



# Best Execution in Fixed Income:

## A Work in Progress

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Comprehensive regulatory mandates in the US and Europe are driving a paradigm shift in the traditional dynamic between pricing and best execution in over-the-counter fixed income markets. Increased pre- and post-trade transparency requirements and a proliferation of execution protocols and venues are beginning to outpace the ability of participants in the global bond market. More firms are eager to see new third-party tools that can augment their ability to independently benchmark execution performance as the fiduciary responsibilities of buy-side firms require a reevaluation of traditional market data analysis and price discovery. As the complexity of the market grows, and compliance surveillance burdens compound, fixed income transaction cost analysis tools will be essential for buy-side participants to validate investment decisions throughout the lifecycle of a trade.

Data firms such as ICE Data Services (formerly Interactive Data Corporation), Markit, and Bloomberg are building new TCA capabilities once thought unattainable for the opaque global OTC fixed income market. There are, however, roadblocks to wholesale acceptance of these solutions. The extent to which these third-party tools are able to integrate into existing buy-side workflows – and the methodology upon which the TCA benchmarking tools are built – are the key hurdles to wider adoption.

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## Introduction

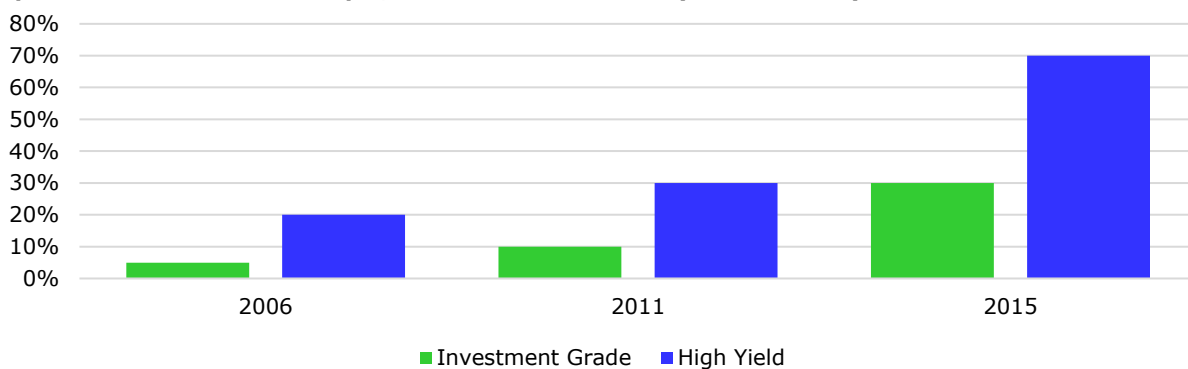
*"Mathematics is the music of reason." – James Joseph Sylvester*

The legislatively-driven shift in fixed income in the wake of the 2008 financial crisis requires a reevaluation of long-standing execution standards. The proliferation of real-time trade data and regulatory initiatives driving the fixed income marketplace to new levels of transparency is the starting point in a race to a new definition of best execution. However, for credit market participants, many roadblocks remain. Pricing is central to the problem.

TABB Group research on credit trading indicates that banks are battling the rising cost of running their bond businesses by increasingly favoring a riskless-principal or order-driven trading model. Exhibit 1 shows the spike in the percentage of riskless-principal trading among the largest US dealers since 2006. As of the end of 2015, 70% of high yield trades over \$2 million among dealers were made up of transactions not executed on the wire or within a relatively short time period following the investor's inquiry, up from 20% in 2006. Similarly, riskless-principal trading for investment grade trade sizes over \$2 million reached 30% last year, up from roughly 5% in 2006.

### Exhibit 1:

#### Corporate Bond Riskless-Principal, Order-Driven Business (Trades > \$2M)



Source: TABB Group

This trend presents a challenge to the traditional approach to best execution. As the value of dealer quote data depreciates, the responsibility to determine the best price for a bond will increasingly shift to pre-trade and real-time price modeling. Compounding this issue is the fact that bond trading is concentrated in a very small subset of highly-liquid issues. This means that the vast majority of issues (unique CUSIPs) do not even trade on a daily basis, creating a major challenge to best execution and pricing analytics.

The buy side, in particular, needs to batten down the hatches. Dealer quotes are no longer reliable as the determining factor for where debt issues will trade. Instead, quotes are now indications of where securities should or may trade. What will be the new standard? It will likely be a combination of robust internal expertise, the leveraging of a combination of new and existing tools from firms such as ICE Data Services with its Continuous Evaluated Pricing (CEP) product, Markit's liquidity and pricing metrics, and Bloomberg's post-trade Bloomberg Transaction Cost Analysis (BTCA). 2016 is shaping up to be a formative year in the global fixed income data renaissance.

## The Driving Force

The global bond market is due for a revolution in the interaction between pricing and best execution as regulatory mandates and the development of trading protocols evolve beyond the ability of fixed income market participants to independently benchmark execution performance. Other asset classes (either by association or legislation) are leading the way and fiduciary responsibilities of the buy side require a more sophisticated approach to data and pricing. The fact that regulators on both sides of the Atlantic have already given guidance and updated rules means that this revolution is well under way.

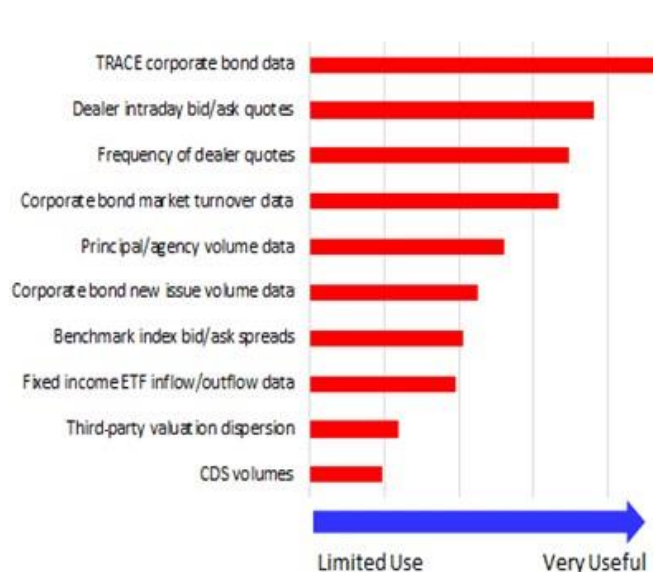
In the US, investors have historically relied on dealer quotes (through request-for-quotes, or "RFQ"s) to assess price discovery and satisfy internal compliance. A survey of 93 buy-side traders by TABB Group in late 2015 found that the overwhelming majority still rely on the Financial Industry Regulatory Authority's Trade Reporting and Compliance Engine (TRACE) as an additional post-fact data source for assessing and benchmarking execution. TRACE data was second only to internal "investment team expertise" as a means of assessing liquidity risk. This culture of complacency will have to change as regulators update and enhance the required standard, and internal processes are changed in line with the mode of trading.

**Exhibit 2:**  
**TABB Group Buy-side Survey Results (2015)**

### How do you measure liquidity risk?



### How useful are the following liquidity metrics?

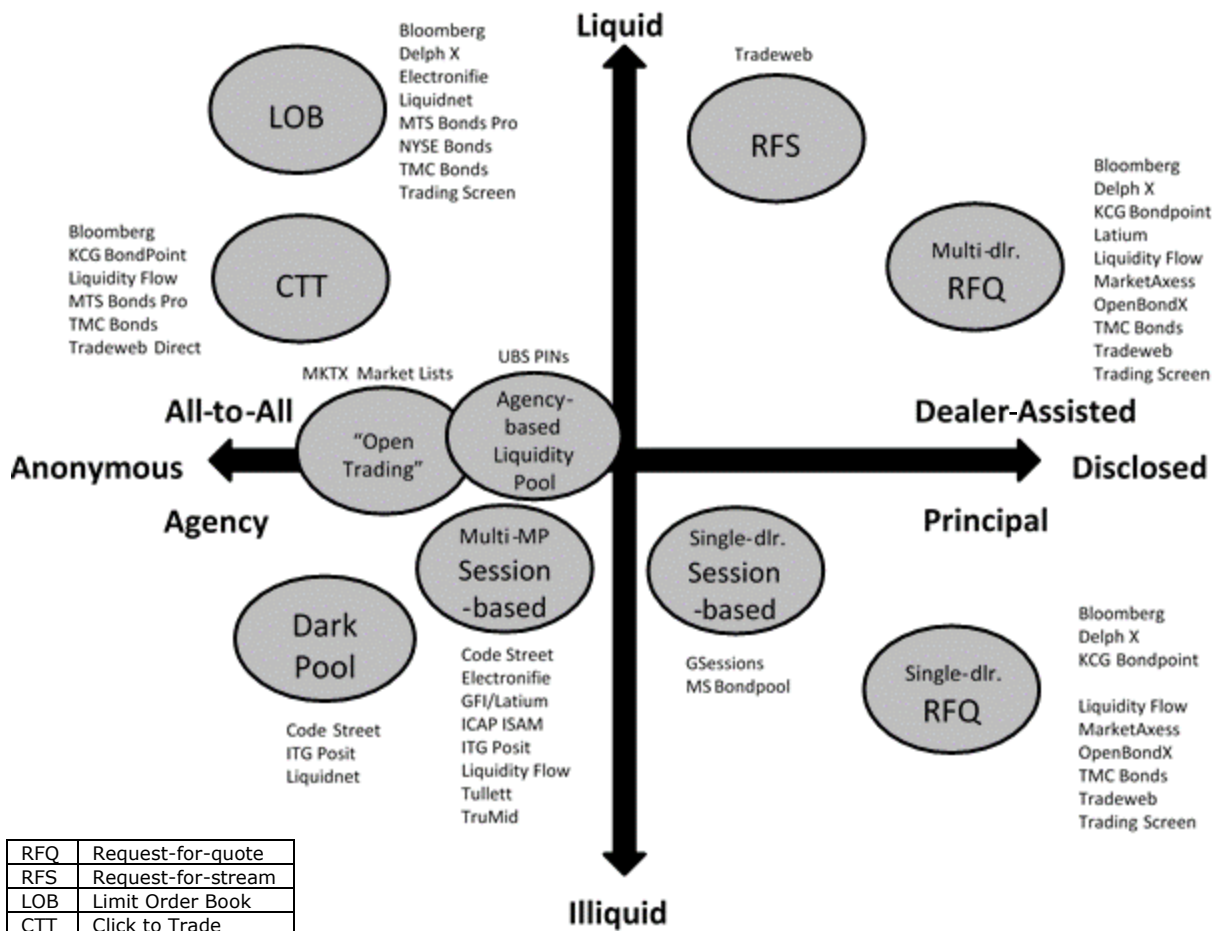


Source: TABB Group

Before the differences in various regulatory definitions – and whether they can be used as a working baseline for firms today – can be explained, the issue needs to be defined. The latest guidance from FINRA on bond market best execution (published in December 2015) is a case in point. As we have long argued, fundamental changes in cash fixed income market dynamics require consequent changes in compliance workflow – as what is needed clashes with what is possible. Nowhere is this more apparent than in the corporate bond world where the

proliferation of venues and means of execution has translated into a shift in the way best execution standards are met. (Exhibit 3).

**Exhibit 3:**  
**Corporate Bond Electronic Trading Venues**



Source: TABB Group

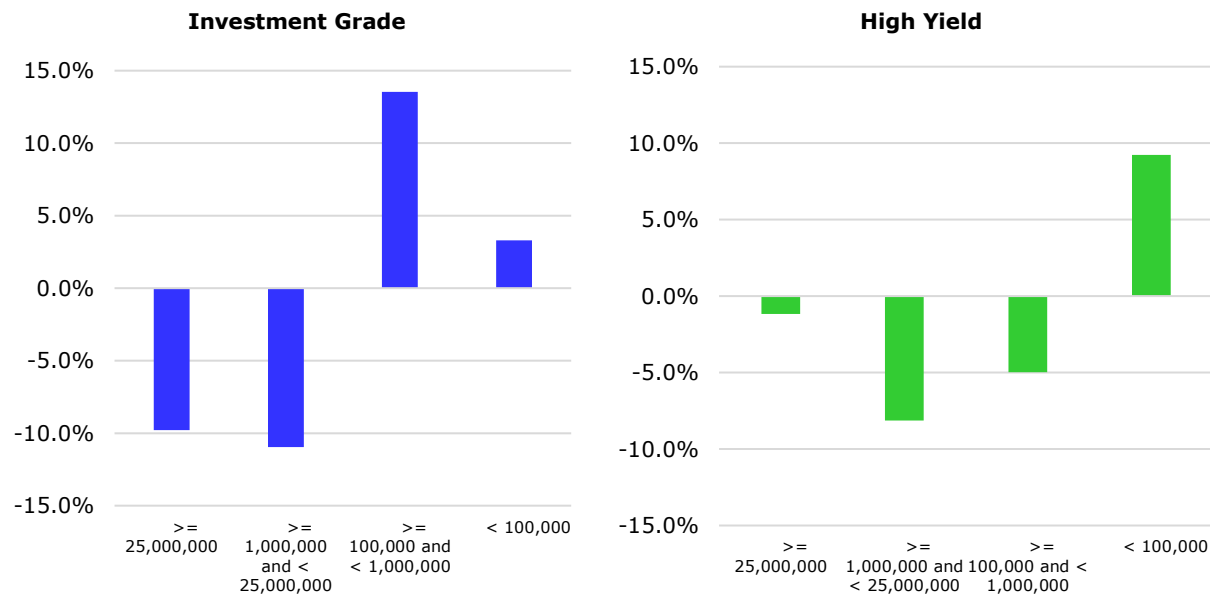
Regulators have officially recognized this shift. The Securities and Exchange Commission has said that an RFQ-style best bid or offer on a venue may not be sufficient to meet best execution obligations when trades are being done electronically or internalized by a firm for electronic routing (especially for small orders).

However, regulators also recognize that some element of a "facts and circumstances" analysis (recognized in FINRA Rule 5310) that takes into account the size of the transaction, available liquidity pools by security type and accessibility is necessary. Together, these factors can help assess whether reasonable diligence has been taken in executing an order on behalf of a client. But there is also an obligation for a regular and rigorous review of processes over and above this one to ensure that client interests are being taken into account.

## Electric Shocks/Evolution of Pricing

Despite the gradual emergence of this more complicated and higher best execution standard, asset managers that hold the majority of the inventory are increasingly interested in using more varied trading protocols on electronic venues and dark pools. For example, Liquidnet's fixed income dark pool (which electronically matches bids and offers over \$500 million in both investment grade and high yield markets) achieved daily liquidity of over \$7 billion in March. This type of liquidity is still a small portion of the overall buy-side inquiry flow, but even at this size, traders must independently verify and assess the performance of their execution choices. In fact, it is incumbent on them to do so beyond the regulatory minimum – even as trade sizes decrease and electronic trading (whether by traditional or new means) proliferate (Exhibit 4).

**Exhibit 4:**  
**TRACE Trade Size Percent Change 2008 – 2015, High Yield & Investment Grade Corporate Bonds**



Source: TABB Group, TRACE



## What's in a Name? Defining the Undefinable

Unlike the US equity markets (through SEC Rules 605 and 606 of Reg NMS) the fixed income world lacks specific best-execution requirements designed for electronic trading, but a general standard has developed out of the stipulation to exert “best efforts” to satisfy the fiduciary obligation to obtain best execution for the buy side. There is little or no specific and quantifiable requirement to publish and share information on a pre- and post-trade basis to enable further analysis. The European model, uniquely, will specifically apply this to the bond trading world.

Under Article 27 of MiFID II, investment firms are required to take all “sufficient steps” to achieve best execution, including the publication of the quality of execution achieved, as well as the creation of internal monitoring processes to verify the effectiveness of executions. These must be published in sufficient detail for clients to understand. The change from the original MiFID framework is that it applies to all derivatives and bonds (as opposed to only equities) and the wording has been updated from “all reasonable steps.”

To see what this deceptively simple change in wording means for market participants, look no further than the updated MiFID II Regulatory Technical Standards (RTS), including the different standards of price information by trading system (Exhibit 5, next page)<sup>1</sup>, published in September 2015 by the European Securities and Markets Authority. The rules state that the regulation applies to “investment firms in relation to client orders executed on trading venues, systematic internalizers, market makers or other liquidity providers,” including third-country entities that perform a similar function. The formal requirement is that when executing orders, the best possible result is achieved by taking into account price, cost, speed, the likelihood of execution, size and settlement.

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<sup>1</sup> [https://www.esma.europa.eu/sites/default/files/library/2015/11/2015-esma-1464\\_annex\\_i\\_-\\_draft\\_rts\\_and\\_its\\_on\\_mifid\\_ii\\_and\\_mifir.pdf](https://www.esma.europa.eu/sites/default/files/library/2015/11/2015-esma-1464_annex_i_-_draft_rts_and_its_on_mifid_ii_and_mifir.pdf)

**Exhibit 5:****Information to be made public in accordance with Article 2 ESMA**

Type of system	Description of system	Information to be made public
<b>Continuous auction order book trading system</b>	A system that by means of an order book and a trading algorithm operated without human intervention matches sell orders with buy orders on the basis of the best available price on a continuous basis.	For each financial instrument, the aggregate number of orders and the volume they represent at each price level, for at least the five best bid and offer price levels.
<b>Quote-driven trading system</b>	A system in which transactions are concluded on the basis of firm quotes that are continuously made available to participants, which requires market makers to maintain quotes in a size that balances the needs of members and participants to deal in a commercial size, and the risk to which the market maker exposes itself.	For each financial instrument, the best bid and offer by price of each market maker in that instrument, together with the volumes attached to those prices. The quotes made public shall be those that represent binding commitments to buy and sell the financial instruments and that indicate the price and volume of financial instruments in which the registered market makers are prepared to buy or sell. In exceptional market conditions, however, indicative or one-way prices may be allowed for a limited time.
<b>Periodic auction trading system</b>	A system that matches orders on the basis of a periodic auction and a trading algorithm operated without human intervention.	For each financial instrument, the price at which the auction trading system would best satisfy its trading algorithm and the volume that would potentially be executable at that price by participants in that system.
<b>Request-for-quote trading system</b>	A trading system in which a quote or quotes are provided in response to a request for a quote submitted by one or more other members or participants. The quote is executable exclusively by the requesting member or market participant. The requesting member or participant may conclude a transaction by accepting the quote or quotes provided to it on request.	The quotes and the attached volumes from any member or participant which, if accepted, would lead to a transaction under the system's rules. All submitted quotes in response to a request for quote may be published at the same time but not later than when they become executable.
<b>Voice trading system</b>	A trading system in which transactions between members are arranged through voice negotiation.	The bids and offers and the attached volumes from any member or participant which, if accepted, would lead to a transaction under the system's rules.
<b>Trading system not covered by first 5 rows</b>	A hybrid system falling into two or more of the first five categories or a system in which the price determination process is of a different nature than that applicable to the types of system covered by first five categories.	Adequate information as to the level of orders or quotes and of trading interest; in particular, the five best bid and offer price levels and/or two-way quotes of each market maker in the instrument, if the characteristics of the price discovery mechanism so permit.

Source: TABB Group, ESMA

So, while the framework is very similar to the US, the reality of the European top-down approach means that, in addition to annual best execution reports that rank brokers, the requirement for price treatment in the bond world depends on dynamic liquidity thresholds that leave a significant threat of "false positives" on specific instruments. The initial threshold amounts are detailed in Exhibit 6, although they are currently up for debate. Still, even a cursory analysis shows that large areas of the bond world could be categorized as liquid and therefore within the scope of the rules set out in Exhibit 5.

On May 2, ESMA published two opinions about the draft regulatory standards. With respect to draft RTS 2, the opinions call for a gradual phase-in approach to assessing bond liquidity and thresholds detailed in Exhibit 6 over a four-year period. The opinions propose a declining schedule of 15, 10, 7 and the (original) 2 daily trades over year one through four, respectively, for the liquidity assessment of bond. The opinions also propose that the initial liquidity determination for newly issued corporate bonds be amended. Under the newly- proposed framework, the initial liquidity status determination of corporate bonds and covered bonds

will be based on issuance size of EUR 1 billion until Dec. 31 2019 and after that, the applicable issuance size will be cut in half to the originally proposed EUR 500 billion.

In the derivatives world, an additional burden of fairness in the pricing of instruments exists, but again, there is a huge difference in the treatment of data by venue type. Multilateral trading facilities (MTFs) were originally created for the equity markets as specialised venues for matching client orders. For structured products and credit and interest rate swaps, it was deemed necessary to create a new venue designation that allows discretionary – rather than non-discretionary – trading protocols and behavior among participants. For example, in contracts traded via voice or interdealer brokers, it can be necessary to retract, partially fill or suggest alternative bids or offers to clients to help match them.

These activities are not allowed under MTF rules, which are based on traditional crossing networks (platforms). While regulated markets can operate MTFs, licensed financial institutions cannot operate an Organized Trading Facility (OTF) within the same legal entity under which it operates proprietary activity. The latter (defined as executing trades on a financial institution's own balance sheet) requires registration as a systematic internalizer. In all cases, different information standards require some form of data aggregation and analysis.

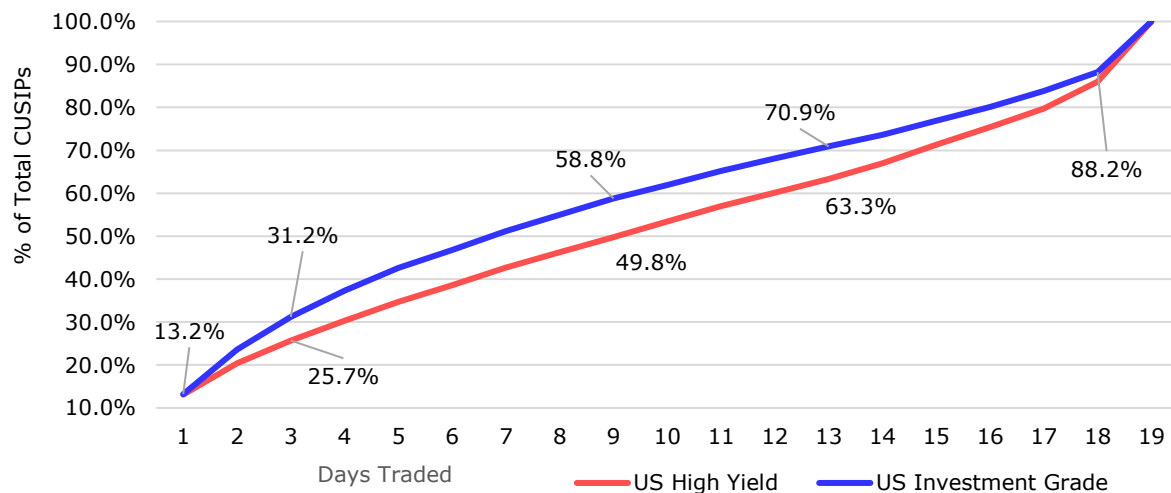
In the bond world, since most traders send out runs anyway, the amount of pre-trade data available is substantial. Nonetheless, the required messaging fields, real-time price analysis, or after-the-fact review of available necessary trading decisions are just not possible in the traditional workflow. The information may not be uniform and the parameters may vary hugely by firm. While this shortfall has led some third-party providers, such as the FIX Trading Community, to seek to define a standardized and fungible architecture for trade reporting and compliance certainty, the majority of issues come up at the pricing and execution level.



## Third-Party Best-Ex

Various companies have been building out best-execution solutions for market participants over the past several years. Unlike equity markets, where participants can rely on order-driven data, the majority of bonds trade far too infrequently to create an equity-like execution benchmark. The murky waters of bond pricing are central to the credit market's best-ex conundrum. Exhibit 6 shows the infrequent nature of credit trading. In a sample of the 15,444 bonds that traded across both high yield and investment grade markets during January 2016, only roughly 13% traded once and roughly 20% traded two to three times. Using the same sample, just over 12% of bonds traded every day during the 19-day period.

**Exhibit 6:**  
**US IG & HY 'Days Traded' (January 2016)**



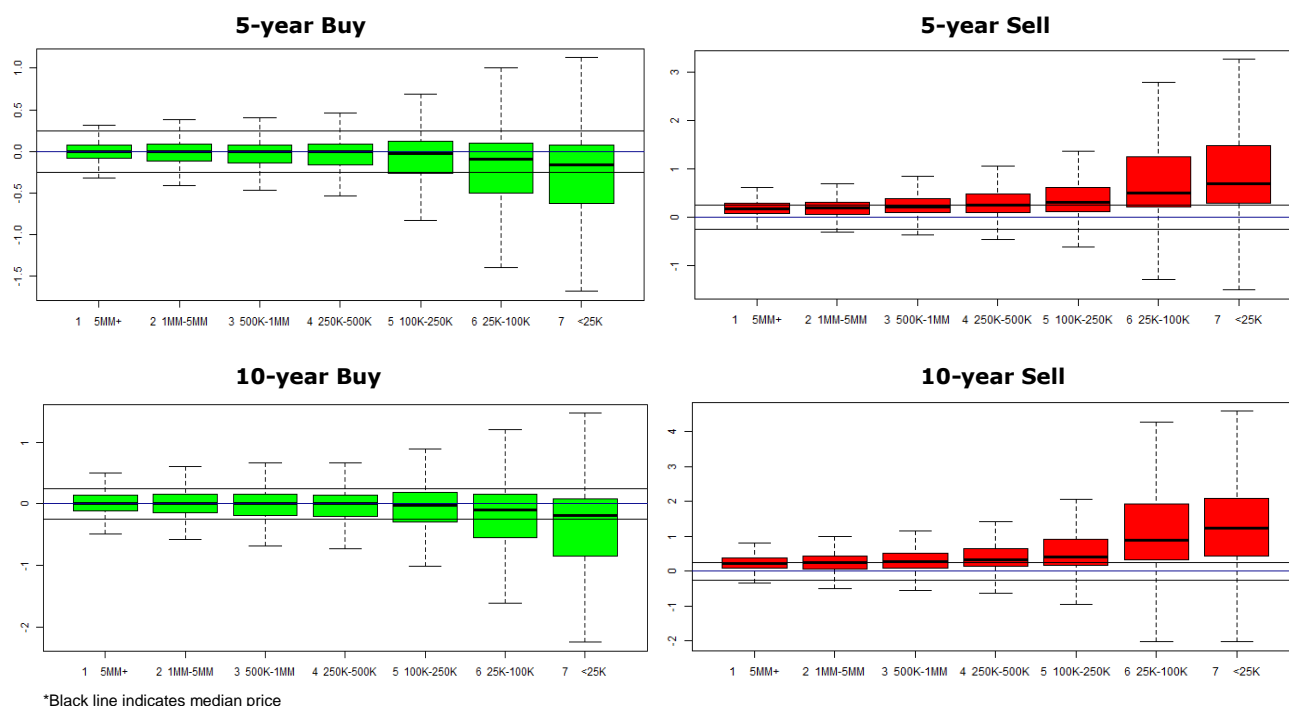
Source: TABB Group, ICE Data Services

The challenge for solution providers is to make clients comfortable with the approach they are taking in establishing a benchmark baseline for bond pricing. This challenge will be compounded when solutions need to be applicable across the board for different securities, depending on the client's trading profile.

Companies such as ICE Data Services, Markit, and Bloomberg provide innovative approaches to fixed income TCA analytics. ICE Data Services' Continuous Evaluated Pricing (CEP) solution has been a uniquely innovative tool in transforming murky and sporadic credit trade data into a workable benchmarking dataset.

Exhibit 7 demonstrates the extent to which the ICE Data Services CEP tracks historical prices. The theory is straightforward: A narrow 'spread' between the average theoretical (CEP) price and historical trades indicates reliability. Using the US IG 5- and 10-year bond as examples, Exhibit 8 tests that and breaks down the average price difference between the CEP model price and actual TRACE trades. The shaded areas represent 50% of the distribution plotted in different trade size buckets, with the thick black lines representing the median value of the difference.

**Exhibit 7:**  
**Dealer Trade Distributions ICE Data Services Calculation, US IG 5- and 10-year**

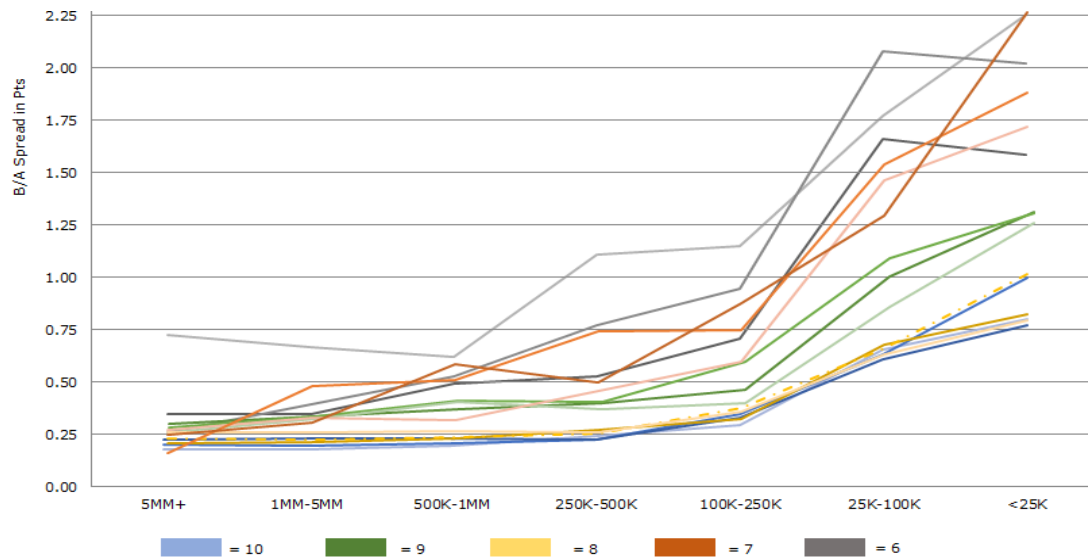


Source: TABB Group, ICE Data Services

Across trade sizes, from blocks to micro-lot trades, the median price difference is more pronounced for the smallest buckets. There is a duality to this trend. While the quality of CEP benchmark data could theoretically be at the root of the trend, the culprit is the inherent price uncertainty for thinly traded securities trading at the small end of the trade size spectrum.

Exhibit 8 (next page) dives deeper into this trend and plots the difference between dealer buy and dealer sell median prices by trade size for securities with liquidity scores ranging from 10 (most liquid) to 6 (least liquid). Each line per color palette represents a month for each liquidity score series (January, February and March of 2016). For the most liquid securities (blue, green and yellow) there is a consistently small markup of about 3/16<sup>th</sup> of a point to a quarter point that gradually rises in spread as trade size buckets decrease. This trend demonstrates that there is a month-to-month behavioral consistency to the pricing model benchmark and is a testament to the robustness of the model since the reliability holds when looking down the liquidity spectrum of securities.

**Exhibit 8:**  
**Market Implied Bid-Ask Spread Distribution for US IG 10-yr by Trade Size and ICE Data Services Liquidity Score (Jan., Feb., March 2016)**



Source: TABB Group, ICE Data Services

Exhibit 9 illustrates the extent to which the CEP pricing model can accurately track the price against both a liquid and thinly traded bond. The Exhibit below is based on trades for two Verizon Communications Inc. bonds on May 18 this year. The red dots represent dealer sell trades, the green dots represent dealer buys, the yellow dots are interdealer trades, and the blue line is the continuous evaluated price

**Exhibit 9:**  
**ICE Data Services Continuous Evaluated Price Liquid vs. Thinly Traded Bond**



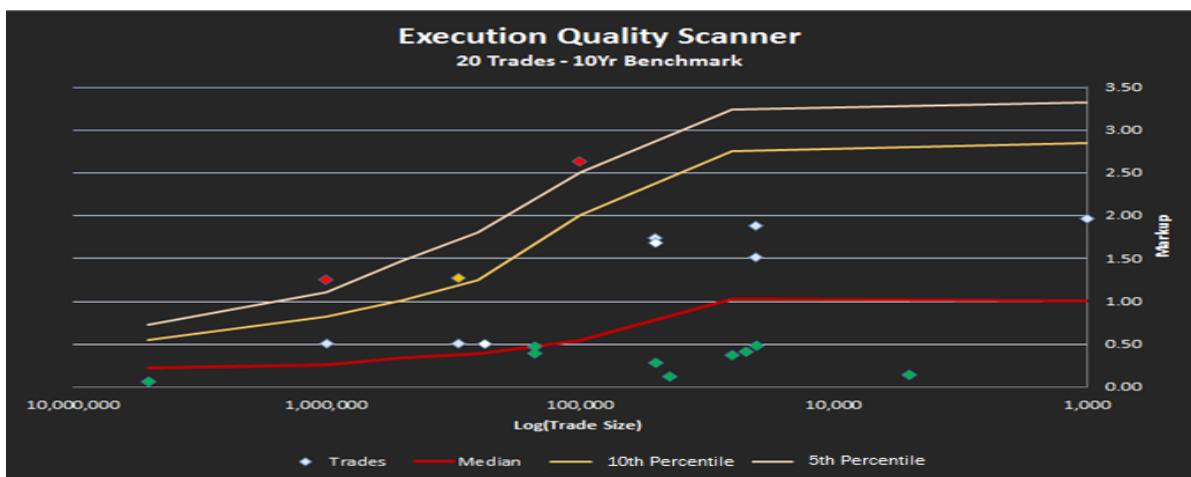
Source: ICE Data Services, TABB Group

Putting these pieces together, the CEP model allows ICE Data Services to produce highly contextualized best execution reports tailored to an investor's profile. Analysis can be broken down based on specific trades with certain counterparties, on certain venues, and with specific trading protocols. Performance can then be mapped out in relation to the marketplace. Exhibit 10 is a sample execution quality report based on the data in Exhibit 7. The red line represents the median price difference from the dealer price distributions, and the yellow and grey lines

are tenth and fifth percentile thresholds, respectively. All of them can be built out of the CEP modeling baseline.

This kind of analysis affords users the ability to put into place a variety of best execution standards and safeguards such as being able to check whether any counterparties are charging excessive markups or whether certain venues or protocols have had negative impact on performance vs. the broader marketplace, set certain threshold execution standards, or justify the price of a certain trade if a regulator or customer requests a deeper evaluation. This type of analysis is beneficial for the buy side because it allows managers to evaluate performance based on dealer counterparty.

**Exhibit 10:**  
**Execution Quality Sample Scanner, ICE Data Services**



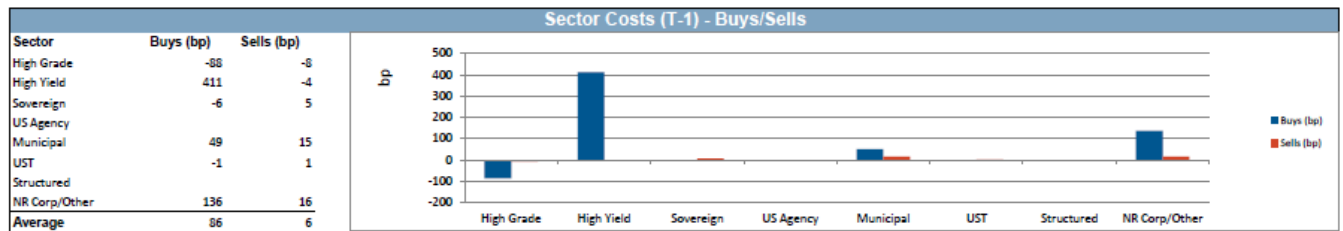
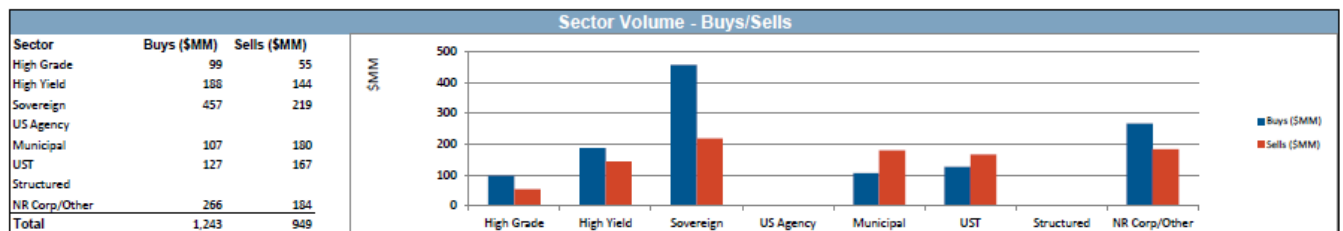
Source: TABB Group, ICE Data Services

Markit's fixed income TCA product has been running since early 2015, and similar to ICE Data Services, leverages the firm's existing pricing service franchise as the core. The Markit fixed income pricing service prices roughly 2.5 million US and European securities either hourly or daily. The system utilizes quantitative algorithms developed by our team of analysts that are designed with statistically valid inputs from a wide array of data sources for the security being evaluated, its benchmark securities and other correlated instruments. Markit parses dealer quote data from over 300 counterparties in real time throughout the trading day and also consumes trade data from TRACE, the Municipal Securities Rulemaking Board (MSRB), iBoxx, iTraxx, and Euroclear. New sources of data are constantly under evaluation. The resulting evaluative pricing feed includes bid offer spreads, spreads to benchmark securities and over 250 other data fields.

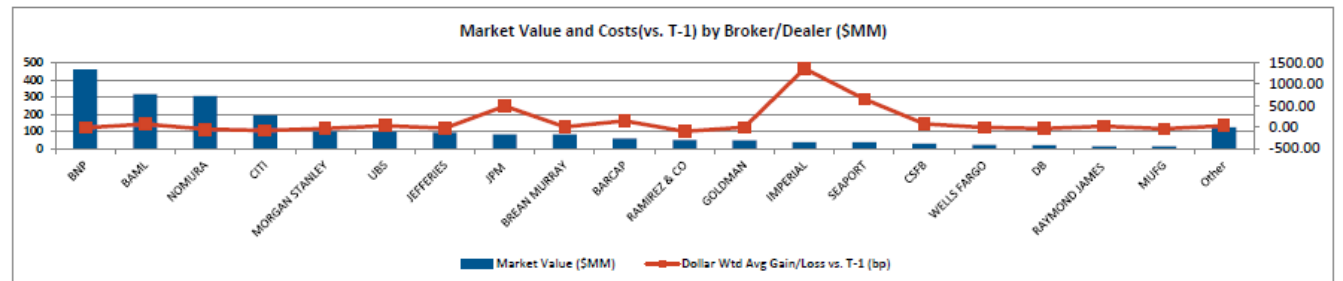
Markit's current fixed income TCA offering is still an end-of-day system that provides perspective on cost using near- and far-touch variance as well as time-weighted benchmarks. Markit TCA's reports can also break down aggregate trades in terms of 'liquidity scores,' which, like the ICE Data Services liquidity score and Bloomberg BVAL 'confidence index,' is a price reliability indicator that follows a scale of 1 (most reliable/utilizes a range of data in the price) to 5 (no underlying data).

**Exhibit 11:**  
**Markit FI TCA Sample Report**
**markit**
**ABC ALL: Aggregate**
**First Quarter 2016**

Sector	Sector Summary										
	Activity			Sell-Bid/Buy-Ask		Cost vs. TWAP		Characteristics			
	Trades	Market Value (\$MM)	%	Dollar Wtd Avg Gain/Loss vs. T-1 (bp)	Total Gain/Loss vs. T-1 (\$)	Dollar Wtd Avg Gain/Loss vs. TWAP (bp)	Total Gain/Loss vs. TWAP(\$)	Liquidity Score	Avg Maturity (years)	T-1 Price (%Par)	TWAP (%Par)
High Grade	79	154	7.0	-59.17	-909,548	-26.21	-402,898	1.3	12.5	77.35	77.52
High Yield	199	332	15.1	231.28	7,669,579	177.08	5,872,240	1.5	6.8	69.12	68.71
Sovereign	48	676	30.8	-2.39	-161,650	-9.25	-625,143	1.4	8.2	114.12	114.13
US Agency			0.0								
Municipal	149	287	13.1	27.59	790,798	17.77	509,222	3.1	27.8	93.29	93.30
UST	18	294	13.4	0.27	7,791	-3.33	-97,762	1.0	15.0	100.00	99.96
Structured			0.0								
NR Corp/Other	179	451	20.6	86.66	3,906,346	75.41	3,399,286	1.5	9.6	88.90	89.10
Total	672	2,193	100.0	51.55	11,303,315	39.47	8,654,943	1.8	13.2	84.76	84.71



Broker/Dealer	Broker/Dealer Summary										
	Activity			Sell-Bid/Buy-Ask		Cost vs. TWAP		Characteristics			
	Trades	Market Value (\$MM)	%	Dollar Wtd Avg Gain/Loss vs. T-1 (bp)	Total Gain/Loss vs. T-1 (\$)	Dollar Wtd Avg Gain/Loss vs. TWAP (bp)	Total Gain/Loss vs. TWAP(\$)	Liquidity Score	Avg Maturity (years)	T-1 Price (%Par)	TWAP (%Par)
BNP	37	460	21.0	-11.71	-538,809	-3.53	-162,275	1.3	11.3	107.23	107.10
BAML	76	316	14.4	72.38	2,285,163	43.09	1,360,650	1.5	9.2	96.56	96.86
NOMURA	48	305	13.9	-48.36	-1,474,765	-22.09	-673,714	1.5	4.4	102.86	103.09
CITI	70	193	8.8	-75.05	-1,450,834	-70.19	-1,356,796	2.3	16.0	101.89	101.73
MORGAN STANLEY	43	99	4.5	-32.60	-323,131	-0.50	-4,946	1.9	15.3	68.11	68.42
UBS	13	98	4.5	32.90	321,285	15.22	148,619	1.9	13.7	105.15	105.01
JEFFERIES	21	94	4.3	-24.01	-224,669	-35.17	-329,139	1.4	9.0	83.87	84.07
JPM	41	84	3.8	489.46	4,109,281	223.63	1,877,486	2.1	16.0	73.90	71.74
BREAN MURRAY	25	84	3.8	8.42	70,362	7.36	61,554	1.0	26.6	102.64	102.78
BARCAP	27	60	2.7	145.73	873,188	120.78	723,699	1.5	12.1	66.91	67.18
RAMIREZ & CO	57	51	2.3	-98.51	-501,830	-101.28	-515,946	2.7	32.2	88.46	88.44
GOLDMAN	31	50	2.3	-2.68	-13,332	33.87	168,232	1.6	5.7	82.87	82.96
IMPERIAL	22	39	1.8	1359.23	5,241,609	1068.14	4,119,054	1.7	9.8	50.10	50.62
SEAPORT	26	37	1.7	648.92	2,416,052	620.57	2,310,494	1.8	6.3	42.54	42.22
CSFB	14	29	1.3	74.03	212,124	57.34	164,302	1.3	5.6	65.87	66.27
WELLS FARGO	12	22	1.0	-6.14	-13,243	-20.29	-43,791	2.6	18.8	85.05	85.08
DB	9	21	1.0	-30.74	-64,122	37.09	77,372	1.3	8.6	49.62	50.58
RAYMOND JAMES	6	15	0.7	22.71	33,606	20.72	30,657	3.2	26.9	109.60	109.59
MUFG	4	14	0.7	-38.92	-56,059	-39.41	-56,767	1.0	11.8	73.01	73.32
Other	90	124	5.7	32.39	401,439	61.02	756,197	1.6	8.5	77.38	77.29
Total	672	2,193	100.0	51.55	11,303,315	39.47	8,654,943	1.8	13.2	84.76	84.71



Source: Markit



Exhibit 11 is a sample Markit quarterly TCA report that demonstrates the granularity of the TCA analysis. Reports break down aggregate fixed income trades across asset classes in terms of benchmark summaries, volume, costs and dealer cover.

The range of market-level statistics available within these reports is set to grow significantly by the end of the year as the online GUI is set to launch during the third quarter of 2016. As the online product ramps up, Markit's TCA product will evolve from principally an end-of-day cost summary tool to one with intra-day statistics and contextual analysis to clients' flow.

Bloomberg's BTCA is available to clients with a Bloomberg terminal. Transactional data can be captured directly from Bloomberg platforms as well as external sources of trade data; Bloomberg uses its internal central contributed data and evaluated pricings engine to calculate performance benchmarks. Among the internal pricing sources offered are Bloomberg's Composite Bloomberg Bond Trader (CBBT), Bloomberg Benchmark (BMRK) and BVAL, Bloomberg's evaluated pricing source.

CBBT is a proxy for standardized tick stream data; it provides weighted bid-ask spread pricing for bonds based on contributed indicative and firm pricing data from hundreds of dealers. BMRK is a real-time price designed to provide pre-trade transparency to buy and sell-side traders, including feeding into crossing networks, auto quoting engines, and algorithmic strategies. Based on these data, BTCA is able to provide benchmarking information such as arrival price methodology, near- and far-touch variance benchmark analysis, and a variety of point-in-time benchmarks to decompose the entire order lifecycle. Results can be presented trade-by-trade or in aggregate, for example by maturity band or order difficulty.

BTCA also relies on Bloomberg's proprietary evaluated pricing engine. Bloomberg's evaluated pricing source, BVAL, provides bond pricing for liquid and thinly traded bonds alike, and also assigns a score based on the dynamics of the data inputs, including the number of data points and their proximity to the target security.

This index score is important for clients that have policies in place for checking any independent pricing with respect to best execution obligations. These scores also allow users of BTCA to take a more granular approach to best execution review and analysis than aggregate flow analysis because it allows for its flow to be categorized and contextualized.

BTCA also focuses on the RFQ system and allows users to aggregate dealer interactions into metrics that can provide greater contextual analysis. This type of analysis historically has been a challenge within voice-based trading environments. Metrics such as cover will compile quotes, prices received or lack of a response from dealers and can rank dealers in the user's network in terms of cover and price. These metrics can also be aggregated to produce additional benchmarks around opportunity cost.

## Conclusion

The first phase of an unprecedented paradigm shift within the global fixed income marketplace is well under way in both the US and Europe. The repercussions of sweeping regulatory mandates will establish new standards in the way participants view the interaction between pricing and best execution. Regulators in the US and Europe have already given considerable guidance and established rules outlining comprehensive best- execution standards across asset classes. Many standards of the past will have to be adapted to new regulatory realities or thrown out entirely.

The time when market participants could independently benchmark their own execution performance in such a way to adequately satisfy internal compliance or fiduciary obligations is gone. These changes are particularly important to buy-side participants on both sides of the pond. Traditional metrics such as dealer quotes and TRACE feeds are no longer sufficient as stand-alone metrics for price discovery.

Investor demand for third-party TCA solutions within fixed income has grown tremendously in recent years. The new standard for satisfying best execution standards for market participants will have to be a combination of traditional internal expertise and integrated third-party market analysis tools. Established companies such as ICE Data Services, Markit, and Bloomberg are ahead of the curve in bringing, for the first time, robust TCA analysis to the otherwise murky fixed income marketplace. A critical factor for the success of these third-party models, however, will be the ease with which clients integrate them into their existing workflows.

In the brave new world of fixed income trading, investors will need to utilize every tool – new and old – available to them. Fixed income TCA, which was once thought to be a quixotic undertaking, is evolving rapidly. Even so, the tools available today are still in their nascent stages and TCA and compliance policies are very much a moving target firm to firm. Nonetheless there is already an abundance of insight and value to be added to the decision-making processes for any firm.

## About

### TABB Group

TABB Group is a financial markets research and strategic advisory firm focused exclusively on capital markets. Founded in 2003 and based on the methodology of *first-person knowledge*, TABB Group analyzes and quantifies the investing value chain from the fiduciary, investment manager, broker, exchange, and custodian. Our goal is to help senior business leaders gain a truer understanding of financial markets issues and trends so they can grow their business. TABB Group members are regularly cited in the press and speak at industry conferences. For more information about TABB Group, go to [www.tabbgroup.com](http://www.tabbgroup.com).

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A financial markets industry veteran, Anthony Perrotta is a partner at TABB Group, responsible for directing the Global Research Alliance and Consulting practices, which serve institutional investors in the capital markets. The practices focus on the areas of market structure, regulatory affairs, compliance, trading, clearing, technology, and data issues affecting equities, fixed income, listed, and OTC derivatives, and technology. Mr. Perrotta presents at a wide range of industry conferences and his thought leadership regularly appears in financial publications such as the *Wall Street Journal*, *Financial Times*, et al.

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