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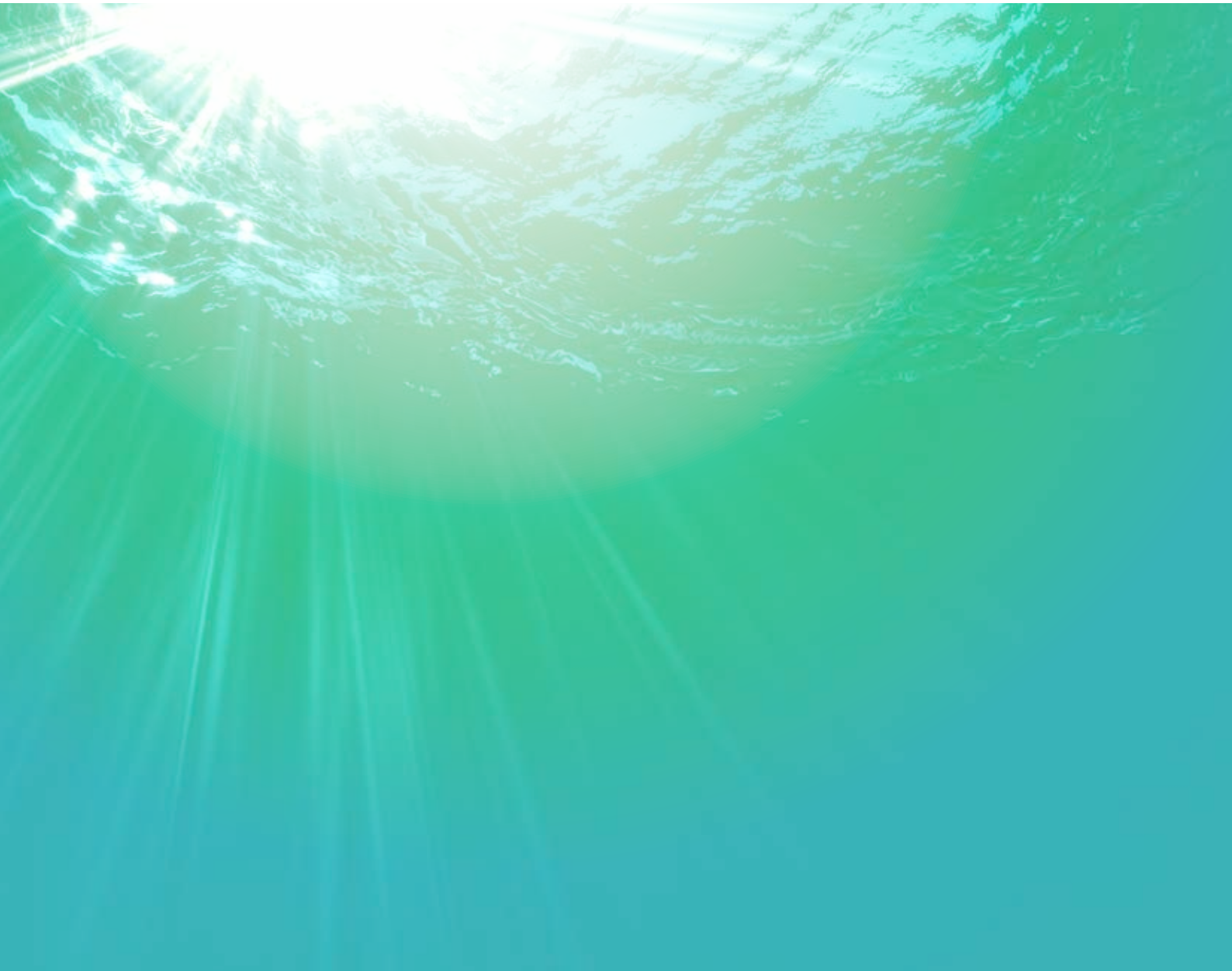
Assessing Liquidity: Why Quality Data Matters in the Fixed Income Space

By DAN HUSCHER, Managing Director, Fixed Income Pricing, IHS Markit



Far-reaching regulatory changes in the decade following the global financial crisis have dramatically altered the landscape for managers of open-ended funds. At the same time, central bank monetary policies and technological innovation have transformed the structure of fixed income markets. Today, managing portfolio liquidity occupies an ever-greater share of the larger risk management framework across all asset classes. Global regulators have begun to address the issue, most notably through SEC Rule 22e-4, with the goal of ensuring that asset managers have sufficient liquidity to handle mutual fund and ETF shareholder redemptions equitably.

Since 2010, we have been thinking about better ways to use data to assess liquidity risk in fixed income markets—well before regulatory mandates to collect or report on the risk. Since then, we have amassed 10 years of liquidity data history (including backfilled history) on millions of fixed income instruments, which give us unique data insights to help customers identify opportunity, reduce operational risk and increase efficiency. Liquidity risk is a complex factor that fixed income portfolio managers need to contend with, alongside interest rate, credit and other risks. In this paper we survey the landscape to offer guidance on how firms can prepare for the future of liquidity risk regulation, and we show how high-quality fixed income market data can help firms comply.

The SEC defines liquidity risk as "the risk that a fund could not meet requests to redeem shares issued by the fund without significant dilution of remaining investors' interests in the fund."

Liquidity risk management: A pillar of prudent fund management

Few topics have received more focus—or generated more controversy on a global scale—than liquidity risk reform. Both the U.S. Securities and Exchange Commission (SEC) and the International Organization of Securities Commissions (IOSCO) advocate developing a holistic liquidity risk management framework.

Under the SEC rule, registered open-end management investment companies, including ETFs, must adopt a written liquidity risk management framework, approved by the fund's board of directors. In addition, they must collect and ultimately report on liquidity risk by categorizing holdings on a time-classified basis (now whether these classifications will be publically available depends on the outcome of the latest proposal as of March 14th 2018):

Highly liquid	Investment can be converted to cash within three business days
Moderately liquid	Investment can be converted to cash within four to seven calendar days
Less liquid	Investment can be sold or disposed of in seven calendar days but the settlement is reasonably expected to be greater than seven calendar days
Illiquid	Investment cannot be sold or disposed of within seven calendar days

The Board of the International Organization of Securities Commissions (IOSCO) has pursued a consultation process in which it looked at examples of best practices used by international regulators and asset managers. In its final report, Recommendations for Liquidity Risk Management for Collective Investment Schemes, [1] it asserts that effective liquidity risk management is important to safeguard the interests and fair treatment of investors and maintain the order and vigor of collective investment schemes (CIS) and markets. It also explores liquidity risk management tools that aim to pass on transaction costs to redeeming investors or restrict access, to prevent a situation where remaining investors are left with a less liquid portfolio with higher risk exposure. More recently, the European Systemic Risk Board (ESRB) has drawn further attention to liquidity issues and published its own set of recommendations around systemic risks related to fund liquidity.[2]

Critics of the original SEC rule proposals contended the rules were too cumbersome or that they implied a level of precision that doesn't exist. Subsequent discussions within the industry and the revised final rule have addressed some of these concerns. Controversy aside, we see the IOSCO report as evidence that increased attention to liquidity risk may spread reforms globally. **The notion of regulating liquidity risk management is no longer a question of if, but when and how**. In the interim, leadership firms are moving forward, adopting best practices and preparing for the full reporting requirements.

1 https://www.sec.gov/rules/final/2016/33-10233.pdf , page 56
2 http://www.iosco.org/library/pubdocs/pdf/IOSCOPD590.pdf
3 https://www.esrb.europa.eu/news/pr/date/2018/html/esrb.pr180214.en.html

Key Takeaways

- Liquidity risk management is set to spread globally, and regulation may follow.
- Leadership firms are moving forward, adopting best practices and preparing for the full reporting requirements.

Challenges asset managers face and how best to prepare for liquidity risk regulation

To manage assets is to manage risk. Beyond any regulatory imperative, many firms have successfully implemented workflows to identify, understand and measure all sorts of risks across the spectrum, at the security, portfolio and operational level. In addition to evaluating credit, rate and inflation risk, firms and their compliance teams must formalize their liquidity risk management programs sooner rather than later. Oversight of investment risk is also a critical responsibility for fund boards. Fund directors should consider what types of systems and operating practices are in place to manage the fund's day-to-day liquidity risk management practices.

Virtually all asset managers have some form of liquidity risk assessment, whether formal or informal, either as a pre-trade metric or as an ongoing risk management discipline. Research shows that over 90% of fixed income portfolio managers assess the liquidity of a bond before purchasing it.[3] This challenge is more pronounced in fixed income, where assessing liquidity is not dependent on trade data alone. The risk to the firm is that while you think a fixed income instrument is worth, say, 99.5 cents on the dollar, it may actually be worth far less when you need to sell it.

Fund managers face major obstacles in obtaining the data they need to comply with the liquidity rules. There are both **quantitative and qualitative aspects of assessing liquidity**; and because liquidity is so dynamic and multi-faceted, it can be a subjective exercise. That is one of the reasons our industry has failed to reach agreement on whether fixed income liquidity has or hasn't deteriorated. While it is true that bid/ask prices are at pre-crisis levels, and trading volume is at all-time highs, front-office professionals and traders often express a different view. They will tell you that they can't trade in the size that they wanted to; or they can't make the trade as fast as they used to, one of the more qualitative aspects of liquidity.

Many risk factors are easily quantifiable. Market risk, for example, typically takes the form of value-at-risk, or some type of standard deviation metric to measure market price volatility. With credit risk, analysts often rely on financial ratios and industry outlooks to assess the probability of a default. When it comes to liquidity, however, risk assessment is more of an art than a science.

Other challenges arise from the "market depth" requirement that mandates that a fund "determine whether trading varying portions of a position in a particular portfolio investment, in sizes that the fund would reasonably anticipate trading, is reasonably expected to significantly affect the liquidity characteristics of that investment."[4] This aspect of Rule 22e-4 considers the relationship between a liquidity assessment process and the fund's anticipated trading strategy that may lead to implementation challenges.

Key Takeaways

- Fund managers face major challenges in obtaining the data they need to comply with the liquidity rules.
- Firms and their compliance and board-level oversight teams must formalize their liquidity risk management programs sooner rather than later.
- Managers of open-ended funds should review their workflows and outline specific steps they will take to exit a position of a certain size over a certain period of time.

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4 IOSCO Consultation Report: Examination of Liquidity of the Secondary Corporate Bond Markets, p. 9.
5 Section III.C.3.b., page 138

Why high-quality market data matters

Assessing liquidity for fixed income instruments is anything but straightforward; it's a mosaic comprised of multiple factors that exist in a dynamic ecosystem. When people think of liquidity they often think of trading. But trade activity alone is insufficient. For example, a firm might own an entire municipal bond issue. They sit on an attractive piece of paper and have no interest in selling it. As such, there is no reported trade data for that bond. Additionally, no dealers quote the issue. Just because you don't see trade activity for a name doesn't necessarily mean the paper is illiquid. If the firm needs to exit that position, they still can put it out for bid and exit the position in relatively short order.

And it isn't always a movement of the price that indicates liquidity; it's also the time it takes to trade it. A trader will tell you that it takes longer to get a trade done, or she may have to break up a position into multiple trades. Whereas she used to be able to find a buyer in minutes, it now takes her hours. A manager may have assets at both ends of the spectrum in a single portfolio. For example, you have Treasuries that you can trade instantaneously; but if you are sitting on an esoteric instrument, it may take a while to find a buyer that's interested in taking on that kind of risk.

Detailed Quote and Trade Data

	1 Day	7 Day	10 Day	30 Day	60 Day	90 Day	180 Day	365 Day	MTD	YTD
Count of Days Traded	1	5	7	20	38	53	104	219	9	29
% of Days Traded	100.0%	100.0%	100.0%	90.91%	90.48%	82.81%	81.25%	83.91%	100.0%	90.63%
Max Days Between Trades	0	1	1	1	3	3	5	5	1	3
Avg.Daily Total Volume	30,000	160,000	125.786	412.614	461,940	339,352	311,129	505,956	147,722	571,203
Buy-Sell Ratio		0.15	0.20	0.22	1.17	1.10	0.98	0.83	0.11	1.28
Turnover	0.00	0.00	0.00	0.02	0.04	0.05	0.08	0.28	0.00	0.04
Avg.Trade Size	15,000.00	38,119.05	32,611.11	108,065.48	128,486.75	97,831.08	82,452.38	117,695.63	33,237.50	157,573.28
Total Volume	**30,000**	**800,500**	**880,500**	**9,077,500**	**19,401,500**	**21,718,500**	**39,824,500**	**132,054,500**	**1,329,500**	**18,278,500**
Trade Count LT100K	2	19	25	72	132	194	436	975	35	98
Trade Count 100K1M	0	2	2	10	15	24	39	122	5	14
Trade Count 1M5M	0	2	0	1	2	2	6	17	0	2
Trade Count 5M25M	0	0	0	1	2	2	2	8	0	2
Trade Count GT25M	0	0	0	0	0	0	0	0	0	0
Trading Range	0.10	1.63	3.57	5.26	6.61	7.42	7.85	8.94	3.77	6.31

Figure 1. Examples of comprehensive liquidity analytics available from trade data

Assessing liquidity requires deciphering market context of quotes and discerning the difference between an indication and an executable level. A dealer provides a view at what level he or she thinks an instrument may trade at - an indication; but you get a better sense of the executable market if the run includes size or the dealer is actively making markets.

Key Takeaways:

- A bond can almost never trade, but still be highly liquid. You need a lot more data and market knowledge to judge the true depth of the market.
- Measuring liquidity is complex; it requires: multiple sources of data from the markets, complex technology to organize this information and expert judgment in applying it.

Capitalizing on high-quality data to solve the liquidity risk puzzle

Proliferation of data-based analytics and electronic trading has made liquidity data more accessible and more transparent to market participants. At IHS Markit, for example, we see more than 10 million price points daily in real time, sourcing data from dealer runs, axe lists, and auctions disseminated across the Street and supported by our parsing strategies.

Depth of the data is essential to the analysis process. The data points can be categorized as **backward- or forward-looking insights.** To a certain extent, trade volumes, or trading analytics, are backward-looking. They do a great job reporting on the trades that have occurred, but what doesn't get reported in the trade dataset are the trades that were intended to occur but didn't because the counterparties could not reach agreement on the price, or the dealer couldn't find a counterparty. Dealer quoting activity plays such an important role because it gives a more forward-looking insight into current intent in the marketplace.

Breadth of data is also key to judging liquidity. Beyond just pricing, the type and quality of liquidity data we collect, such as the number of dealers quoting, quotes with size and the average size quoted, becomes very useful for risk management purposes. This additional information also helps us develop "buckets" of comparable instruments. If you don't see a bond that's being quoted or traded, you can compare it to one with similar features, including bond type, coupon, optionality features, credit rating, size, region and many more attributes. Deep data sets enable you to make educated inferences about similar instruments.

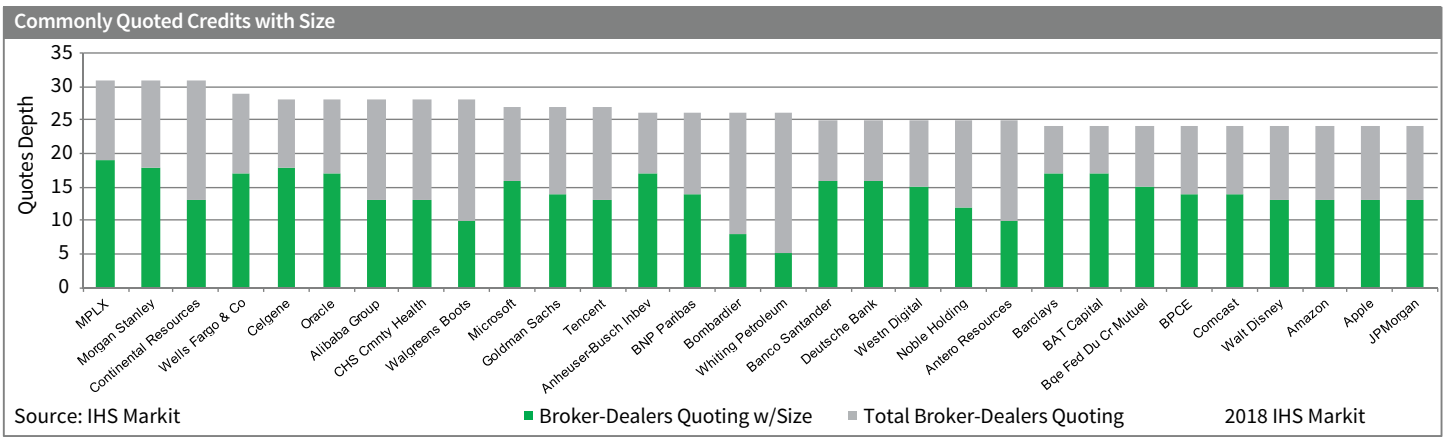


Figure 2. This chart shows the number of dealers quoting with sizes, versus those quoting with no size specified. Quotes with size can give more real indication of liquidity in a security.

Key Takeaways:

- Depth and breadth of data is essential to build a liquidity risk framework.
- Regardless of the quality of your efforts, at the end of the day, your analysis and models are only as accurate as the data sets you rely upon.

Our initial approach to understanding liquidity took the form of a scoring system that we developed to support client portfolio management and reporting. Instruments were given a liquidity score from 1 (most liquid) to 5 (least liquid) derived from observable and reliable data sources, including trade repositories, dealer quotes, interdealer brokers, executable feeds, books of record, index contributions and counterparty marks.
The easy-to-use score afforded clients an important level of transparency, and they are still an important tool for many firms. However, as the regulatory environment has evolved, we have sought out better ways to serve clients' needs for sophisticated liquidity risk information.

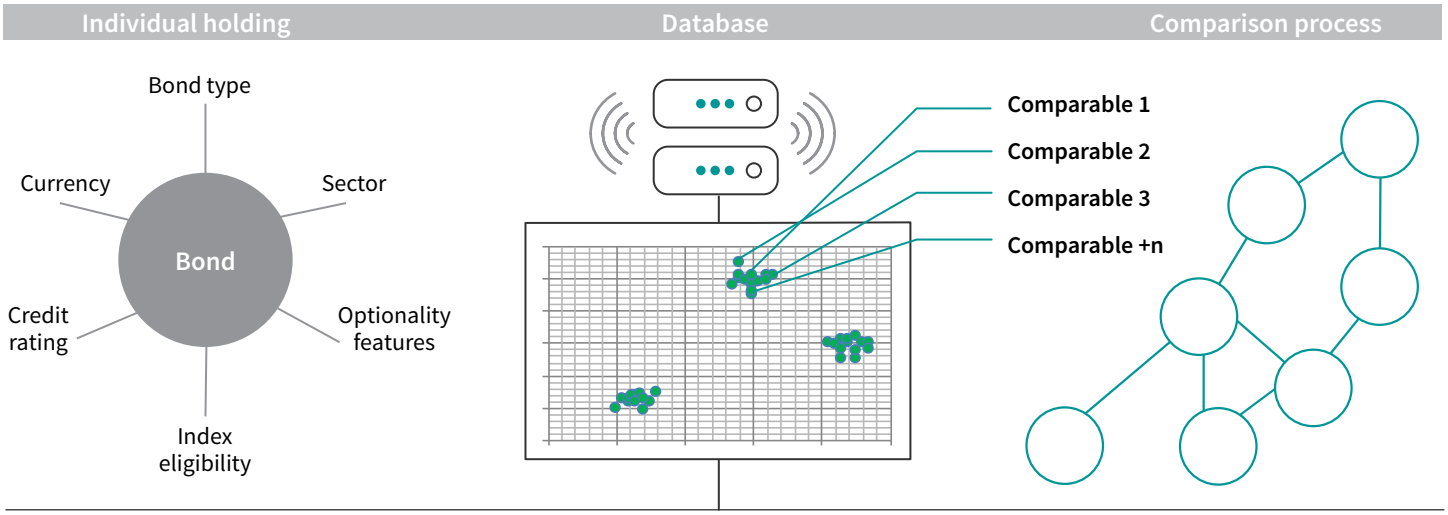
Your roadmap to meeting liquidity risk requirements

Most firms look to a third party, like IHS Markit, to provide high quality data feeds to fuel their models or serve as a quality check for in-house assessment. A third party brings independence to the process and reduces conflicts of interest for managers valuing their own portfolio assets. We help asset managers and their oversight teams understand what kind of data is available and what sources are used for added confidence.

In the fall of 2017, IHS Markit and MSCI announced that they had successfully integrated extensive fixed income market and liquidity data into MSCI's LiquidityMetrics analytics and the firm's regulatory reporting workflow. To understand the markets, you need more than anecdotal evidence. Now, asset managers can profile liquidity across their portfolios or on an instrument-by-instrument basis, creating a liquidity map to support investment decisions. These data points include information on the days-to-liquidate a position, the price impact of selling, and liquidity bucket classifications to facilitate compliance with regulatory directives. They also are able to test liquidity of their investments against redemption commitments by estimating the impact of hypothetical redemptions on the net asset value (NAV) of the shares.

This solution offers the broadest asset class coverage available in the industry today across equities, derivatives, and fixed income instruments, including government, supranational, agency, corporate, sovereign and municipal bonds, securitized products, syndicated loans and credit default swaps. Within our data offering, we also provide a number of additional pre-calculated analytics sourced from MSCI's award-winning multi-asset class liquidity risk framework. Together, these insights help clients develop a deep understanding of portfolio risk.

The Liquidity Modeling Process



Our liquidity modeling in fixed income frequently compares the characteristics of individual bonds with a broader universe of data. Information from groups of comparable bonds can be used to infer liquidity profiles for bonds when little to no observed data (trades or dealer quotations) exists. IHS Markit's extensive database is critical to the process.

For more information www.ihsmarkit.com

CUSTOMER CARE AMERICAS
T +1 212 931 4900

CUSTOMER CARE EUROPE, MIDDLE EAST, AFRICA
T +44 20 7260 2000

CUSTOMER CARE ASIA PACIFIC
T +65 6922 4200

E sales@ihsmarkit.com

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