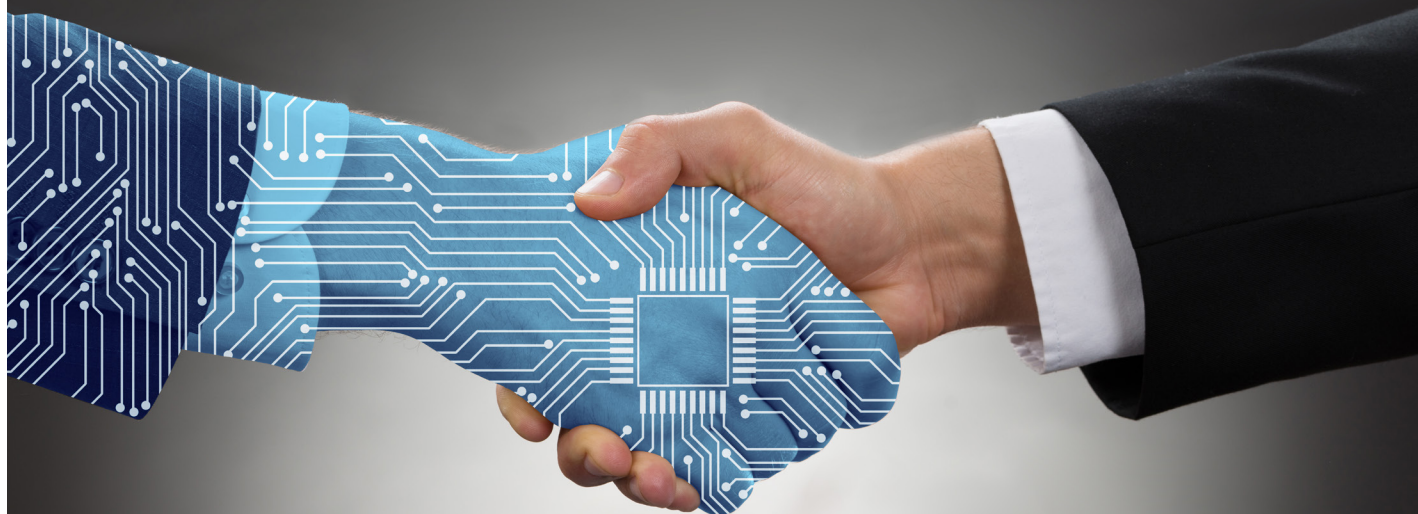


Q4 2018

Trust and Data Drive Fixed-Income Dealer Growth



CONTENTS

- 2 Executive Summary
- 3 Introduction
- 3 Green Shoots
- 4 In Brokers We Trust
- 7 Plans for Growth
- 7 Technology Priorities
- 8 Data Management
- 11 What's Next



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BANKS HAVE SHIFTED THEIR TECHNOLOGY FOCUS TOWARD LEVERAGING DATA AND ANALYTICS TO INCREASE MARKET SHARE

1 IN 5
BANKS NOW POINT TO THE PROVISION OF TECHNOLOGY TO THEIR CLIENTS AS A DIFFERENTIATOR

Executive Summary

Fixed-income trading profits have been on a tough road over the past decade, with low volume, low volatility, low rates, and a high cost of capital eating into what was once a cash cow. But as several of those factors are showing signs of reversing, broker-dealers focused on U.S. corporate and municipal bond markets are simultaneously taking a particular interest in putting the influx of newly available data to work.

Relationships and balance sheet still matter, of course, but the ability to manage both in a more quantitatively driven way can mean the difference between profit growth and a year-on-year decline. This idea has driven both large and middle-market dealers to focus their technology efforts on data, analytics and workflow automation, while looking to increase the data management literacy of everyone on the desk.

Based on feedback from nearly 50 U.S. fixed-income broker-dealers, this research examines the current state of the fixed-income business, top concerns of both large and middle-market dealers, technology priorities, and the most likely path forward.

METHODOLOGY

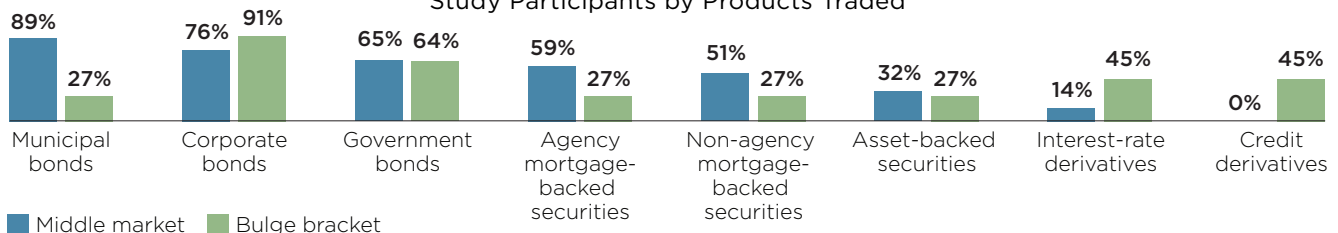
In the summer of 2018, Greenwich Associates interviewed 48 fixed-income traders and sales professionals at broker-dealers in the U.S. in an effort to understand the changes facing the fixed-income market and the impact of technology on their business. Participants included both global and regionally focused banks, with individuals comprising a mix of traditional voice sales and those focused on e-commerce initiatives.

Desk's Client Mix as Percentage of Revenue



Note: Based on 37 respondents for middle market and 11 for bulge bracket. Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

Study Participants by Products Traded



Note: Based on 37 respondents for middle market and 11 for bulge bracket. Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

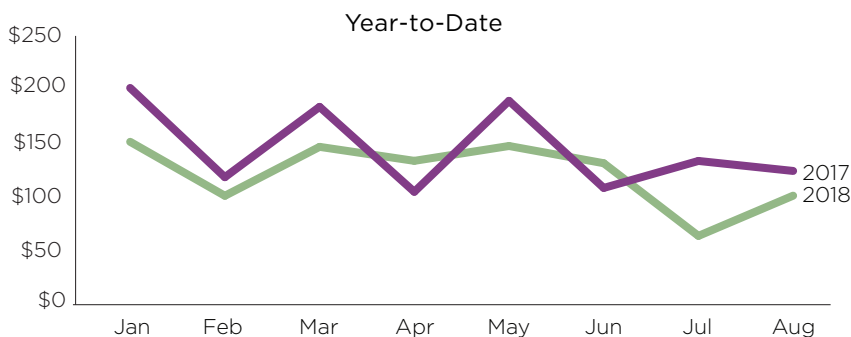
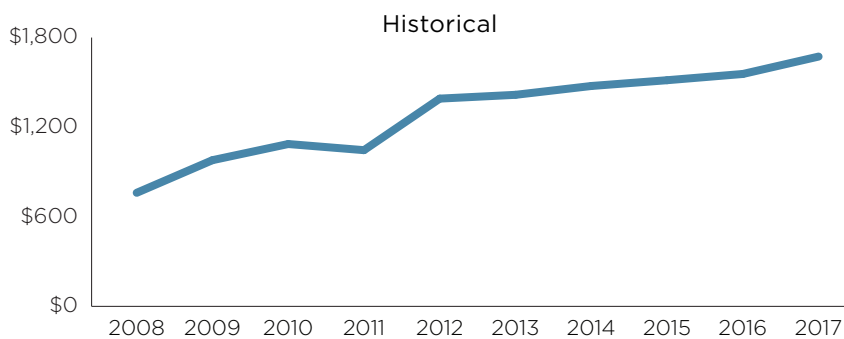
Introduction

Generating revenue growth in U.S. credit markets continues to be a tall order for both global and middle-market dealers. More than half of the nearly 50 fixed-income dealers participating in this study saw revenues decline in their corporate bond and municipal (muni) bond businesses over the past year. Trading asset-backed securities (ABS) and agency debt with clients yielded equally disappointing results.

The macroeconomic environment isn't helping. While rates in the U.S. are finally rising, they still sit at historically low levels, with changes from the U.S. Federal Reserve so well communicated that markets remain calm and feel prepared for the road ahead. And while rising rates have played a part in reducing 2018 year-to-date new issuance by 16%, total secondary market volumes are up only 1.7% compared to 2017.

U.S. CORPORATE BOND ISSUANCE

(USD billions)



Source: Thomson Reuters 2018

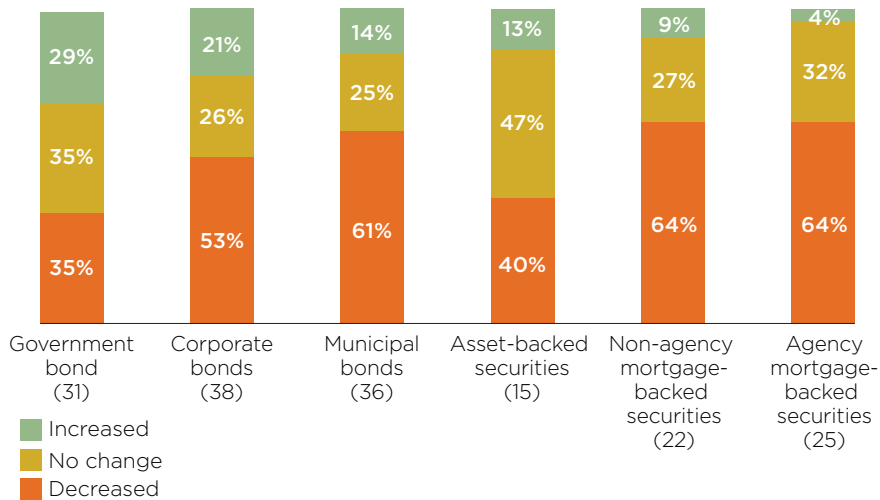
A more quantitative approach to relationship management and increased levels of electronic trading are beginning to show how and where growth will occur.

Green Shoots

Against this somewhat gloomy backdrop, however, bright spots do exist in the bond broker-dealer business. Reworked business models that include a more quantitative approach to relationship management and increased levels of electronic trading are beginning to show how and where growth will occur. And with dealers and investors alike finally

finding a new normal 10 years after the bankruptcy of Lehman Brothers, the market is positioned to begin its move forward rather than dwelling on the past.

PAST YEAR REVENUE CHANGES BY PRODUCT



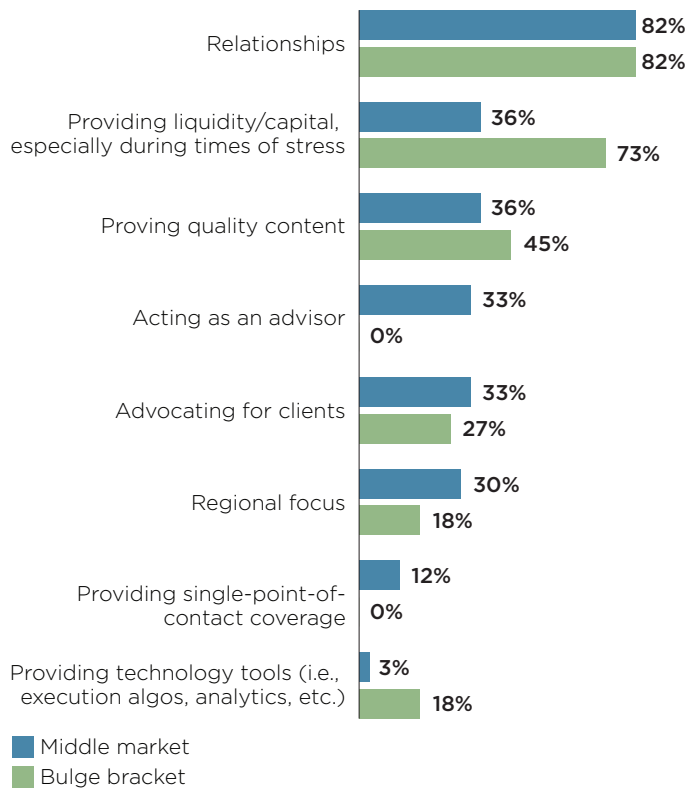
Note: Numbers in parentheses indicate number of respondents.
 Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

On a relative basis, middle-market dealers experienced greater revenue growth in corporates and munis over the past year than their bulge-bracket peers. Their high-touch approach to relationship management and local knowledge, which is particularly valuable in the muni market, was the major driver. Conversely, trading in U.S. government bonds was driven by global dealers that have a heavy technology focus. With half of investor volume and over 90% of dealer-to-dealer volume trading electronically today, the ability to execute quickly on a variety of e-trading platforms is increasingly critical in the U.S. Treasury market.

In Brokers We Trust

Even so, relationships continue to matter a great deal when trading all fixed-income asset classes. Since 2014, Greenwich Associates research has consistently shown that dealers differentiate themselves first and foremost via their client relationships. And despite the impressive growth of e-trading over the past four years, that has not changed. With just under 5% of corporate-bond volume executed anonymously, 95% of trading is still done directly between two counterparties—even when executed on an electronic platform. So whether it's the voice on the phone or the source of an RFQ response, trusting your counterparty still matters.

HOW SALES DESKS DIFFERENTIATE



Note: Based on 36 respondents for middle market and 11 for bulge bracket.
 Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

Whether it's the voice on the phone or the source of an RFQ response, trusting your counterparty still matters.

CHANGES IN PROVISION OF LIQUIDITY OVER PAST 2 YEARS



Note: Based on 38 respondents for corporate and 36 for municipal bond markets.
 Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

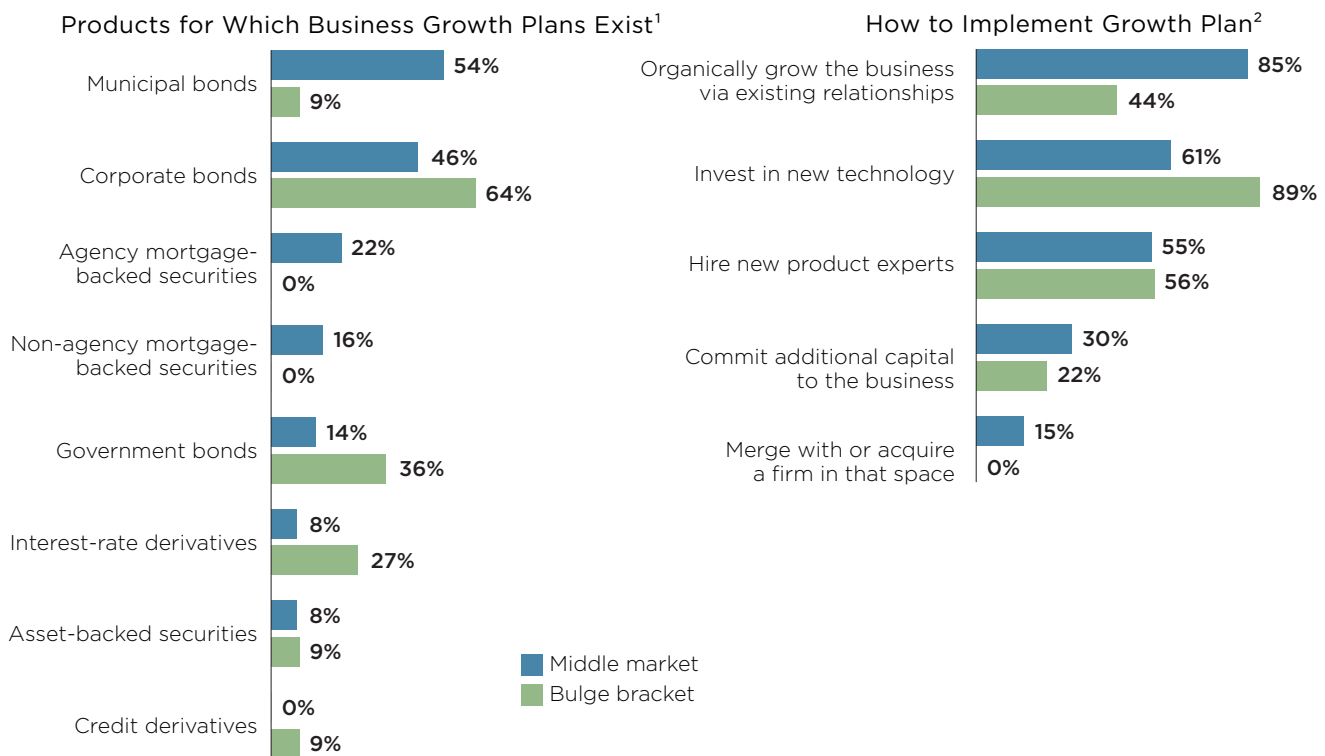
While some dealers have begun to indicate an increase in capital dedicated to the business, only the best clients and trades continue to get access to principal liquidity.

Once you have a client’s trust, however, you’d better be able to deliver. Our research over the past decade has also consistently shown that 50% of corporate-bond-investor volume is allocated to dealers based on execution quality received in the secondary market. This is increasingly achieved with riskless principal trading—finding the other side of some or all of the trade, rather than taking on the risk themselves.

While some dealers have begun to indicate an increase in capital dedicated to the business, only the best clients and trades continue to get access to principal liquidity. This balance sheet advantage is still a differentiator for the biggest banks—a dynamic unlikely to change in the foreseeable future.

Thankfully, trading desks are no longer shrinking, with the average broker-dealer’s bond desk comprising 10 salespeople for corporate bonds and 14 for munis. These salespeople service 30 clients each on average, with salespeople at the global banks covering a lower number of larger clients, and the middle-market dealers handling more. These revenue challenges indicate that it is imperative for each of these sales resources to generate even more revenue from every client. This is where technology enters the picture.

PRODUCT GROWTH AND IMPLEMENTATION PLANS



Note: ¹Based on 37 respondents for middle market and 11 for bulge bracket. ²Based on 33 respondents for middle market and 9 for bulge bracket. Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

Plans for Growth

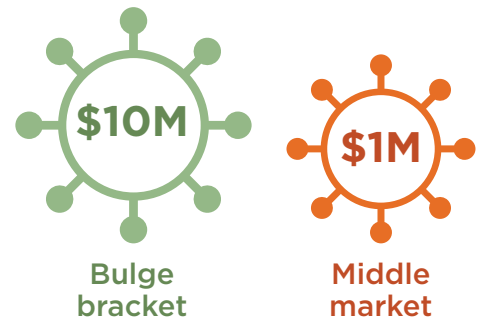
The majority of dealers in our study already have a plan in place to grow their corporate bond business. Middle-market dealers are also focused on increasing revenue from munis, while the global banks are emphasizing interest-rate products (government bonds and interest-rate derivatives). When asked how they plan to grow their businesses going forward, investing in technology is the top approach for bulge-bracket banks, and second only to organic growth among middle-market dealers.

Further, while the ways in which fixed-income sales and trading desks work to distinguish themselves hasn't changed much over the years, the impact of technology as a differentiator has increased dramatically. For the first time since Greenwich Associates began asking dealers how they stand out, nearly 20% of the global banks point to the provision of technology tools to clients as a differentiator. This would include pre- and post-trade analytics, execution algorithms (where appropriate) and other trading tools.

And banks are putting their money where their mouth is. Some bulge-bracket dealers reported a current fiscal year technology budget of \$10 million to continue building out their corporate-bond trading desk, whereas middle-market dealers on average upped their spending from roughly \$900,000 annually to over \$1 million—still a notable increase from past years.

BANKS ARE PUTTING THEIR MONEY WHERE THEIR MOUTH IS

Average annual tech budget for corporate bond trading desks



Technology Priorities

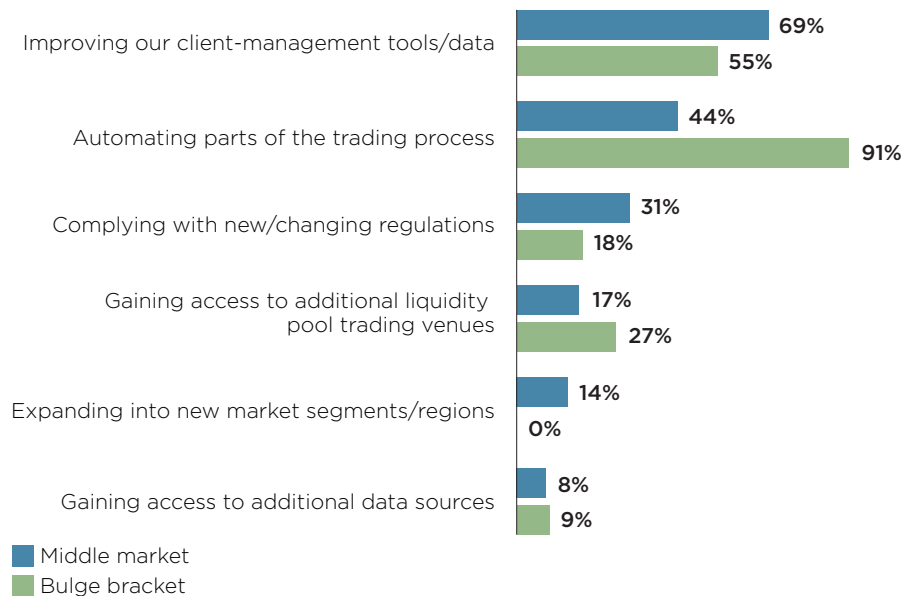
That said, it is important to remember that the business models of global and middle-market dealers can be quite different, and accordingly, so are their technology needs and priorities. Market structure changes over the past decade have driven many of the largest banks to become “flow monsters” that are particularly adept at processing high numbers of orders quickly, efficiently and at a very low cost. While the profitability of each individual order is small, the quantity of orders is so large that the business has continued to generate sizeable revenues.

On the flip side, this has driven the middle-market dealers to step in and help clients and market segments that have consequently become underserved, allowing them to use their relationships to grow and cement their place in the bond ecosystem.

The 2018 technology priorities of these two groups largely reflect these different roles in the market place. For instance, nearly 70% of middle-market dealers are primarily focused on improving their client management tools and data (more on this shortly). They are working to

arm their sales and trading teams with smarter intelligence about each client based on trade history, portfolio makeup, individual preferences, and more.

TOP TECHNOLOGY PRIORITIES FOR 2018



Note: Based on 36 respondents for middle market and 11 for bulge bracket.
 Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

The global banks, on the other hand, have prioritized further automating the trading process to allow them to handle even more clients and greater volume, without having to increase human resources. Automating in this context runs the gamut from auto-responding to quote requests, to distributing post-trade analytics to customers directly.

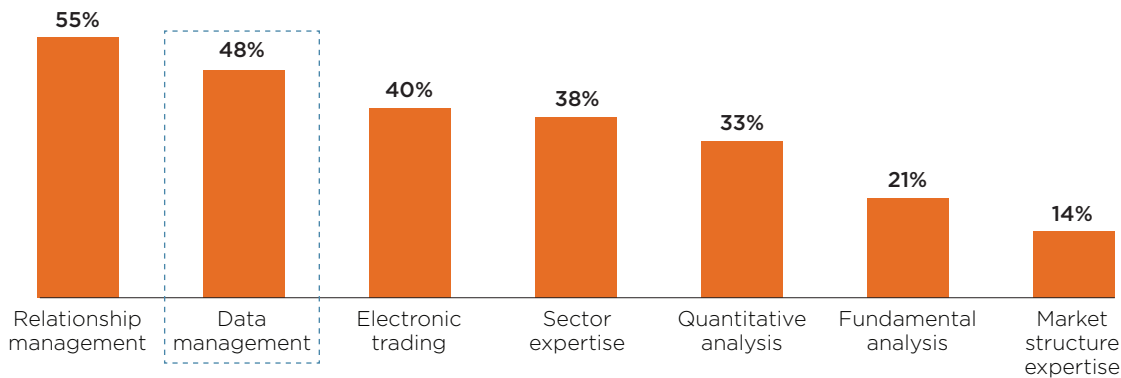
So while gaining access to new liquidity venues and regulatory compliance still garners attention and budget dollars, the focus in 2018 and 2019 has shifted toward leveraging the data that both trade automation and quantitative client management have helped to generate.

Data management is now one of the top skills sought by desk heads looking to hire new sales and trading personnel.

Data Management

Leveraging data to grow revenue via improved execution quality and client management requires more than just new software and databases, however. Data management is now one of the top skills sought by desk heads looking to hire new sales and trading personnel, besting e-trading expertise and easily toppling the fundamental analysis skills once the hallmark of any good bond trader.

TOP SKILLS SOUGHT BY TRADING DESKS



Note: Based on 42 respondents.

Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

Data management means different things to different people. The data management expertise needed on the desk is quite different than that required of a portfolio manager or software developer. Whereas the latter two need to understand the nuances of data structures and databases, fixed-income salespeople and traders now need to be comfortable detecting what a data set might help them learn, and the ways in which those insights can be extracted and put to use. This takes the ability required to manipulate Excel spreadsheets to the next level.

DEFINING DATA MANAGEMENT

Data management is the practice of organizing and maintaining data to meet the ongoing needs of its users. In the context of the fixed-income market, this can include:

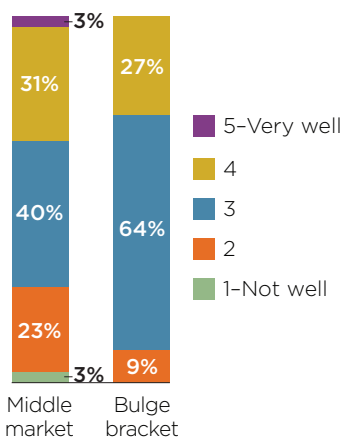
- Ensuring data from separate sources can be used together. For instance, if the same bond is defined by a different identifier, a single identifier must be chosen and applied to all data about that bond regardless of the data's source.
- Aggregating data from various sources in such a way that it can be searched and/or analyzed as a single data set. While this can mean putting all the data into a single database, it can also mean creating a unifying interface that allows users to work with the data as if it came from a single source.
- Ensuring data is gathered, stored and accessed securely. This could also include ensuring data is only utilized by those authorized to see that data based on customer and/or other privacy rules.

While data management is not new to the fixed-income market, its role in the front office is still emerging. Turning what was traditional reference data and market data into actionable intelligence for the sales and trading desk is the ultimate goal.

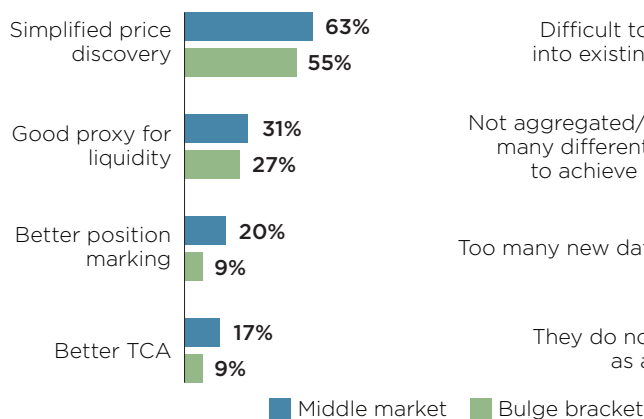
Regardless of how data management is defined, very few feel as if they are doing a good job of managing and exploiting the onslaught of new fixed-income data. In fact, only one middle-market dealer in our study (and zero bulge-bracket dealers) felt they were doing a “very good” job handling new data sources, and less than one-third believe they were doing better than average. While somewhat disheartening, this should come as little to surprise to market veterans. Fixed-income data was somewhat of an oxymoron until just a few years ago, with the majority of pricing and liquidity information residing in the heads the largest market participants.

NEW FIXED-INCOME DATA SOURCES

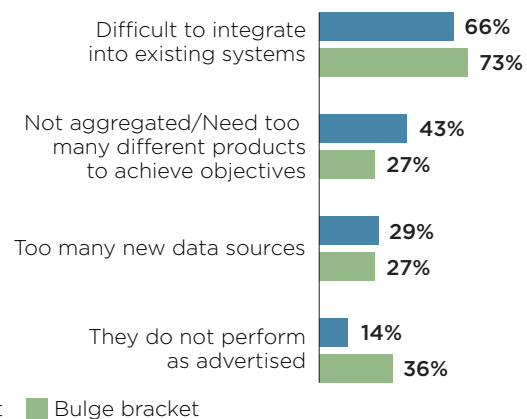
How Well Firm is Handling New Fixed-Income Data



Best Aspects of New Data Sources



Worst Aspects of New Data Sources



Note: Based on 35 respondents for middle market and 11 for bulge bracket.
Source: Greenwich Associates 2018 U.S. Fixed-Income Sales Trading Study

Of course, anything so new and potentially impactful will raise some eyebrows. Dealer concerns regarding new data sources are largely consistent. Difficulty integrating new data into current platforms is the biggest complaint for global and middle-market dealers. This speaks to the idea that data isn’t valuable unless you can truly put it to work—and that can only be achieved by integrating that data into your existing workflow.

For instance, if new evaluated pricing data is only available through a standalone application, yet trading decisions are made based on data in the order management system, the value of that new pricing data is severely limited. More complex examples might include the injection of such data into auto-quoters that require data inputs to meet current firm standards.

What's Next

By and large, the influx of data choices should be seen as a good thing, demonstrating the level of innovation in the market. However, aggregating new pieces of information to create a complete picture and/or deciding which sources of data are worth the cost are major stumbling blocks for many. Five years ago, trading desks were overwhelmed with the number of new trading platforms vying for their attention; now that same challenge has come at the hands of data providers.

But for most, the good outweighs the bad, with the influx of information simplifying the price-discovery process and providing a proxy for liquidity in the market that goes well beyond publically available data from TRACE. An argument can be made that a sales trader's ability to service each of their clients at the level required to keep them satisfied would be impossible today without the support that data and its derived intelligence provides.

As the Federal Reserve continues to raise rates, new issuance volume is likely to decline, secondary market volume to rise, volatility to increase, and dealer revenues to grow. And after a decade of reshaping a business that has existed almost as long as the U.S. economy itself, those combining the best of human relationships, technology and sophisticated data analysis will lead the way.

The influx of information is simplifying the price-discovery process and providing a proxy for liquidity.

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