

A background image of a candlestick chart on a grid, with the chart elements rendered in a light gray color. The chart shows various price movements over time, with some bars indicating significant price changes.

When the Market Moves the Market

FIXED INCOME EDITION

JEFFERIES WHITE PAPER | 2019

Jefferies

When the Market Moves the Market: Fixed Income Edition

At \$100 trillion, global fixed income markets are about fifty percent bigger than the equity market. Our July 2019 piece, *When the Market Moves the Market: Equities Edition*, explored the monumental changes the equity market has undergone over the last decade.

The changes in the fixed income markets are different, but no less substantial – and in contrast with the equity market, many of them are in earlier stages, so their magnitude and impact are only expected to accelerate.

When the Market Moves the Market: Fixed Income Edition digs into these changes. As in the equity markets, there have been shifts in the who, how and where trading is executed. But because of the interconnected, complex and extremely diverse nature of the fixed income markets, other changes are as material as well.

There have been new entrants to the market, new investors active in the space, new products introduced on both the highly liquid and less liquid ends of the spectrum, and resurgences in corners of the market once thought dead.

When the Market Moves the Market: Fixed Income Edition sheds light on the current landscape of the fixed income markets, how much has changed in recent years, and what this could mean in the days ahead. We explore:

1. The change in relative size and shape of fixed income markets and market participants over last decade
2. The manner in which these products and market trade
3. Resulting shifts in transparency, liquidity, and market breadth and depth, and
4. The impact of product innovation and revitalization, particularly vis-à-vis fixed income ETFs and mutual funds on the highly liquid end of the spectrum, the loan and private credit market on the other, and the rise of green bonds.

Some of these shifts are more material than others, and their impact on various fixed income portfolios diverse. Price discovery and execution for some products are far more liquid and more transparent now – while others linger in the more opaque methods of the past.

Product development has also prompted additional follow on changes. In some instances, “equification” has come to some corners of fixed income markets, with the rise of fixed income ETFs and mutual funds creating a truly exchange-traded, highly liquid approach to access and execution. The most standardized products have seen new market makers and counterparties enter the space, helping to enhance liquidity and more transparent pricing. At the other end of the spectrum, the growth (and in some cases, resurgence) of the loan and private credit market has been notable, and green bonds are increasingly in view for investors focused on climate or environmental issues.

All of this has happened during a period of persistently low rates across the globe. As of this writing, nearly a quarter of the world’s debt is negative yielding for the first time ever. This in and of itself is an enormous shift from our past, and will continue to have massive implications for the global fixed income markets in the coming years, and in the event of an economic slowdown. We hope *When the Market Moves the Market: Fixed Income Edition* helps to further the conversation around multiple critical issues at the heart of a \$100 trillion market.

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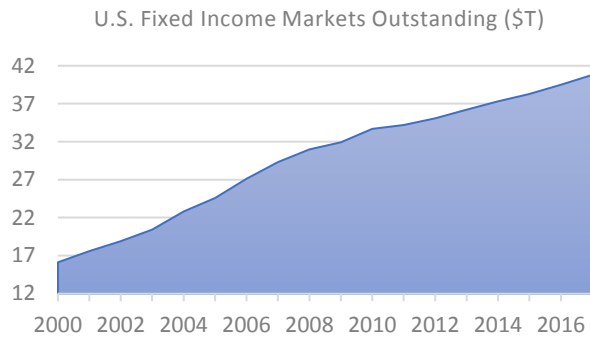
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Evolution or Revolution: Shifts in the Fixed Income Market

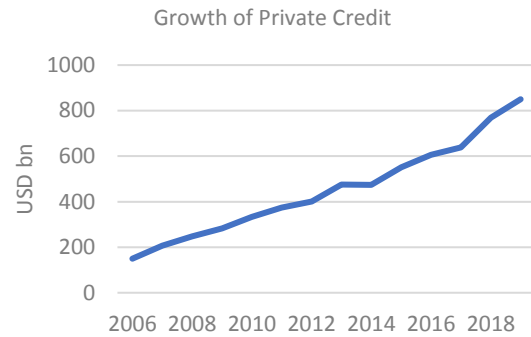
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GROWTH IN WHAT IS BEING TRADED:

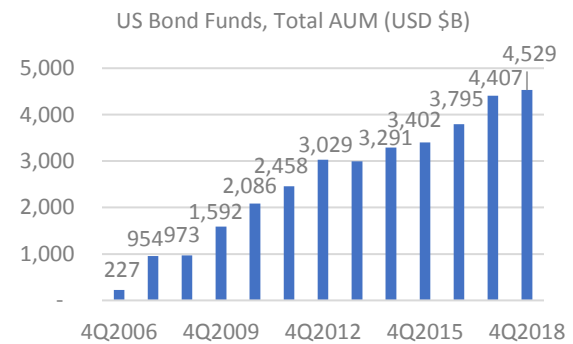
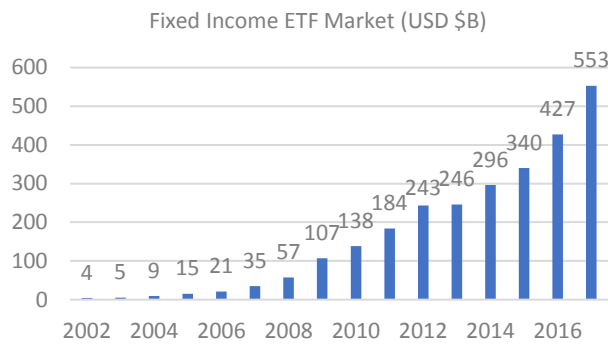
OVERALL MARKET:¹



PRIVATE CREDIT:²

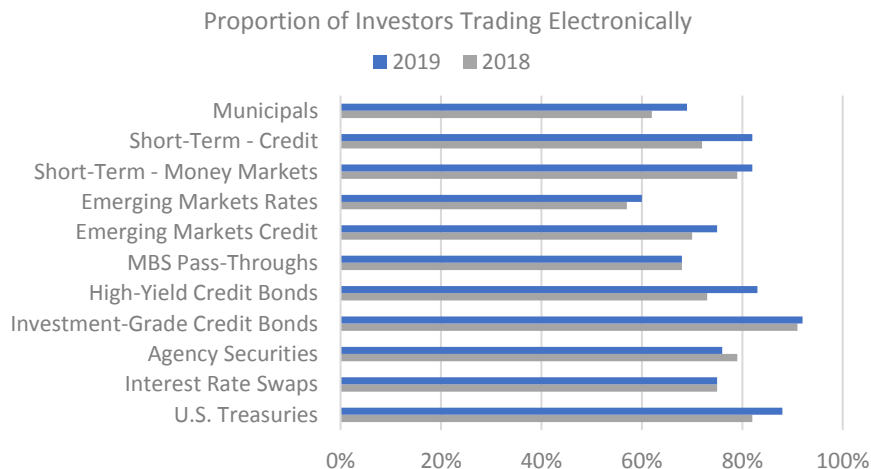


THE RISE OF ETFS AND MUTUAL FUNDS:³



2

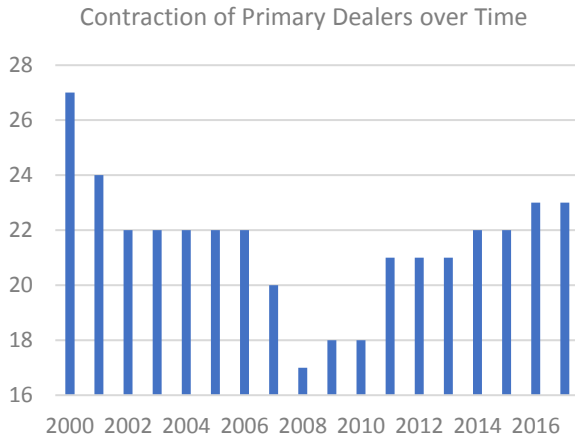
SHIFT IN HOW THEY'RE BEING TRADED:⁴



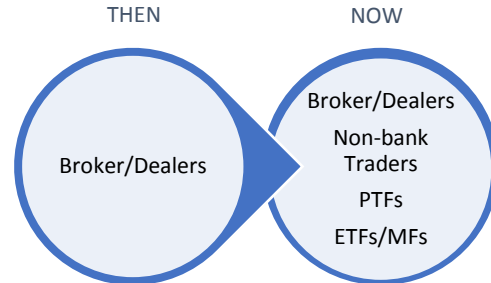
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CHANGES IN WHO IS TRADING:⁵

DECLINE IN DEALERS:



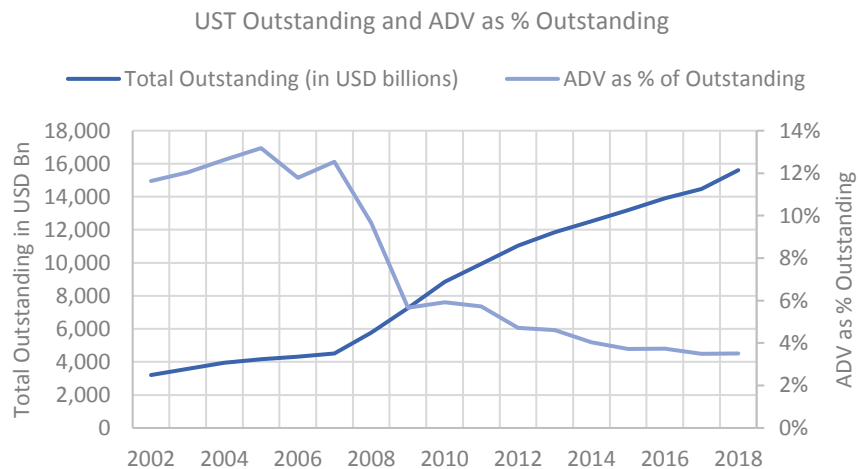
DIVERSIFICATION OF NON-DEALER COUNTERPARTIES:



4

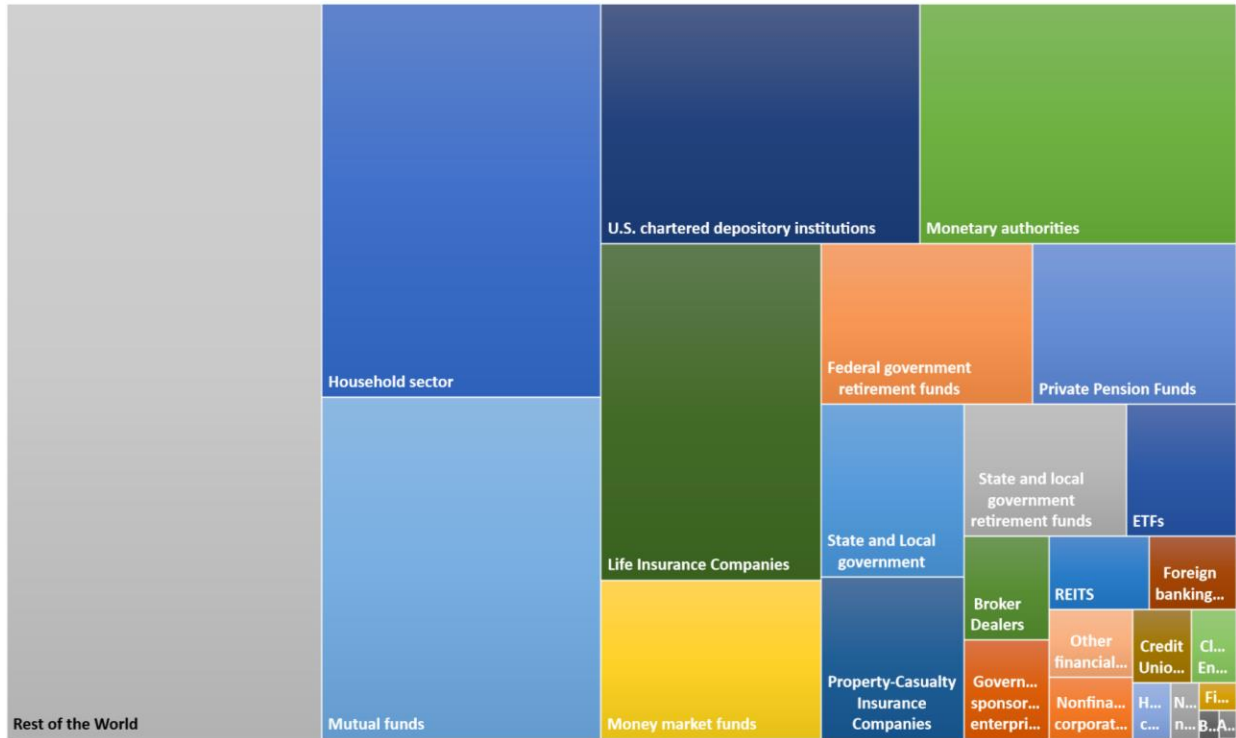
MOVES IN LIQUIDITY/DEPTH OF TRADING:⁶

U.S. Treasuries Outstanding vs. ADV as % Outstanding | 2002 - 2018

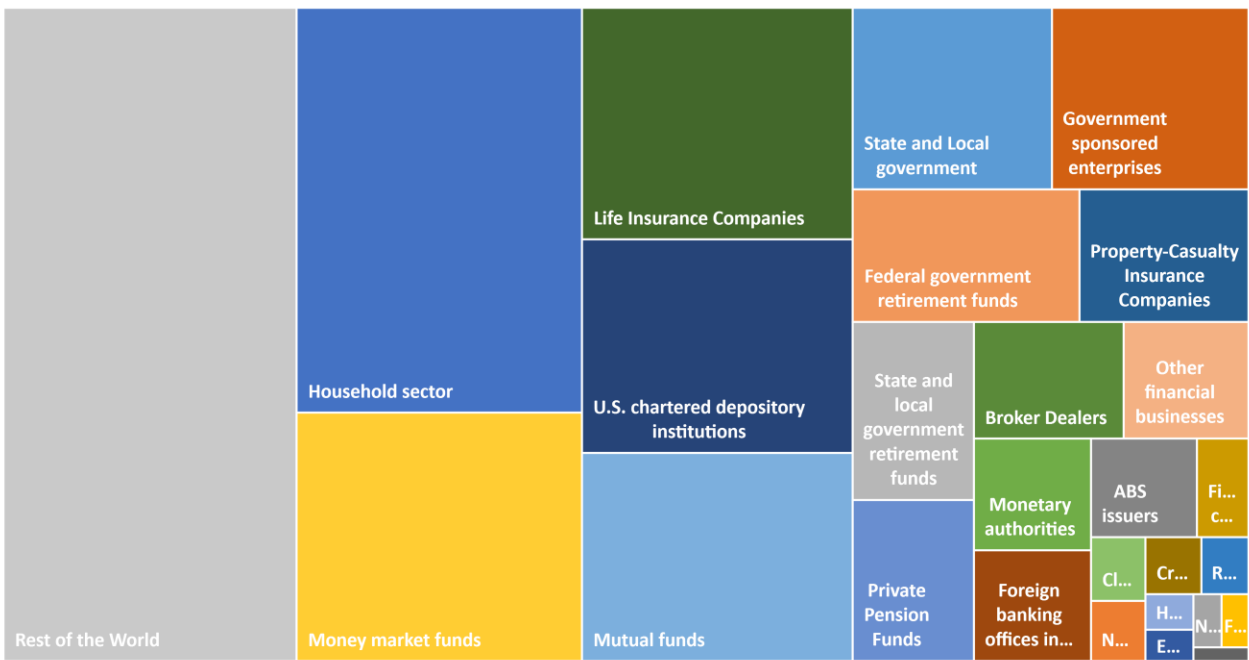


Source: SIFMA, TRACE, Jefferies

2018 U.S. DEBT HOLDERS



2008 U.S. DEBT HOLDERS

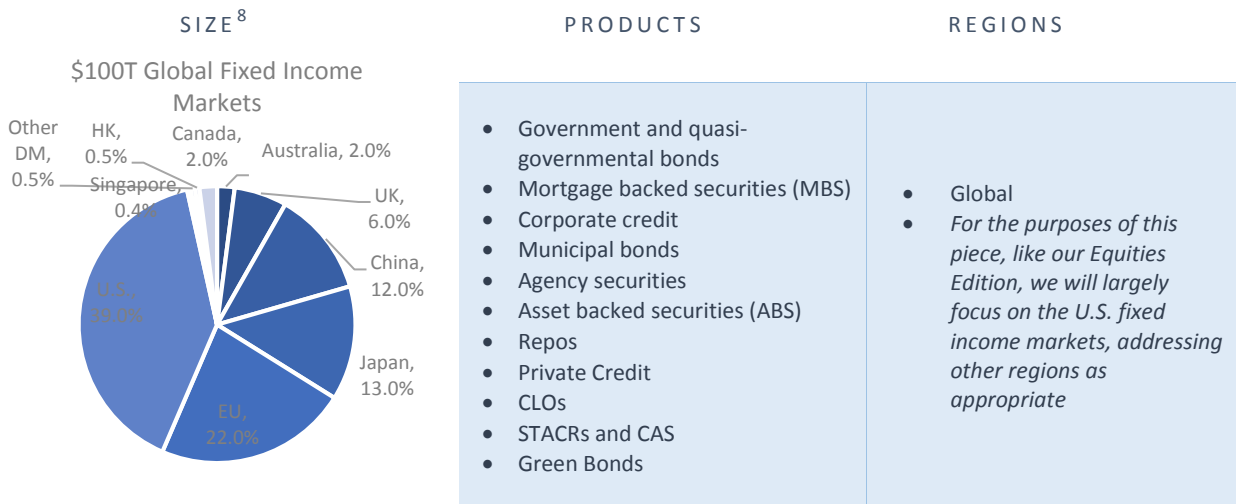


A “Market” Like No Other

The fixed income markets are, for many reasons, vastly different than the equity market. For one, we intentionally use the term *markets* (plural). Though most fixed income products pay the investor a set amount on a fixed schedule, the exact structure of these products varies widely. The fixed income “market” is really a set of markets – each with idiosyncrasies, rules and quirks unto themselves. Regions have their own additional quirks – for example, the corporate credit market is markedly different across jurisdictions, with vast differences between U.S. and European corporate credit structures and investors.

Because of this diversity – let’s get specific about what we address here.

What Are We Talking About When We Talk About “Fixed Income Markets”



It is hard to overstate the diversity of these products and markets – and it is by far the largest securities market in the world. Where companies typically have one, maybe two equity securities, the debt instruments they issue can be in the dozens, if not *thousands* (as with financial services companies). The top 10 issuers of corporate credit in the U.S. (ex-financial institutions), for example, together have issued more than 1,300 individual corporate debt securities outstanding – with the character of each of them differing from the next.

And that’s just one slice of the global fixed income markets. Some governmental bonds like U.S. Treasuries, Japanese Government Bonds or German Bunds are global instruments, part of investment portfolios worldwide. Others have much more regional audiences because of tax treatment, structure or other factor. The nature of the investor base has changed as well. There has been a huge growth in highly liquid vehicles like mutual funds and ETFs (ETFs, for example, have grown more than ten-fold), on the back of growing retail involvement in the space, while others have seen a decline.

Let’s survey how things have changed in the U.S. – the world’s largest and most liquid fixed income markets.

SHIFTS IN U.S. FIXED INCOME MARKETS AT A GLANCE⁹

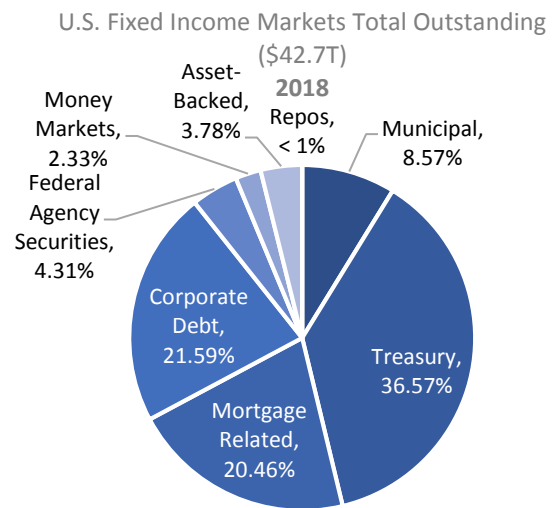
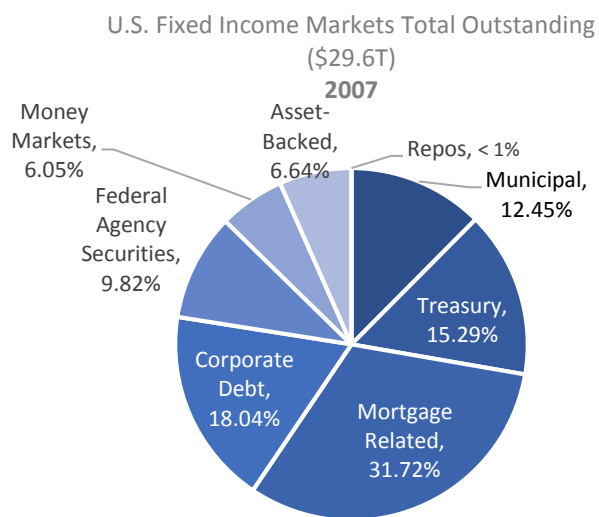
Total Outstanding

By total outstanding, U.S. fixed income products in 2007 were:

- 32% Mortgage Related
- 18% Corporate Debt
- 15% U.S. Treasuries
- 12% Municipals
- 10% Federal Agency Securities
- 6% Money Markets
- 7% Asset Backed
- <1% Repos

In 2018, they were:

- 37% U.S. Treasuries
- 20% Mortgage Related
- 22% Corporate Debt
- 9% Municipal Securities
- 4% Agency Securities
- 4% Asset Backed
- 2% Money Market Funds
- <1% Repos



U.S. FIXED INCOME MARKETS AT A GLANCE: THEN & NOW (2008 – 2017)¹⁰

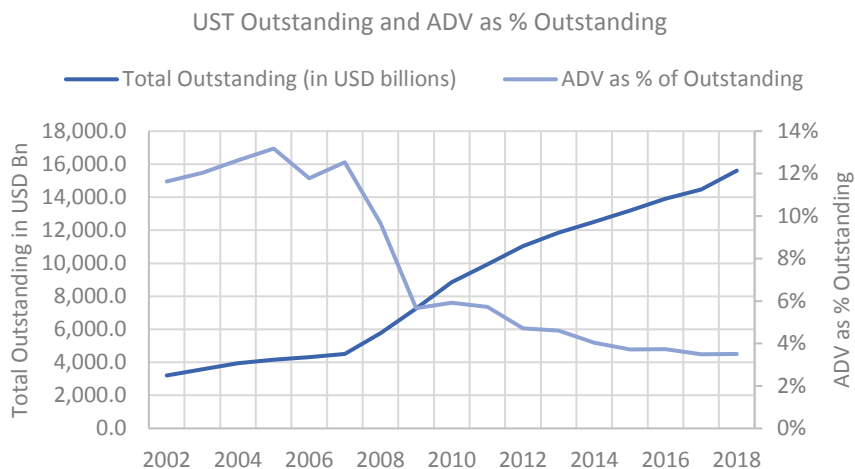
	Issuance	Outstanding	Volumes
U.S. Treasuries	↑	↑	↓
Mortgage Backed Securities (MBS)	↑	→	↓
Asset Backed Securities (ABS)	↑	↓	→
Agency Securities	↓	↓	↓
Corporate Credit	↑	↑	↑
Municipal Securities	↑	→	↓
Private Credit	↑	↑	N/A
Repos	↓	↓	↓
Green Bonds	↑	↑	↑

ON LIQUIDITY: DIVERSE BUT UNMISTAKABLE SHIFTS

Let's start with shifts in liquidity – one of the most critical aspects of any market. In many cases, liquidity has declined even as total outstanding and issuance has grown. The breadth and depth of the market isn't what it was a decade or more ago. And there are two additional important points: i) reported liquidity only captures *executed* trades, it does not capture buys and sells that were *attempted but not executed*, and ii) the variability of fixed income market liquidity is considerable.

Below we map shifts in fixed income products outstanding against changes in average daily volume over time.

U.S. Fixed Income Markets and Liquidity | U.S. Treasuries



WHO MOVED MY LIQUIDITY?

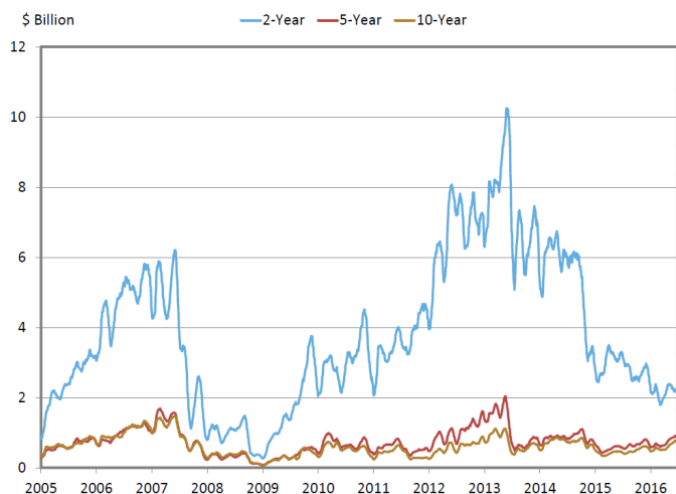
In some cases...no one. But liquidity has contracted in many of the products we review here. And perhaps even *more importantly*, the underlying changes in depth and breadth of market have prompted traders to reassess their execution strategies, particularly in periods of acute stress or those that are liquidity challenged.

Source: SIFMA, TRACE, Jefferies

Let's start with government bonds and the case of U.S. Treasuries. As an example of how diverse the liquidity story can be in, arguably, the most standardized corner of the U.S. fixed income markets - there have been somewhat diverging fates. Treasury Inflation Protected Securities' (TIPS), for example, volume *grew*, while Treasuries with less than 3 years maturity and Floating Rate Notes (FRNs) experienced declines. Daily volumes for U.S. Treasuries overall in 2017 was ~\$505 billion, off its 2007 peak of \$570 billion, but still higher than 2015's ADV of \$490 billion.¹¹

But overall, total outstanding has grown nearly threefold, while liquidity overall has declined by the same magnitude. A

Depth of U.S. Treasury Securities



Source: New York Federal Reserve Board

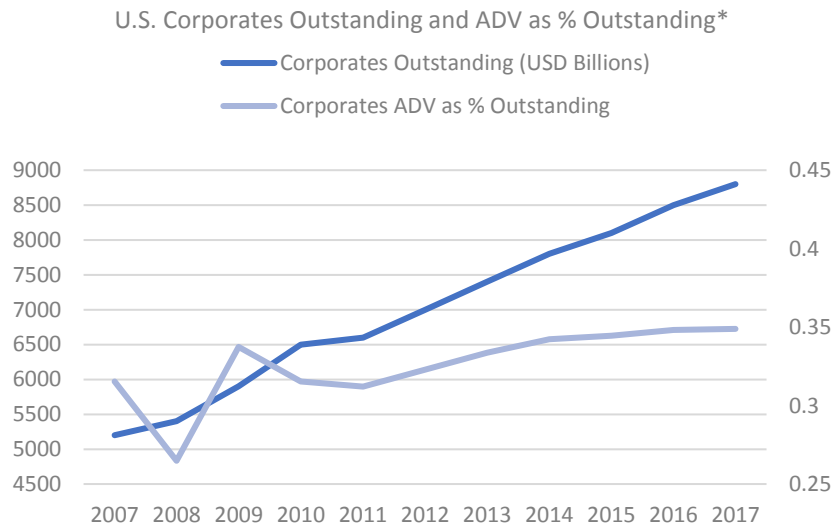
critical issue in the changing shape of the U.S. Treasury market is not simply overall liquidity as measured by average daily trading volume – but the breadth and depth of market, which can impact how quickly trades of different sizes are executed. For example, the Bank for International Securities reports that “Quantity-based metrics point to somewhat diminished market depth and transaction sizes, although to different degrees across jurisdictions and market segments. Quoted depth for two-year US Treasury notes, for example, has declined by more than 65% since its peak in early 2013.”¹² The New York Fed showed in an October 2016 report this shift in depth (chart at left).¹³

As many have pointed out – liquidity remains strong for Treasury trading under a certain size threshold – in part because this is the most electronified corner of fixed income markets. Greenwich Associates notes about 70% of U.S. Treasury trading is executed electronically, but that is largely reflective of trades less than \$1 million.¹⁴ As we explore later, the same pattern holds true for corporate bonds as well – a much more diverse market.

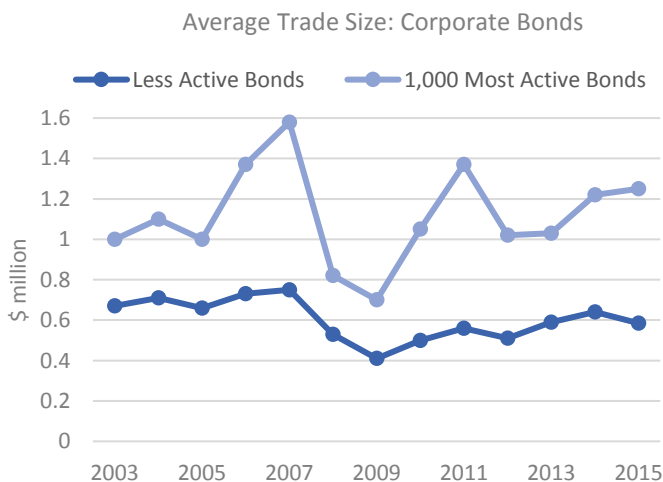
These issues have led some to investigate what adjacent issues could arise in periods that may be more liquidity challenged. The CFTC, for one, has noted “while overall risk volume is greater across all cash [Treasury] securities than across all futures contracts, the liquidity hierarchy is more complex, with certain [Treasury] futures contracts more liquid than certain cash securities, and *vice versa*.”¹⁵

Why does this matter? Because some have theorized that in periods of acute stress and liquidity challenged environments, volumes are higher for liquid futures contracts than even the highly liquid cash treasuries.¹⁶ Despite being among the world’s largest and most liquid markets, and serving as both reference instrument or benchmark for countless portfolios – U.S. Treasuries have proven to be subject to gap risk in periods of market volatility – when buyers and sellers need liquidity the most.

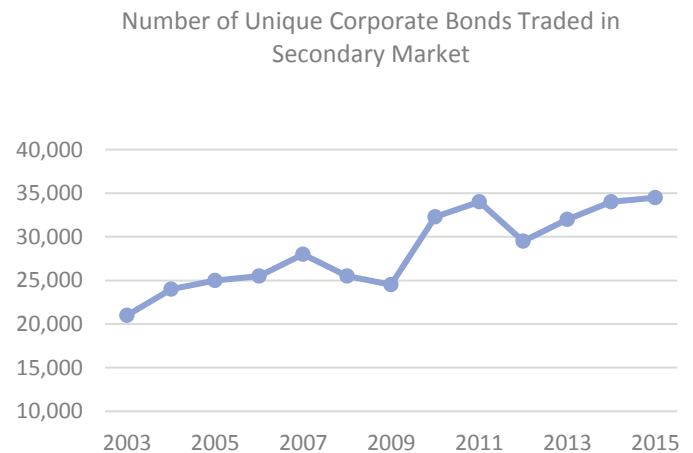
U.S. Corporate Credit



Source: FINRA, TRACE, Jefferies *Note ADV as % Outstanding Has Been Standardized¹⁷

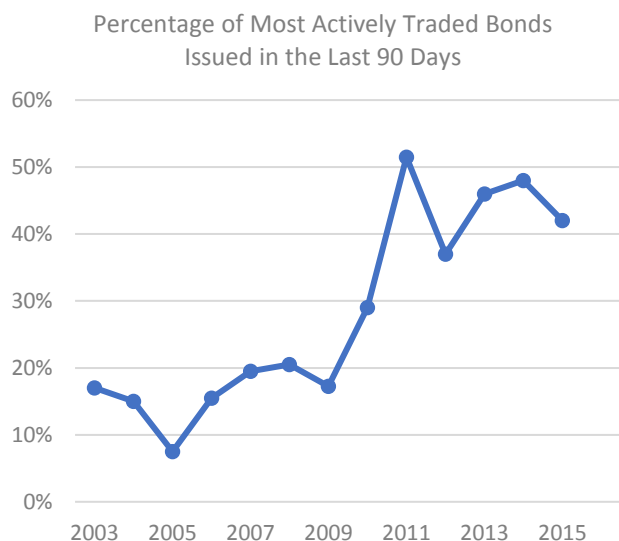


Source: FINRA, TRACE, Jefferies



Source: FINRA, TRACE, Jefferies

Volumes are up for both investment grade and high yield corporate credit – **but they have not kept pace with the growth in total corporate credit outstanding.**¹⁸ With persistently low rates, issuers have enthusiastically come to market in recent



Source: FINRA, TRACE, Jefferies

years, and investors' appetite for high yield remains elevated, given the global hunt for returns. However, there is an enormous decline in turnover and volume for corporate credit the longer it is post-issuance. Some measure a nearly 70% decline after the first month, with volumes continuing to taper but remaining somewhat range bound in the months following.¹⁹

As in the Treasury market, corporate execution is impacted by the size of the trade. Slightly less than three quarters of U.S. corporate bond trades executed daily are for 100 bonds or fewer, and about 90% of these are executed on electronic trading platforms.²⁰

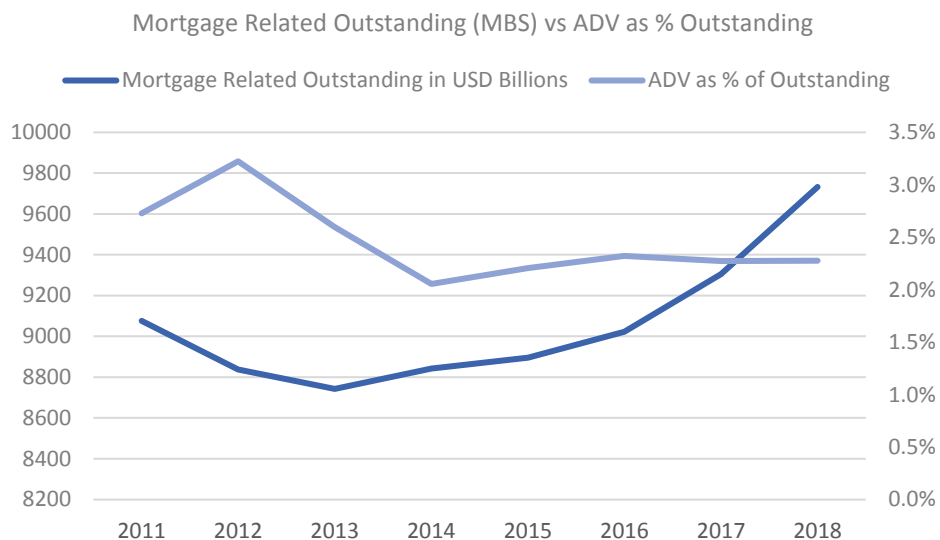
Some assert that bonds of larger sizes – those more likely to be found in fixed income ETFs – benefit from index inclusion, and have higher turnover than those too small to be included in indexes. The rise of fixed income ETFs and indexed products has had other follow on effects for both the fixed income and equity markets. We explore those shifts later. But what is

clear is that liquidity is considerably worse for most corners of the corporate credit market now versus a decade ago.

As many have remarked – the depth and breadth of the corporate market has thinned (or at least not kept pace), for a number of reasons. Among them – decline in number of dealers, growth in the market itself (across both notional outstanding and number of individual corporate bonds traded), fragmentation of execution across electronic platforms and new market entrants and counterparties, and regulation that has made holding various assets much more onerous.²¹ So while some corners of the corporate bond market are more liquid (namely, larger bonds in the first month of issuance), liquidity as a whole has not kept pace with the market's growth, and breadth and depth has impacted the ability to execute trades of a certain size in as timely a manner as in the past.

Mortgage Related Securities

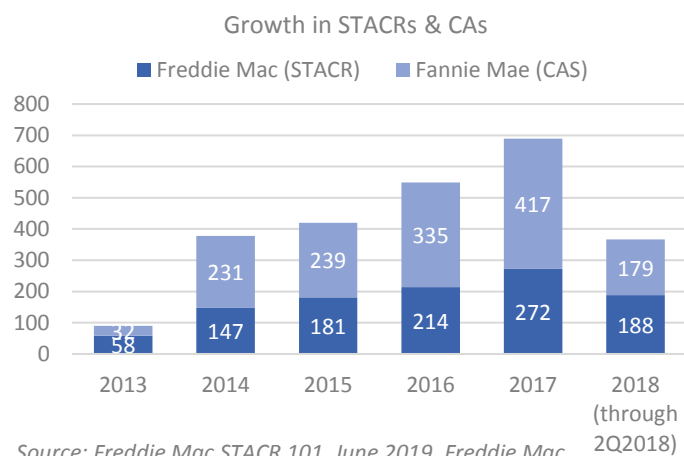
If we turn to the mortgage related market, mortgage backed securities have surpassed their pre- and immediate post-crisis highs in terms of notional outstanding. And volumes haven't quite kept pace, remaining largely range bound in recent years.²²



Source: SIFMA, NY Fed

But there have been new products that impact this – in 2013, Freddie Mac introduced Structured Agency Credit Risk (STACR) debt and Fannie Mae launched Connecticut Avenue Securities (CAS) – the first GSE credit risk transfer programs.²³

Growth in Credit Risk Transfer Note Market | STACRs & CAS

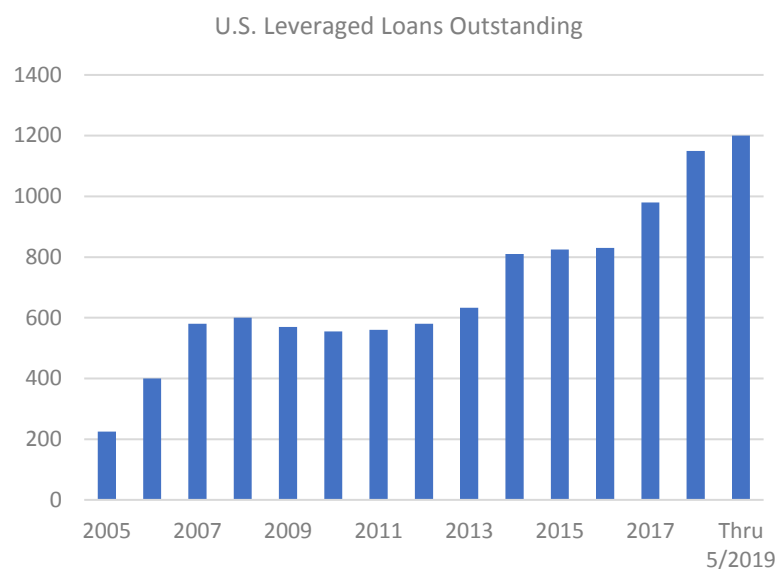


Liquidity of MBS and ABS also waned in the period after the global financial crisis, but has seen a rebound in recent years. After 2008, broker/dealer appetite for holding securitized products on their balance sheet declined, as they were one of the products to be treated more punitively from a balance sheet perspective in the new regulatory regime.

Change in Makeup of Mortgage Issuance Market²⁴

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Enterprise and Ginnie Mae ²⁵	62%	95%	97%	96%	98%	99%	98%	95%	95%	97%	96%	92%
Private Label	38%	5%	3%	4%	2%	1%	2%	5%	5%	3%	4%	8%

What About the Resurgence in CLOs and the Leveraged Loan Market?

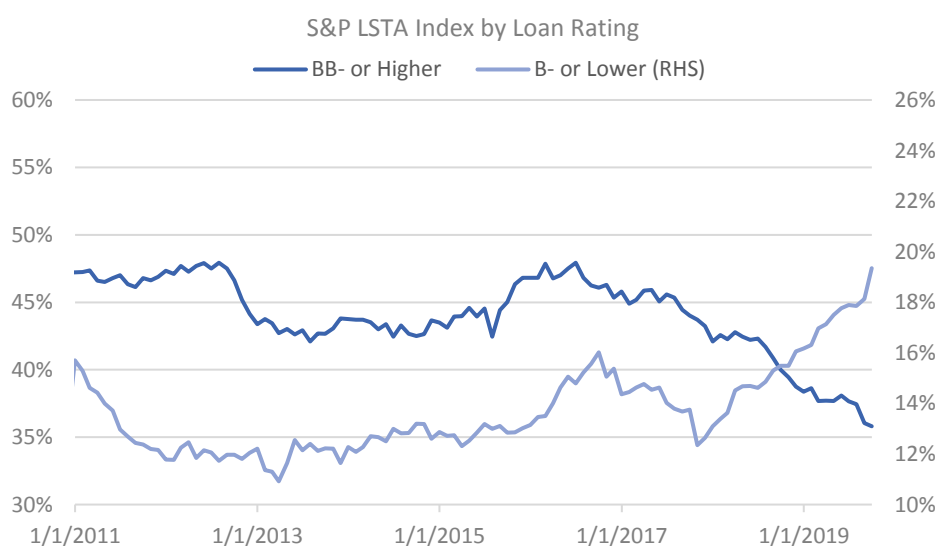


In recent years, the collateralized loan obligation (CLOs) market has witnessed a resurgence. Both market volume and transaction sizes have grown on the back of improved underlying collateral composition, global investors' continued hunt for yield and returns in a persistently low rate world, and enhancements in the CLO structures themselves (there are fewer tranches, on average, in today's CLOs, and often the subordinate retained portion can hover around 20% - meaningfully higher than pre-crisis levels). CLO issuance in 2017 was \$118 billion, with total issuance in 2018 marching higher and similar expectations for 2019.

Source: S&P Global Intelligence

The resurgence of CLO issuance coupled with the growth of loan mutual funds helped drive a doubling of the leveraged loan market in recent years as well, from a trough of below \$600mm in 2010 to a peak near \$1.2 trillion today. Overall, the leveraged loan market also now comprises more than 1,000 issuers – nearly double that in 2010.²⁶

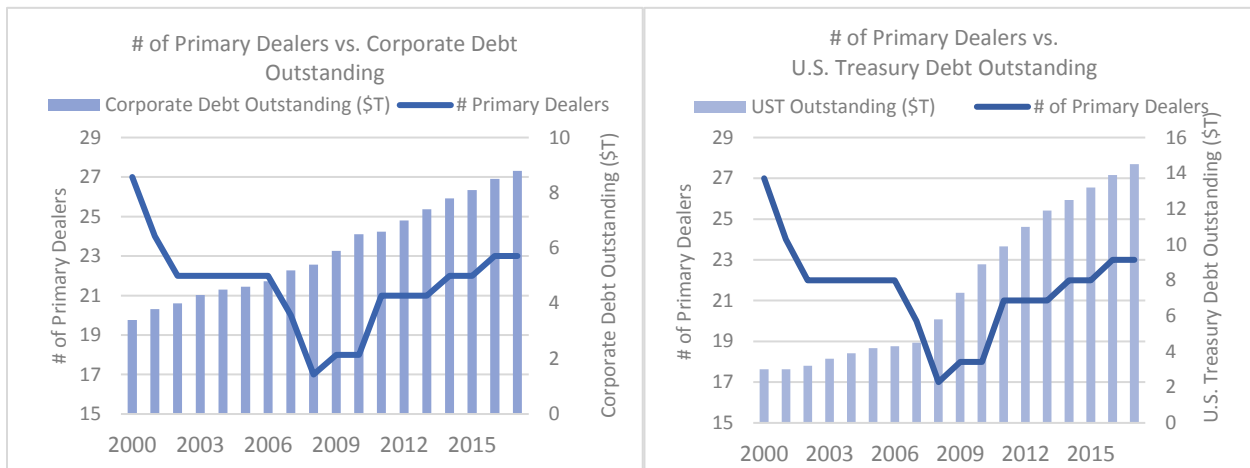
But we cannot discuss this space without also highlighting the decline in ratings quality over the last five years. This is a meaningful story, and has considerable relevance given the growth of the space and its evolution as an asset class. While it has grown materially, the decline in ratings quality can have meaningful implications for holders of these products and vehicles. Following record issuance in 2017 and 2018, issuance in 2019 has slowed somewhat, with just over \$107 billion issued in 2Q2019. At the same time, 'B-' or lower rated exposure has been on a fairly steep climb, nearly doubling over the last two years and surpassing 18% at the end of first half.²⁷



Source: S&P Global, Jefferies

Reported Liquidity and Drivers of These Shifts

An important point when digesting the above charts, is that **reported liquidity reflects “executed” liquidity**. These numbers do not capture those looking to execute and failing to do so. In the last decade, overall transaction costs and the time to execute transactions has grown. But bid/offer spreads have remained range bound. This is in part due to new market entrants and the shift from a principal trading model to a more hybrid agency/principal one. One driver we discuss later is the decline in primary dealers. The number of primary dealers has remained range bound as total outstanding and new issuance has grown. The number of primary dealers is a little more than half of what it was throughout the 1990s.²⁸



Source: SIFMA, Jefferies

However, these dealers have been joined by new entrants to the market – primary trading firms, non-bank market makers and other electronic venues.

Factors Shaping the Liquidity Profile of Fixed Income Markets

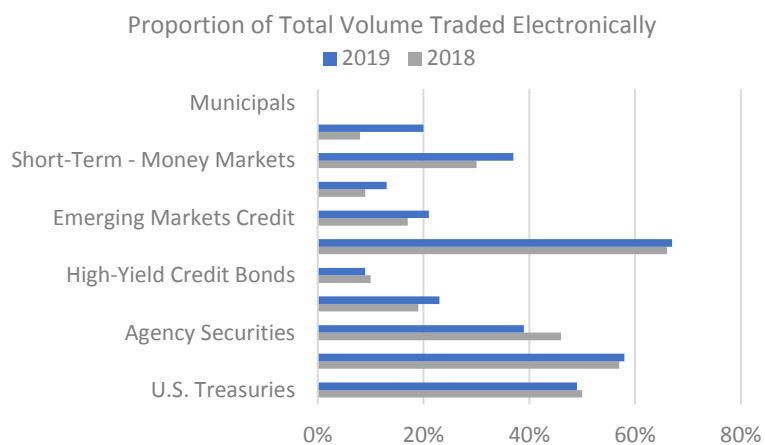
FACTORS SHAPING LIQUIDITY	MOST MATERIALLY IMPACTS	IMPACT ON FIXED INCOME LIQUIDITY
Shift from Principal to Agency/Principal Execution Model	<ul style="list-style-type: none"> • Repos • Treasuries • Corporate credit • MBS • ABS • Munis 	<ul style="list-style-type: none"> • New market entrants and market makers have helped maintain bid/offer spreads over last decade by offsetting negative impacts on broker/dealers' desire to engage in fixed income trading • At the same time, some broker/dealers have shifted their own business models to adopt an agency or agency/principal model – one factor in the shifting shape and availability of market depth • Rise of all-to-all trading technologies, facilitating alternative means to trading
Electronification	<ul style="list-style-type: none"> • Treasuries • Smaller lots of corporate bonds 	<ul style="list-style-type: none"> • Greenwich Associates reports that 26% of corporate bond trading is now conducted electronically in 3Q2018, up from 19% in 1Q2018 • UST most highly traded electronically, BUT • Impact thus far has been stronger on smaller trades
Regulation	<ul style="list-style-type: none"> • Repos • MBS/ABS • Corporate credit 	<ul style="list-style-type: none"> • Multiple regulations dampened broker/dealers' appetites for pre-crisis levels of fixed income trading. Volcker, Basel III, and specifically - capital adequacy rules like Liquidity Coverage Rules (LCR) and Net Stable Funding Ratios (NSFR) are far more punitive, requiring firms to hold more and higher quality capital and making different forms of fixed income trading more costly and balance sheet intensive
Rise of Fixed Income ETFs and Mutual Funds	<ul style="list-style-type: none"> • Corporate credit • Leveraged loans • Treasuries 	<ul style="list-style-type: none"> • Growth in fixed income ETFs and index products increases demand for certain fixed income products • Increase in loans related products have been a considerable area for growth

The rise of daily liquidity vehicles poses other questions for the durability of some fixed income liquidity profiles. With more than \$4 trillion in bond mutual funds, these daily liquidity vehicles that reflect underlying assets with divergent liquidity profiles can cause additional headaches, particularly in periods of acute stress.²⁹ Some of these products are at the highly standardized, more liquid end of the spectrum – with highly traded sovereigns or large issue corporate bonds as the underlying asset.

But others offer access to the high yield market or other corners of the fixed income landscape with liquidity profiles that could hardly be seen as “more liquid,” much less offering *daily* liquidity.

ON ELECTRONIFICATION: EARLY DAYS, BUT CONSIDERABLE IMPACT

One of the greatest shifts across the global fixed income markets over the last decade has been the move to electronification. And we are still in early days.



Intuitively, it makes sense that the more standardized corners of the fixed income market have higher rates of electronic execution. And it is a relatively small percentage of trades over a certain size threshold that are traded electronically as of today. The smaller the trade and more standardized the product, the more likely it is to be executed electronically. But the larger the trade and less standardized the product (for example, high yield credit bonds), are less likely to be executed electronically.³⁰

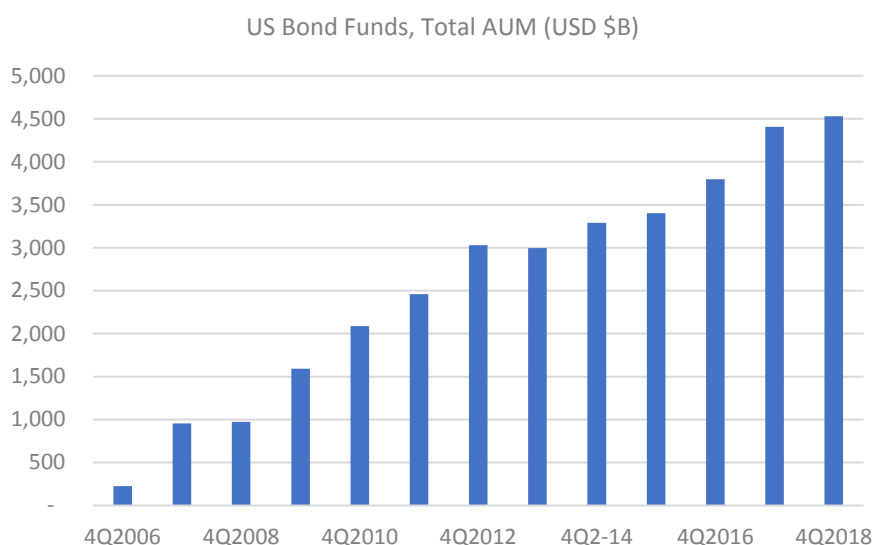
Source: Greenwich Associates

US Treasuries, while not quite reaching cash equity like levels of electronic execution, have grown the most rapidly. And many are advocating for further standardization of products *in order to facilitate greater electronification*.

Key drivers of the move to electronification have been:

1. **Technological advances** | As with nearly every other industry, fixed income market trading – while harder to facilitate electronically than equities because of the lack of standardization – has been squarely shaped by technological advances over the last decade. New algorithms and trading platforms increasingly facilitate both dealer to dealer (D2D) and dealer to customer (D2C) trading. While some types of fixed income products, particularly in the corporate credit realm, are still largely traded by voice OTC, even those are in the spotlight for increased electronification. Given the growth of fixed income ETFs focused on corporate credit, *shades* of electronification continue to grow in even the most idiosyncratic and heterogenous corners of the market.
2. **New market entrants and business models** | In part related to growth of electronification and regulation. In the post crisis era, regulation made fixed income trading and execution more balance sheet intensive. This drove broker/dealers to revisit their business models, shifting from a strongly proprietary one, to a more hybrid agency/proprietary market making model. Non-bank players and others like Tradeweb and MarketAxess are a growing part of the execution landscape
3. **Growing desire for transparency in fixed income execution** | Investors increasingly view electronification as a way to enhance transparency in their execution processes. Particularly in an era of heightened accountability and regulation, electronification can facilitate improved data and analytics around execution, allowing traders to more precisely understand the dynamics of their trades.
4. **Regulation** | Other than technological advances, regulation is one of the biggest drivers of electronification. Post crisis regulations that made fixed income trading and inventory much more balance sheet intensive made broker/dealers much more stringent and focused on what business and product lines they would continue to support – and to what degree, with how much balance sheet. This helped to open the door for new players and business models. Other regulations requiring enhanced transparency for trading and execution include MiFID II.

PRODUCT INNOVATION: ETFS, MUTUAL FUNDS, & THE ‘EQUIFICATION’ OF FIXED INCOME



Source: EPFR, Jefferies

The “move to passive” has been one of *the* blockbuster trends in the equity market over the last decade. Equity exchange traded funds (ETFs) still dwarf fixed income ones, but fixed income is a rapidly growing product set, and has the potential to be an even *larger* market than equity ETFs.³¹

There is currently about \$4 trillion in fixed income mutual funds and ~\$750 billion in global fixed income ETFs. This marks the first time that off-exchange fixed income products can be refashioned into highly liquid, exchange traded ones.³²

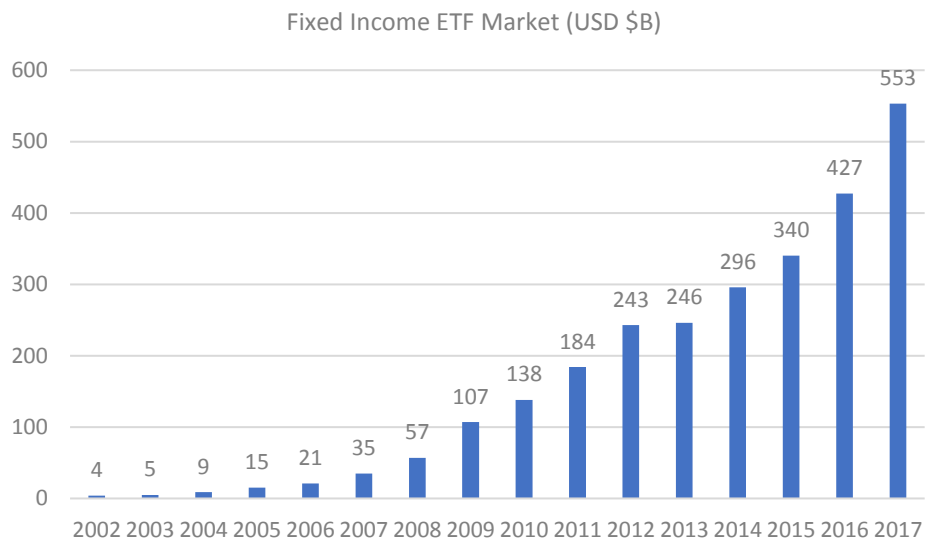
This rapid growth has implications for access, liquidity, arbitrage opportunities, price discovery, trading and expansion of the investor base. It has also prompted a material rise in quant and algorithmic traders to focus on intraday arbitrage opportunities between the price of the fixed income ETF and its underlying securities.

In a world where immediate access—to information, analysis, and execution—is increasingly a baseline expectation for market participants, it is no surprise that products offering daily liquidity like mutual funds, and indexed products like ETFs have proliferated in recent years. They provide both broad and targeted exposure to the market while giving investors the ability to increase, decrease, or altogether wind down their exposure in a day or less. As capital has poured into these funds, it has become increasingly crucial to consider the potential negative effects and systemic risks of products that make this promise.

On one hand, offering this level of liquidity is why ETFs and mutual funds could be one of the more exciting product innovations in recent memory. On the other, it could have disastrous results for shareholders and pose serious systemic risks to the broader market—especially in periods of acute stress, when these problems could be exacerbated.

At the broadest level: when a fund’s underlying assets do not boast daily liquidity in their own right—such as emerging market debt, levered loans or high yield bonds—the resulting “liquidity mismatch” may lead to acute stress in these markets in the event of a market downturn. Mass fund redemptions would create heightened demand for products that cannot be easily bought and sold.

In the event of a dramatic drawdown, market making in these daily liquidity products could diminish considerably. And global policymakers have dedicated considerable thought and resources to understanding how periods of acute stress may impact the trading and liquidity of these products (and their underlying assets) – and vice versa.



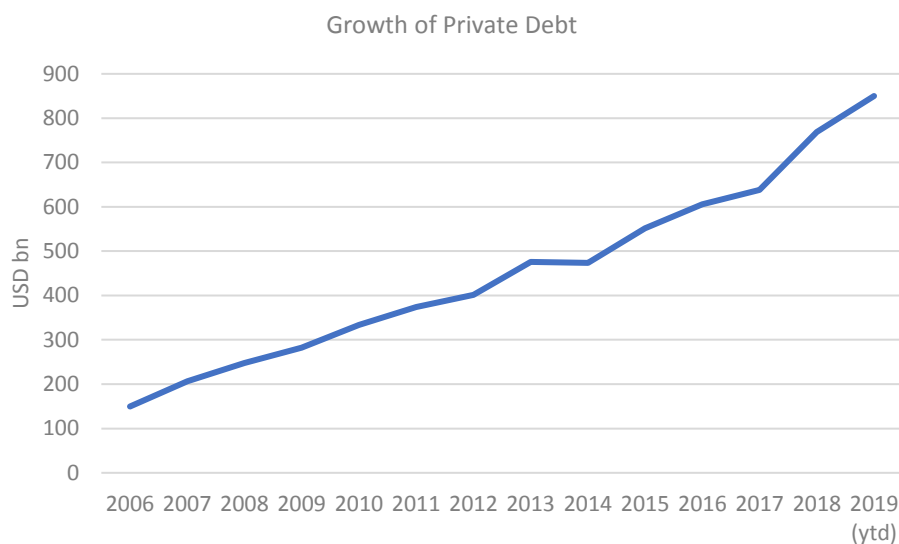
Source: SIFMA

Credit Portfolio Trading: Innovation Spurred by Innovation

A notable byproduct of the growth in ETFs has been the increase in credit portfolio trading – or the trading of baskets of fixed income securities. By leveraging the ETF creation and redemption process, dealers can lower execution costs and trade diversified baskets of credits much more easily than in the past. While the ETF creation and redemption process largely facilitated the advent of credit portfolio trading, technological improvements have also been necessary for pricing these baskets of securities much more efficiently and rapidly than before.

Private Credit: Growth in the *Other* End of the Liquidity Spectrum

Though not as actively traded as other products on the fixed income spectrum, we cannot discuss the changing landscape of these markets without touching on the massive growth of private credit. Spurred in part by the 2008 financial crisis and the aftermath that prompted banks to step back from private market lending – as well as favorable and persistently low interest rates that induced companies to seek loans from the private market – **private credit has grown almost tenfold since 2006.**



Source: Preqin, Bloomberg, Jefferies

As banks retreated from the lending market after the 2008 crisis, at the same time interest rates were at multi-decade lows, there was an opportunity for non-bank lenders to enter the market and provide financing. Private credit can take a few forms: direct lending, rescue lending, and business development companies (BDCs).

Direct lending is, as its name suggests, quite straightforward. Direct lending funds structure loans directly to the borrower alone, or alongside other institutions (club deals). Rescue lending (again, truth in advertising) structures loans to stressed businesses in order to help stabilize or help them grow. BDCs also lend money to troubled or fledgling companies – but do so through a closed end investment fund.

While many fixed income markets have grown overall – sovereign debt, corporate credit, and even mortgage- and asset-backed securities, where the wholesale innovation has come (other than STACRs and CAS) has largely been on both ends of the liquidity spectrum. Bond mutual funds and ETFs on the one hand, and private credit and lending on the other. The last innovation sits somewhere between the two, but remains smaller in size and impact thus far: green bonds.

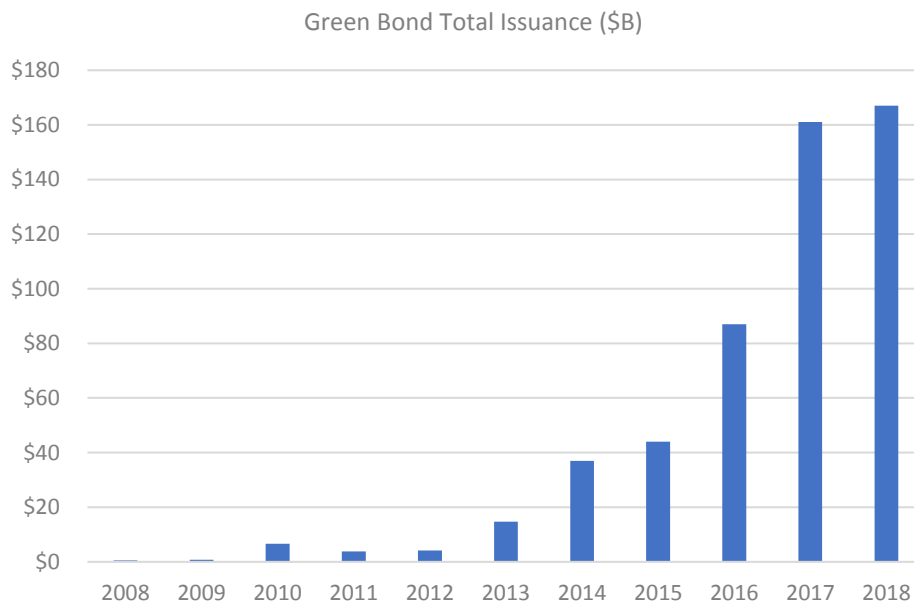
A Note on Green Bonds: Where Fixed Income Meets ESG

A newer corner of the market that has seen recent growth is green bonds, now valued north of \$680 billion globally.³³ These products sit at the intersection of fixed income and ESG—they are any bond issued to fund projects that positively affect the environment or climate. Globally, investors with trillions in managed assets have made public commitments to climate and responsible investing—of which green bonds can be a crucial part. In 2018, a record \$167 billion in green bonds was issued.

In 2014, as the green bond market picked up, a consortium of investment banks established the “Green Bond Principles.” This document calls for transparency and reporting around use of proceeds, the process for project evaluation and selection, the management of proceeds, and reporting around a green issue. These are voluntary best practices, but by and large they set a working definition for potential green project categories, including energy, buildings, water or waste management, or transport.

The majority of green bonds are asset-linked, meaning that they are earmarked for green projects but backed by the issuer’s entire balance sheet. Issuers must define why their bonds should be considered “green” and provide detail to investors pre-issue. They may also commission an external review on the green credentials of the use of proceeds. These reviews can take different forms and may occur either pre- or post-issuance.

Because issuers must track, monitor, and report on use of proceeds, green bonds usually carry an additional transaction cost. However, with the rise of interest in products that can be classified as ESG or otherwise sustainable and responsible, many issuers, especially repeat green bond issuers, find this initial cost to be offset by the positive follow-on effects to their business. These include highlighting their green business and assets, positioning themselves as a market leader—as well as a thought leader—in the ESG or Sustainability space, and growing and diversifying their investor base to include more ESG or Responsible Investing investors.



Source: Bloomberg NEF

WHAT DOES THIS MEAN AND HOW CAN JEFFERIES HELP

Given the massive shifts in the global fixed income markets across: types of market participants, methods of execution, liquidity fragmentation, depth of market, and growth in product innovation, the implications for portfolios and investors are considerable. It is more important than ever to be fully cognizant of how these changes impact individual positions and hedging strategies. Among the most critical takeaways:

1. **Electronification is here.** E-trading is not only coming, it's here, and figuring out how to participate effectively is a key issue for everyone in the market. While this is much further along in the Equity markets – it's actually *because* fixed income markets remain earlier in the adoption cycle that efficiencies and arbitrages exist in this space.
2. **Breadth and depth have declined across markets.** We all have to account for that in how we trade – and it can matter even more in liquidity challenged environments. Active trading positions need to go where the liquidity is: focus on smaller trade sizes in new issues that actually trade. Chunkier and more “off the run” situations need to be treated with the requisite illiquidity assumption and this is where savvy partners can add a lot of value.
3. **The growth of the retail holdings** of US fixed income are massive structural changes, and this is happening at the same time that intermediary capacity for risk-taking is lower. The evidence of both of these trends is compelling, and means that the market needs to be more wary than ever about the risk of matching longer tenor less liquid assets and daily liquidity liabilities. Periodic “runs on the bank” are an obvious risk (and likely opportunity). This also likely means that fixed income will be a larger “Main Street” topic of conversation this cycle.
4. **The “barbell” of growth in both the very liquid (ETFs, mutual funds) and illiquid (private credit/direct lending) segments of credit markets** is real and a fascinating dynamic. In some ways both are a natural consequence of heightened regulation. But both of these mega trends seem likely to continue and market participants should act accordingly.
5. **The growth of Green Bonds has considerable momentum.** This is another trend that is likely to accelerate, creating both substantial investment opportunities (Green projects, etc.) and business opportunities/risks (ESG mandates, etc.). Understanding and taking advantage of this trend could offer considerable opportunities.

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Endnotes

- ¹ SIFMA [Fixed Income Market Structure Primer](#)
- ² Preqin, Bloomberg, Jefferies
- ³ Visual Capitalist, SIFMA, EFPR, Jefferies
- ⁴ Greenwich Associates
- ⁵ SIFMA [Fixed Income Market Structure Primer](#), NY Federal Reserve
- ⁶ SIFMA, TRACE, Jefferies.
- ⁷ SIFMA, [Federal Reserve](#)
- ⁸ SIFMA [Fixed Income Market Structure Primer](#)
- ⁹ SIFMA [Fixed Income Market Structure Primer](#)
- ¹⁰ SIFMA [Fixed Income Market Structure Primer](#), Preqin, Jefferies
- ¹¹ SIFMA [Fixed Income Market Structure Primer](#)
- ¹² Bank for International Settlements, “Fixed Income Market Liquidity,” 2016. <https://www.bis.org/publ/cgfs55.pdf>
- ¹³ New York Federal Reserve Board
- ¹⁴ [Greenwich Associates](#)
- ¹⁵ The Liquidity Hierarchy in the U.S. Treasury Market, [CFTC](#)
- ¹⁶ The Liquidity Hierarchy in the U.S. Treasury Market, [CFTC](#)
- ¹⁷ Analysis of Corporate Bond Liquidity, Bruce Mizrach, [FINRA](#)
- ¹⁸ SIFMA
- ¹⁹ JP Morgan, BlackRock, TRACE, Jefferies
- ²⁰ [Greenwich Associates](#)
- ²¹ NY Fed, SIFMA, FINRA, TRACE, Jefferies
- ²² SIFMA, NY Fed
- ²³ Credit Risk Transfer Progress Report, [FHFA](#)
- ²⁴ Freddie Mac STACR 101, June 2019, [Freddie Mac](#)
- ²⁵ Freddie Mac STACR 101, June 2019, [Freddie Mac](#)
- ²⁶ [S&P Global](#), Jefferies
- ²⁷ [S&P Global](#), Jefferies
- ²⁸ SIFMA
- ²⁹ EPFR, Jefferies
- ³⁰ Greenwich Associates
- ³¹ EPFR, Jefferies
- ³² SIFMA
- ³³ [Environmental Finance Bond Database](#)