7% via crossing networks.
- Notably, larger commission Greenwich Priority accounts (about 25% by number, but generated almost 70% of total commission pool) remain more active users of electronic trading and increased such flows from 39% to 44% of volume, split 35% via algorithmic/smart-order routing and 9% via crossing networks.



Source: Greenwich Associates 2016 U.S. Equity Investors. *Greenwich Associates Priorities are defined as institutions in Tiers 1-4 of seven. Tiers are determined by institutional commission volume, with Tier 1 containing the largest and Tier 7 the smallest commission payers.



Foreign Exchange

3. FX: Sample of Market Level Insights

Market Information

- Trading volume in G-10 spot; G-10 forwards (including NDFs); G-10 FX swaps (short dated vs. longer dated of over 1 week); currency options
- Trading volume in EM currencies spot; EM forwards including NDFs; EM swaps; EM options
- Proportion of emerging markets trading volume traded onshore
- Revenue wallet estimation, by account

Market Information (cont'd)

- Current and planned use of exchange-traded FX futures and options
- Demand for prime brokerage
- Key drivers of FX volume, by account
- Relative importance of sales, relationship management, research, pricing, online offering, breadth of product offerings, back office/ operations
- Use of trading cost analysis

E-Trading

- Expected use of algo tools
- Preferred algo or direct market access (DMA) execution tools
- Type of algo tools used
- Most important criteria when selecting an algo provider
- Proportion of volume done online in FX swaps, G10 spot/outright forwards including non-deliverable forwards, currency options
- Proportion of trading volume done by channel

Trading Volume By Transaction

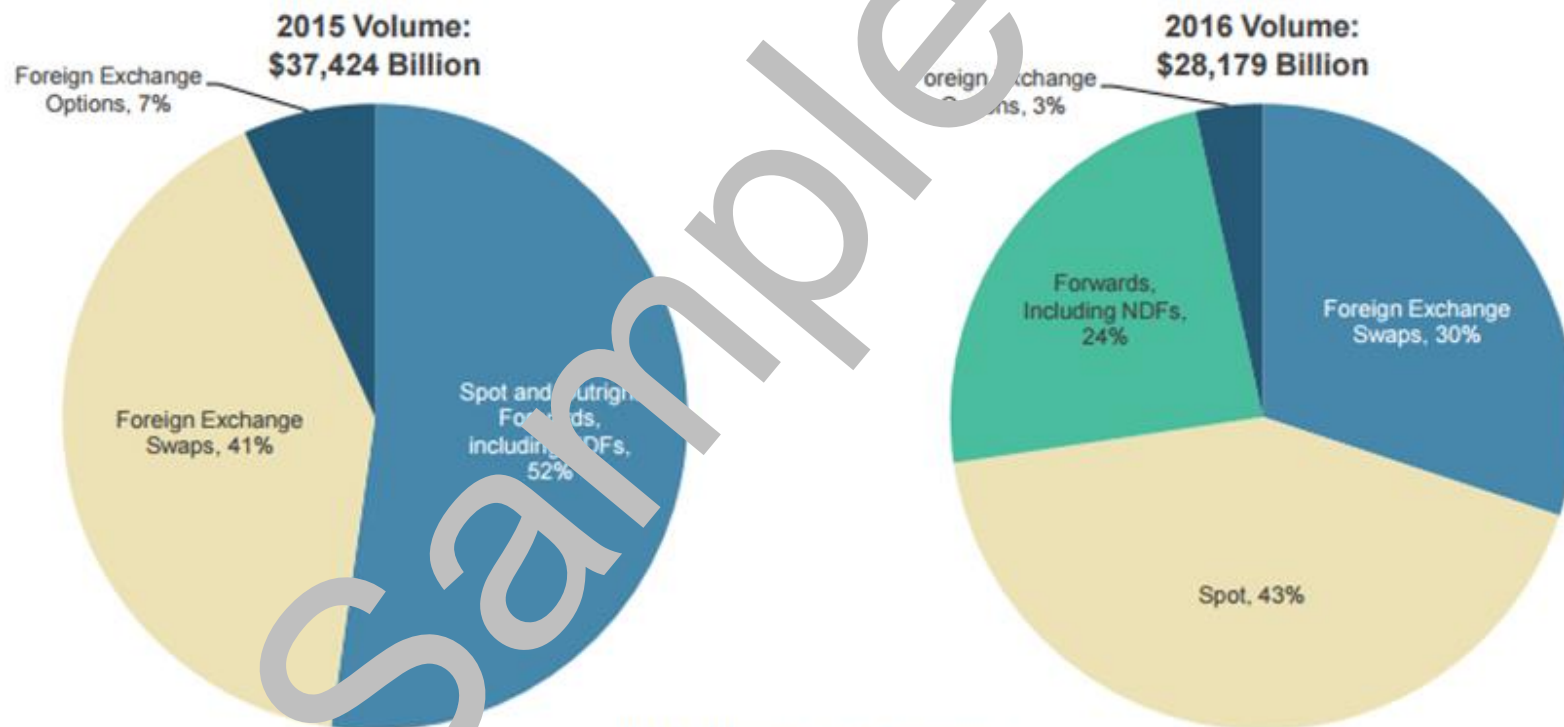
Number of Foreign Exchange Users – United States (451) (418)

	Number of Foreign Exchange Users		Total Foreign Exchange Volume		Spot	Forward including IDFs	Foreign Exchange Swaps		Foreign Exchange Options	
	2015	2016	2015	2016	2016	2016	2015	2016	2015	2016
Foreign Exchange Trading Volume										
Over \$50 Billion	(89)	(86)								
\$10-50 Billion	(75)	(66)								
\$1-10 Billion	(172)	(146)								
Under \$1 Billion	(97)	(98)	--	--		--	--	--	--	--
Type of Institution										
Corporates (incl TC & FC)	(246)	(223)								
Financials	(204)	(194)								
Banks	(32)	(29)								
Fund Managers/Pension Funds	(72)	(76)								
Hedge Funds/CTAs	(70)	(67)								
Insurance Companies	(8)	(5)								
Other Financials	(22)	(17)								
Retail Aggregators	(2)	(1)								
Government Agencies	(1)	(1)								
Geographic Area										
United States	(451)	(418)								
Canada	*	*								
Latin America	*	*								
Total Institutions	(451)	(418)								

Note: In billions.

Trading Volume By Transaction

Foreign Exchange Users – United States – Top Tier



2016 Volumes by Currency

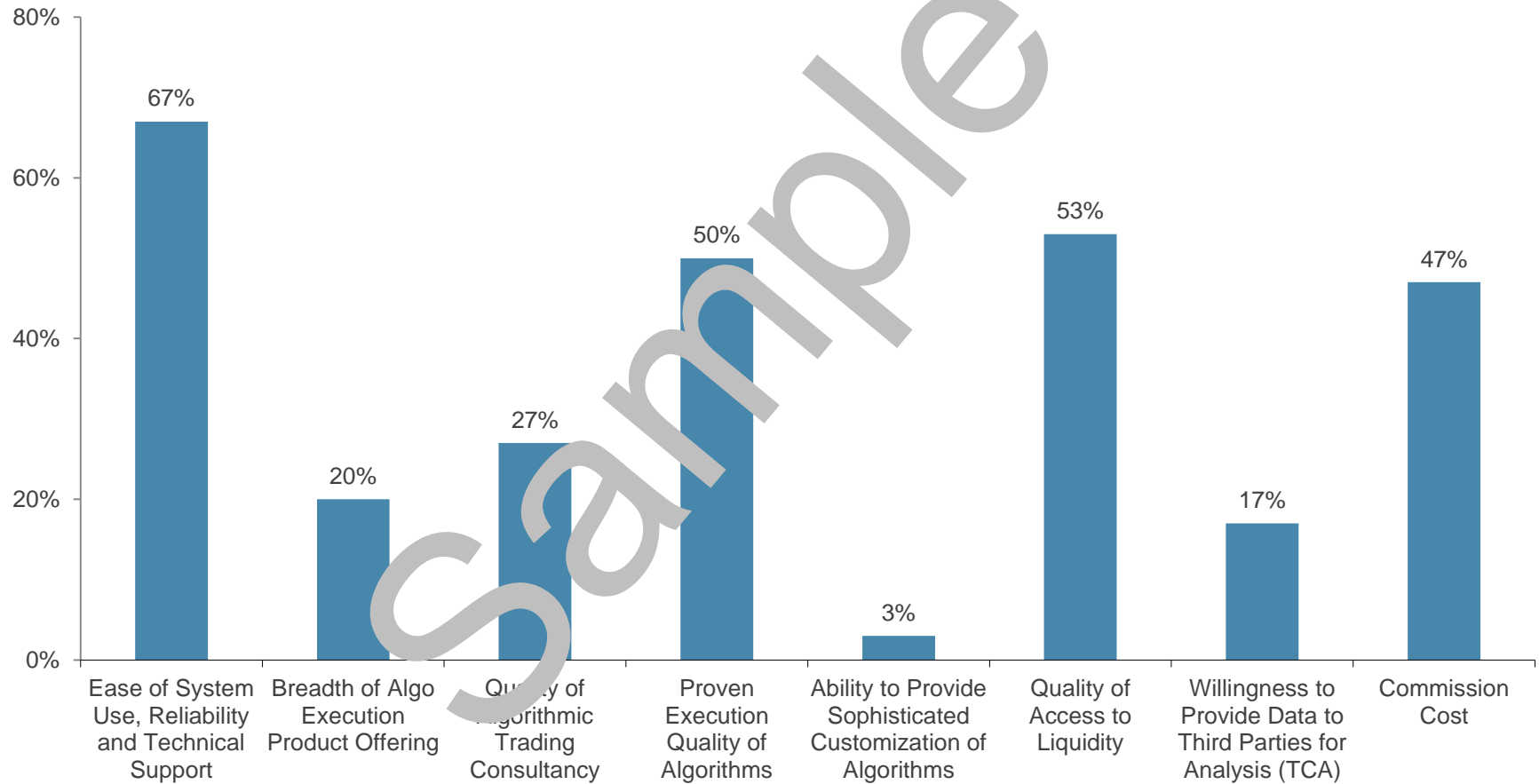
	Trading Volume (\$mm)	% of Total		Trading Volume (\$mm)	% of Total		Trading Volume (\$mm)	% of Total
Spot	\$11,993		Swaps	\$8,481		Options	\$980	
G-10	\$9,513	82%	G-10	\$7,071	87%	G-10	\$723	81%
EM	\$2,055	18%	EM	\$1,050	13%	EM	\$175	19%

Based on responses from 317 United States – Top Tier users of foreign exchange in 2016 and 322 in 2015.
Source: 2016 Global Treasury Services Facility

Algorithmic Selection Criteria

Foreign Exchange Users – United States – Top Tier

2016



Based on responses from 30 United States – Top Tier users of foreign exchange in 2016.
Source: 2016 Global Treasury Services Facility

Contact Information



Nick Lieder

Director, Business Development

+1 203.625.5007

nick.lieder@greenwich.com

greenwich.com