

BlackRock

Turning point

How volatility and performance in 2020 accelerated institutional adoption of fixed income ETFs

July 2020

Capital at risk: The value of investments and the income from them can fall as well as rise and are not guaranteed. Investors may not get back the amount originally invested.



Foreword



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Most of the 30-year history and growth of exchange traded funds (ETFs) has been a story of equities. But fixed income ETFs have captured the attention of some of the world's largest investors as they continue to modernise the bond markets and increase transparency, convenience and accessibility. It's exactly what iShares set out to do when we launched the first fixed income ETFs in 2002.

Wealth managers and multi-asset investors were among the first significant adopters. They saw that fixed income ETFs could help them access parts of the bond market at good value and help build better portfolios for individual investors.

For years, both asset managers and asset owners used fixed income ETFs more at the margin – for tactical allocations or temporary exposure to a hard-to-access asset class. Some were put off by fixed income ETFs' relative adolescence. And, while fixed income ETFs performed under various stresses over the past decade, others theorised about what might happen in the event of a true shock.

Then the COVID-19 health crisis materialised in the first half of 2020, rattling economies and bond markets around the world. Liquidity, price discovery, usage and transaction costs were severely challenged across multiple asset classes in the bond markets, from high yield and investment grade corporates to emerging markets and even – for a brief period – US Treasuries.

It was the long-awaited test for fixed income ETFs – they passed. Through the stresses, the largest and most heavily traded fixed income ETFs performed as our institutional clients hoped they would, by providing more liquidity, greater transparency and lower transaction costs than the underlying bond market.

July 2020 marks the 18th birthday of the first iShares fixed income ETFs, a symbolic passage into adulthood. More than ever, we are optimistic about the future of fixed income ETFs, not just in terms of growth, but in their ability to deliver better outcomes for wealth managers, asset managers and asset owners globally.

Introduction

In the extreme financial asset volatility in the first half of 2020, the largest and most heavily traded fixed income ETFs performed a critical role and demonstrated that they are integral to efficient bond markets.

In their biggest test to date, the most heavily traded fixed income ETFs provided deep liquidity, continuous price transparency and lower transaction costs than were available in individual bonds. The ability to buy and sell portfolios of bonds held in ETFs helped investors navigate extreme price dislocations and sidestep a legacy marketplace that remains fragmented and comparatively difficult to access even for institutional investors. In many cases, institutional investors chose to use fixed income ETFs rather than fixed income derivatives.

As a result, asset owners — including pension funds and insurance companies — and asset managers ramped up adoption. In recent months, these large investors have increased their use of fixed income ETFs at scale, regularly with positions sized in the hundreds of millions of dollars, as substitutes for individual bonds and fixed income instruments. Globally, BlackRock counted over 60 asset owners and asset managers that were first-time buyers of iShares fixed income ETFs in the first half of 2020. We estimate this group collectively added about \$10 billion in assets.

There is significant room for fixed income ETF asset growth as adoption by institutional investors accelerates. Global fixed income ETF assets accounted for US\$1.3 trillion at the end of June 2020 after growing 30% in just one year; still, ETFs represent only about 1% of the US\$100 trillion global fixed income securities market.¹ Bolstered by recent adoption patterns, BlackRock believes that institutional investors will help expand global fixed income ETF assets to US\$2 trillion by 2024.²

This paper provides the facts around how fixed income ETFs performed during the severe market conditions of early 2020. It also provides examples of how some of the leading active asset managers, insurance companies and pension funds globally are using fixed income ETFs in an effort to improve outcomes for their clients.

“ There is significant room for fixed income ETF asset growth as adoption by institutional investors accelerates.”

1 Source: BlackRock, Bloomberg (as of 30 June 2020). **2** BlackRock, “Primed for Growth: Bond ETFs and the Path to \$2 Trillion,” June 2019; global bond ETF assets were US\$1.322 trillion (as of 30 June 2020). **There is no guarantee that any forecasts made will come to pass.**

Fixed income ETFs shined in 2020's market volatility

The onset of the pandemic triggered unusual disruptions across fixed income markets and led to an uptick in activity for fixed income ETFs – which iShares pioneered in 2002.

While the transparency, liquidity and efficiency of on-exchange trading had already proven valuable to fixed income investors during multiple periods of market stress over the past decade, certain market participants continued to theorise about what might happen should fixed income ETFs be tested by a monumental market shock. They raised questions about whether ETFs would be able to withstand the pressure of continuous selling, and whether they might exacerbate price declines in the underlying markets.

The results were clear: fixed income ETFs not only held up under stress, but they also became important tools for market participants by offering immediate trading at transparent prices, a combination that was often not available with individual bonds.

Institutions turned to the most liquid fixed income ETFs as sources of real-time price discovery and cost-efficient execution when transparent quotations and liquidity had sharply deteriorated in individual bonds.

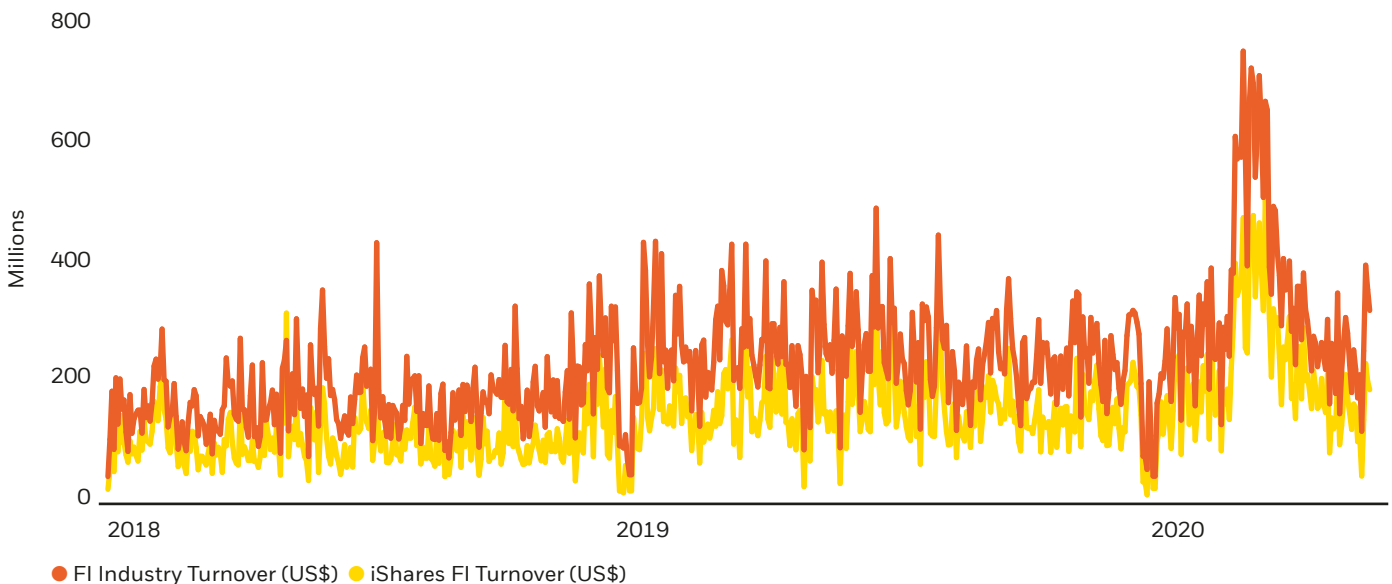
When volatility struck, fixed income ETF trading surged

Investors have always tended to use fixed income ETFs even more during times of uncertainty because they are efficient and effective tools for rebalancing holdings, hedging portfolios and managing risk. From late February through late March 2020, iShares UCITS fixed income ETF trading surged to US\$17.5 billion on average, more than twice the 2019 weekly average of US\$7.8 billion.³

Trading volume in UCITS high yield fixed income ETFs averaged as much as US\$620 million per day in March 2020 with US\$13.4 billion traded in total over the month. For comparison, high yield UCITS ETFs averaged US\$290 million per day in 2019.⁴ The trend was similar in UCITS investment grade corporate ETFs where trading in March 2020 averaged US\$1.67 billion per day, giving a monthly total of US\$36.3 billion compared to US\$740 million daily average in 2019.⁵

In both high yield and investment grade, as markets became more volatile, investors turned to fixed income ETFs.

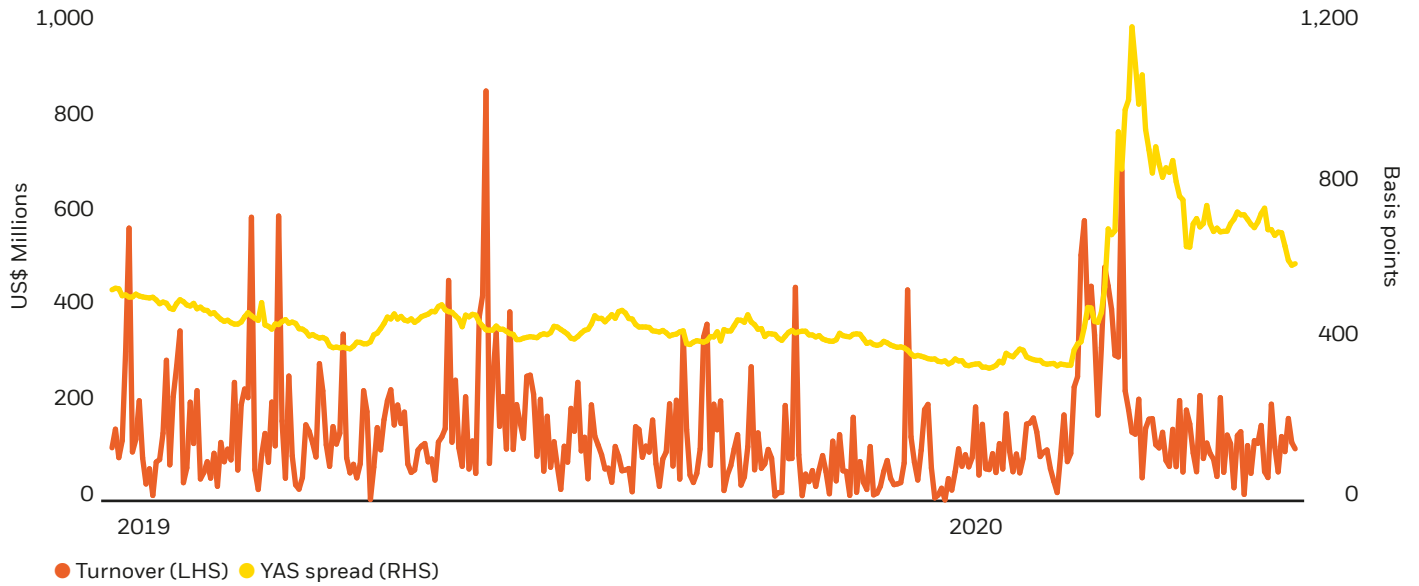
Figure 1: Fixed income ETFs saw a huge spike in secondary market trading volumes in March 2020



Source: BlackRock, Bloomberg as of 29 May 2020.

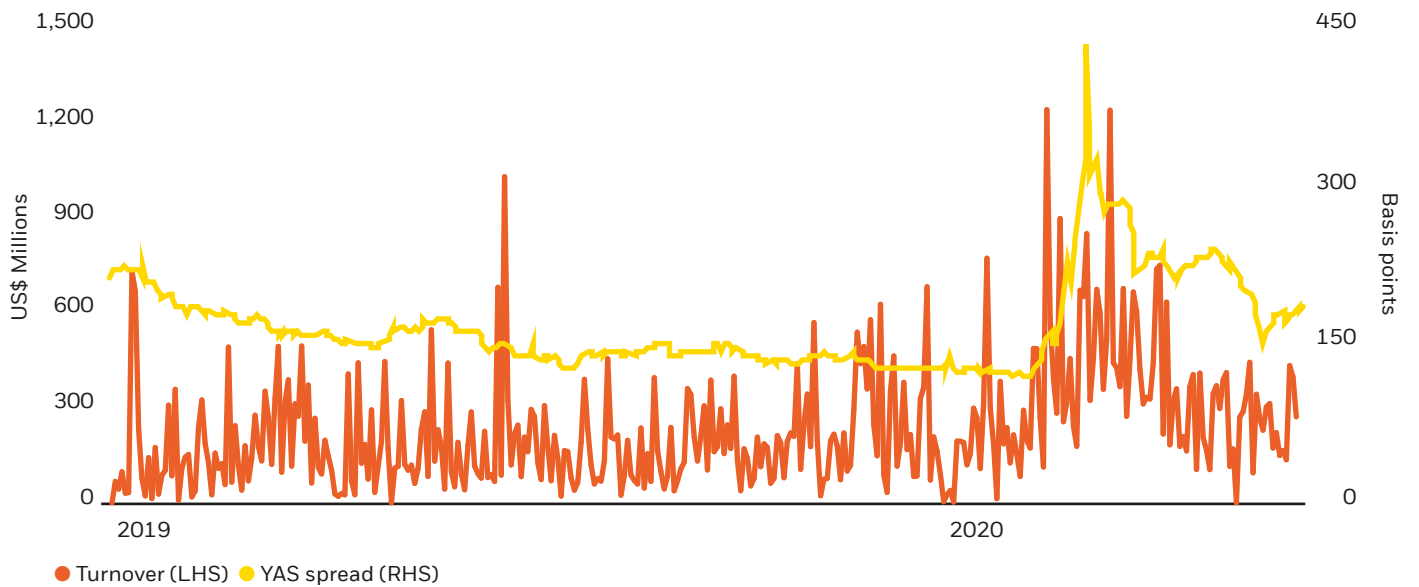
3 Bloomberg (as of 20 March 2020). US\$17.5 billion on average uses period from 21 February 2020 – 20 March 2020. **4** BlackRock, Bloomberg (as of 20 March 2020). **5** BlackRock, Bloomberg (as of 20 March 2020).

Figure 2: iShares € High Yield Corp Bond UCITS ETF (IHYG) turnover increased in late February through late March as high yield credit spreads spiked



Source: BlackRock, Bloomberg (as of 31 May 2020). Turnover based on daily trading volumes.

Figure 3: iShares Core € Corp Bond UCITS ETF (IEAC) turnover increased in late February through late March as high yield credit spreads spiked



Source: BlackRock, Bloomberg (as of 31 May 2020). Turnover based on daily trading volumes.

Amid increased trading, fixed income ETFs were indicators of real-time, actionable prices

Many fixed income ETFs traded hundreds of millions of dollars per day during the peak of 2020's early-year market volatility.⁶ This was far more often than even the most heavily traded corporate bonds.

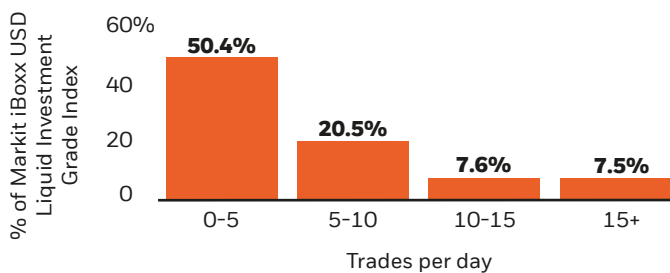
On 12 March, one of the worst days for equity markets in modern history and a day during which credit markets sold off sharply, the iShares \$ Corp Bond UCITS ETF (LQDE) traded almost 1,000 times on exchange compared with just 37 times on average for its largest five bond holdings.⁷

Throughout March, more than half of LQDE's bonds traded between zero and five times per day, on average, while the ETF traded more frequently than the bonds in the underlying portfolio.

High trading volumes support the notion that fixed income ETFs provided actionable prices for investors at a time when the underlying bond market was challenged. The on-exchange market prices for fixed income ETFs reflected both absolute and relative value and helped enable investors to understand rapidly changing market conditions.

Because they offer real-time pricing and trade often, fixed income ETFs are now central to valuation, portfolio construction and risk management for institutional investors. In particular, fixed income ETFs have emerged as benchmark references for returns, volatility and market sentiment.

Figure 4: Trading activity in LQDE universe, March 2020



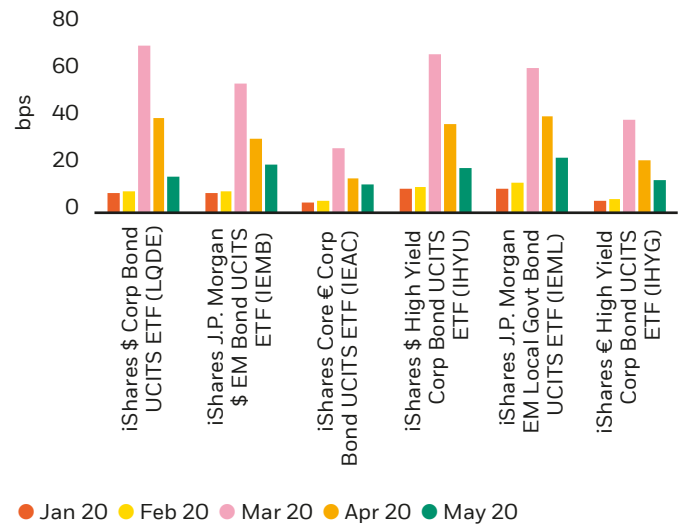
Source: FINRA TRACE, BlackRock from 2 March 2020 to 20 March 2020. Includes only end investor buys and sells – not dealer-to-dealer trades.

ETF spreads widened in line with elevated costs to trade the underlying bonds

During the period of volatility from end of February through March 2020, market makers widened their bid ask

spreads on fixed income ETFs across the board. This was almost entirely driven by elevated costs to trade against the backdrop of exceptionally high intra-day volatility in rates and credit markets, coupled with the lack of liquidity in underlying cash bond markets.

Figure 5: Bid-ask spreads widening since the volatility started, across several flagship iShares fixed income UCITS ETFs

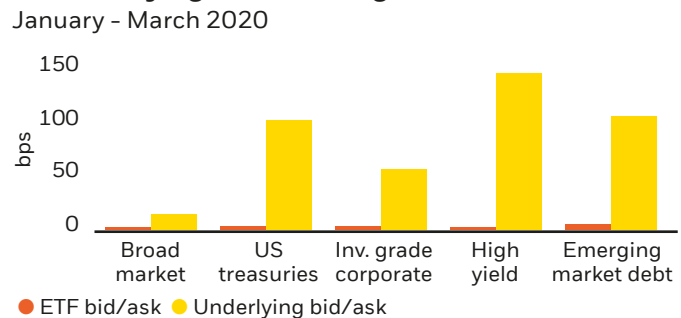


Source: Bloomberg (as of 20 March 2020).

Not only did fixed income ETF prices reflect real-time value, but US-domiciled 40 Act ETFs also had lower execution costs than were available in individual bonds

While bid/ask spreads for US-domiciled fixed income ETFs did increase somewhat during this period of market volatility, they remained lower for iShares flagship ETFs than for individual bonds and bond portfolios across sectors.

Figure 6: Bid-ask spreads of US-domiciled 40 Act fixed income ETFs were significantly lower than for underlying bonds during Q1 2020



Source: Bloomberg, BlackRock. Average spreads the first quarter of 2020.

⁶ BlackRock, TRACE (as of 13 March 2020). ⁷ Blackrock, TRACE (as of 24 March 2020).

“ We have long used fixed income ETFs for tactical positioning, hedging, and liquidity management. During this recent crisis, fixed income ETFs were an invaluable technology that enhanced our ability to navigate these challenging markets.”

- Rick Rieder, BlackRock's Chief Investment Officer of Global Fixed Income

“ Since the March volatility, Tradeweb has seen sustained higher trading volumes in fixed income ETFs. There has been a greater understanding and acceptance that fixed income ETFs provide efficient access to the underlying cash bond markets for pricing, data and analytics and trading.”

- Enrico Bruni, Head of Europe and Asia, Tradeweb

“ Not only have fixed income ETFs become key reference points in the investment process by identifying market opportunities, but they have also become critical tools for executing investment strategies.”

- Alex Claringbull, BlackRock's Global Head of Index, iShares, Core PM & LDI within Global Fixed Income

Case studies in institutional adoption

For asset owners and asset managers, the ability to adjust fixed income exposures efficiently is mission critical. Recent volatility demonstrated that managing fixed income allocations through individual bonds can be challenging.

During the worst of the market turmoil in February and March 2020, fixed income ETFs became central to the investment decision-making process for a growing number of institutional investors. Given the lack of liquidity and price discovery in the underlying markets, portfolio managers and traders used fixed income ETFs to understand rapidly changing market conditions; to help price individual bonds and portfolios; to determine absolute and relative value opportunities that underpin allocation decisions; to implement decisions rapidly and efficiently; and to hedge unwanted risk.

What follows are four examples that highlight why and how institutional investors pivoted to fixed income ETFs during the extraordinary market volatility, and how fixed income ETFs are like a technology that can potentially offer flexibility, lower trading costs and the convenience of market access.

An evolving role for fixed income ETFs on the 'sell side'

The "sell side" has been integrating fixed income ETFs into their infrastructure and workflow over the past decade. Today, fixed income ETFs are increasingly used by market makers and broker-dealers to manage inventory levels, to price individual bonds and bond portfolios, to facilitate large client-driven trades and to hedge swap and option books.⁸ Many trading desks now have integrated risk-taking functions to facilitate trading across different "portfolio" instruments, including ETFs, total return swaps (TRS), credit default index swaps (iTraxx/CDX). This structure has helped to create trading efficiencies across the various "beta" products, particularly fixed income ETFs.

⁸ BlackRock, "Modernisation of the Bond Market," June 2019.

1 Liquidity management

The buyer

An asset manager makes a short-term allocation of EUR150 million to iShares € High Yield Corp Bond UCITS ETF (IHYG).

Background

Asset managers need liquidity to fund subscriptions and redemptions while remaining invested to avoid cash “drag” that often leads to underperformance. The certainty of execution matters most in assets such as high yield bonds, where transacting in individual securities can be time-consuming and expensive.

The challenge

Following the selloff in March, the asset manager wanted to improve the liquidity of the portfolio while maintaining the desired asset allocation in EUR-denominated high yield credit. The existing portfolio consisted of single line bonds, but as liquidity in the underlying high yield bond market become more challenged during March, the asset manager was looking for a tool that would allow them to stay exposed to the market while helping to manage flows in the fund.

The traditional approach

Traditionally, high yield bond fund portfolio managers created liquidity tiers, or “sleeves,” using the most liquid securities within a given asset class and cash-like instruments including money market funds.

The fixed income ETF approach

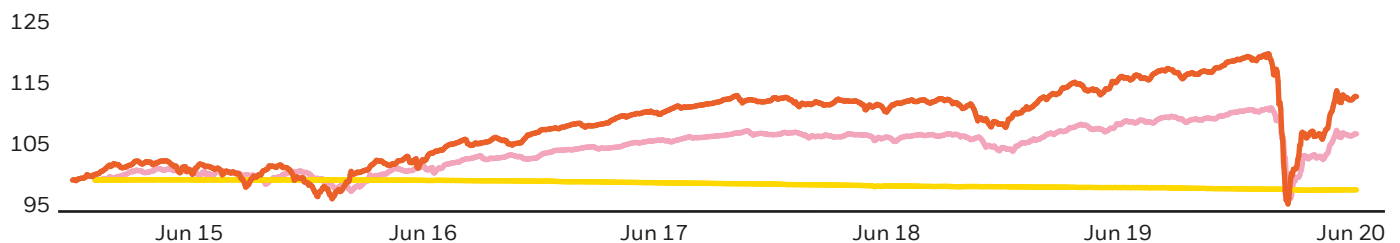
The asset manager assessed iShares € High Yield Corp Bond UCITS ETF (IHYG) as a tool to replicate their portfolio, while efficiently managing risk and liquidity. Average daily trading volumes in IHYG rose to US\$262 million in March with the largest volume day seeing US\$695 million (13 March) (vs 2019 average: US\$133million). While spreads on IHYG widened in March (to 42bp from 5bp in January), they remained well inside where the underlying market was trading. By April, spreads had halved to 22bp.⁹

By using IHYG in their liquidity sleeve, this asset manager avoided cash drag, added liquidity and cost efficiency and created operational scale to rebalance allocations.

Combining high yield index returns and short dated EUR government bonds has less cash drag

Index performance	1 July 2019 to 30 June 2020	1 July 2018 to 30 June 2019	1 July 2017 to 30 June 2018	1 July 2016 to 30 June 2017	1 July 2015 to 30 June 2016
Markit iBoxx EUR Liquid High Yield Index (IBOXXMJA)	-2.92%	4.65%	0.19%	7.75%	1.14%
Bloomberg Barclays Euro Short Treasury (0-12 Months) Bond Index (LA09TREU)	-0.38%	-0.28%	-0.51%	-0.43%	-0.09%

Source: Bloomberg, as of 30 June 2020. **The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.**



● Markit iBoxx EUR Liquid High Yield Index (IBOXXMJA) ● Bloomberg Barclays Euro Short Treasury (0-12 months) Bond Index (LA09TREU)
● Blend (60% IBOXXMJA/40% LA09TREU)

Source: Bloomberg, returns by index, cumulative returns from 31 December 2014 - 30 June 2020. Index performance is for illustrative purposes only. Index performance does not reflect any management fees, transaction costs or expenses. **Indices are unmanaged and one cannot invest directly in an index.** An investment in fixed income funds is not equivalent to and involves risks not associated with an investment in cash.

⁹ BlackRock, Bloomberg (as of 30 April 2020).

2 Strategic asset allocation

The buyer

An insurer adds a long-term EUR125 million allocation to iShares Core € Corp Bond UCITS ETF (IEAC) to its strategic asset allocation.

Background

A recently established insurer had been rapidly increasing their assets through acquisitions. In May, they were looking to implement a change to their strategic asset allocation, adding European investment grade credit as a diversifier to their portfolio.

The challenge

The insurer was looking for a long-term allocation and examined various wrappers, including ETFs, Index Mutual Funds and active funds. Finding individual investment grade bonds was difficult because liquidity and new issuance dried up in February and March 2020.

The traditional approach

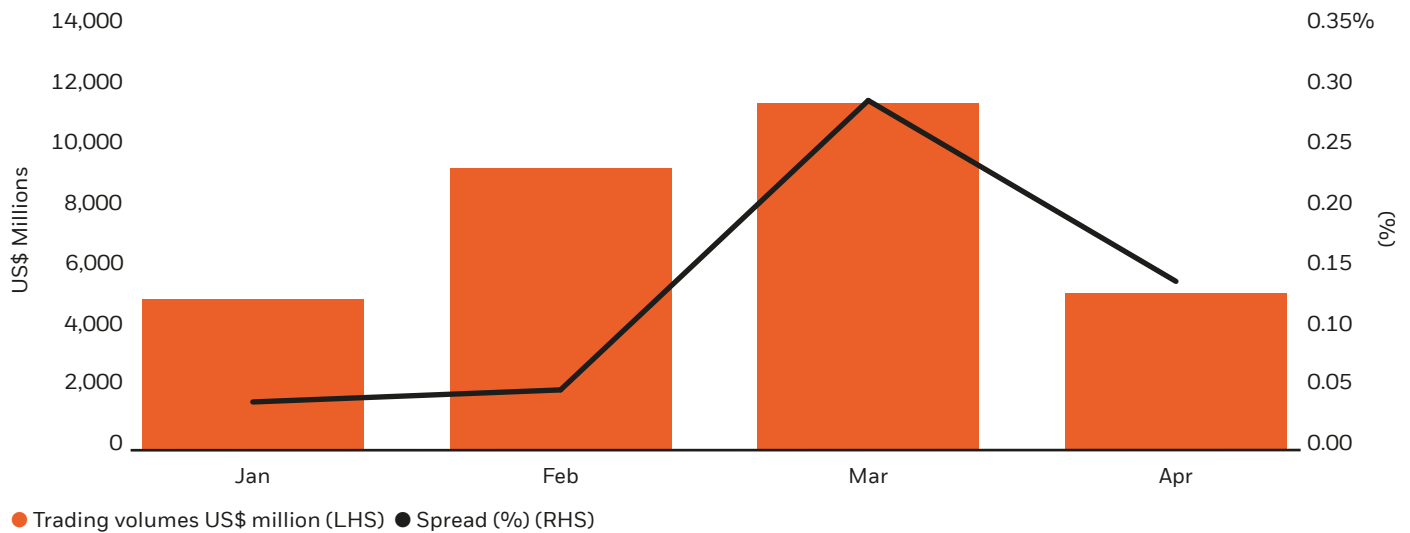
The insurer would typically look at using Index Mutual Funds or active funds to source this exposure.

The fixed income ETF approach

The insurer was comforted by IEAC's liquidity characteristics and the estimated total cost of ownership of the fund. The ETF provided broad exposure to the desired asset class through an instrument able to deliver the liquidity they needed at an attractive overall cost. This enabled the firm to have the ability to adjust the position around the edges on a regular basis and at an attractive cost of execution, despite EUR-denominated investment grade credit being a strategic holding.

Efficient access to investment grade bonds with IEAC

Bid/ask spread comparison



Source: BlackRock, Bloomberg (as of 30 April 2020).

3

Tactical asset allocation

The buyer

An asset manager, looking to re-risk in rapidly changing market conditions, targeting emerging markets.

Background

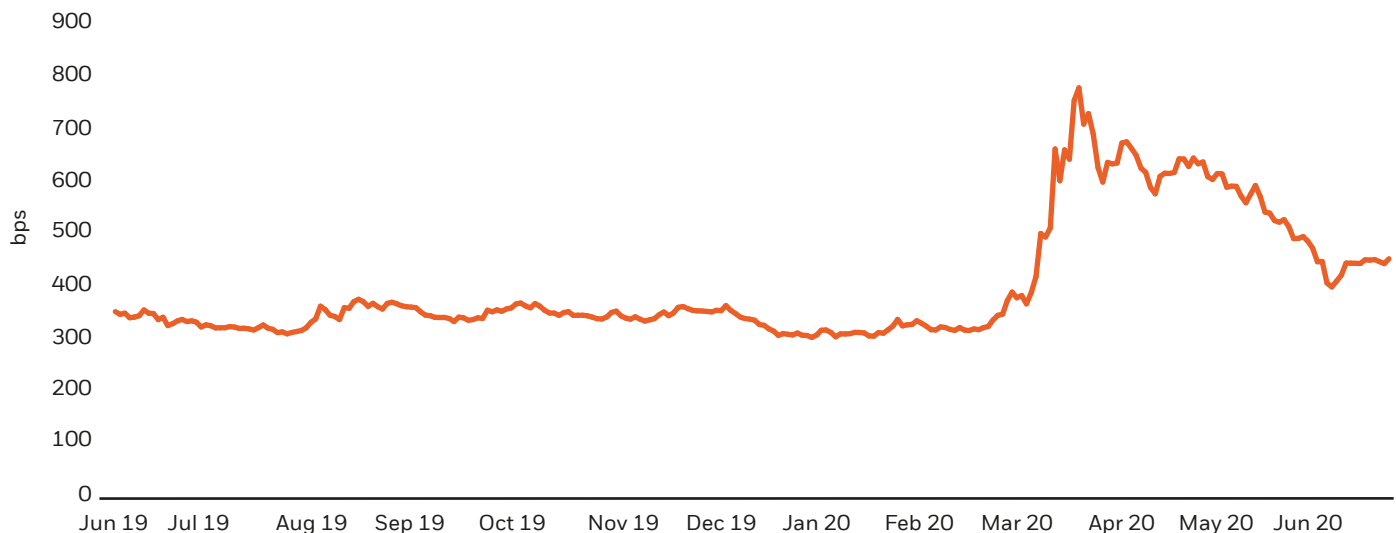
Following the market selloff in March 2020, an asset manager held the view that USD-denominated emerging market debt had been oversold (the J.P. Morgan EMBI Global Core index saw a drawdown of -22.4% between 24 February and 19 March 2020¹⁰), and that the selloff had been exaggerated by a drop in liquidity in underlying bond markets. The investor wanted to add risk on a tactical basis, in an instrument that was sufficiently liquid to facilitate a large trade size.

The challenge

The price dislocations in March 2020 across the fixed income markets presented opportunities to many investors in areas including emerging markets.

Opportunities with emerging marketing bonds as IEMB's credit spread widened

IEMB credit spread



Source: BlackRock, Bloomberg (as of 31 May 2020).

The traditional approach

Typically, the asset manager would use a derivative to implement such a sizable allocation.

The fixed income ETF approach

The iShares J.P. Morgan \$ EM Bond UCITS ETF (IEMB) tracking the benchmark J.P. Morgan EMBI Global Core Index was preferable to the investor relative to the derivative alternative. The investor was comforted by the liquidity of the ETF during the volatile weeks of February and March 2020, the cost-effective execution relative to trading the underlying bonds and the broad exposure to the asset class. They made a short-term allocation of US\$210 million notional to IEMB.

¹⁰ Source: BlackRock, J.P. Morgan (as of 19 March 2020).

4 Derivative replacement

The buyer

A pension fund looks beyond Credit Default Swap (CDS) indices to stake a position in a fixed income ETF.

Background

The pension fund wanted to tactically allocate to EUR-denominated credit. Given the volatility seen in markets during February and March 2020, the investor was looking for a liquid instrument to enable them to trade tactically while gaining broad, diversified exposure in line with their benchmark.

The challenge

In credit, investors frequently use CDS indices to express tactical short-term views – a decision historically driven by the perceived incremental liquidity benefits in CDS instruments compared to ETFs.

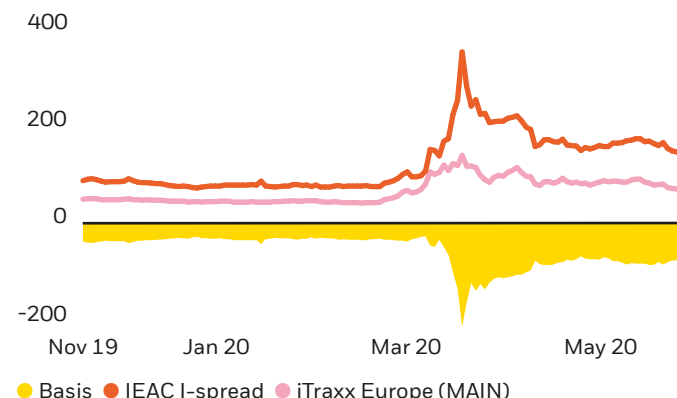
The fixed income ETF approach

Due to widening basis between cash bonds and CDS during the March selloff, ETFs looked attractive on a relative value basis. In addition, the investor was looking

for an instrument that more closely matched their bond portfolio characteristics, in terms of sector and quality dispersion. The investor traded EUR 230 million in iShares Core € Corp Bond UCITS ETF (IEAC).

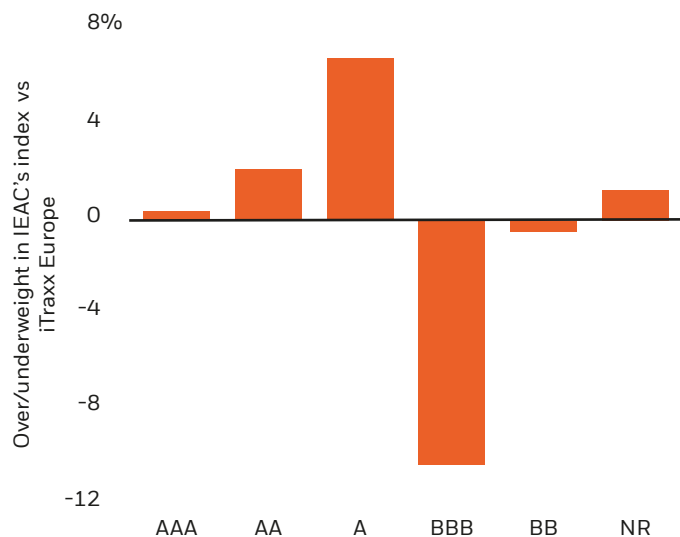
ETF and derivative spreads send a signal for investors

Spread between iTraxx Europe and IEAC I-spread (bps)

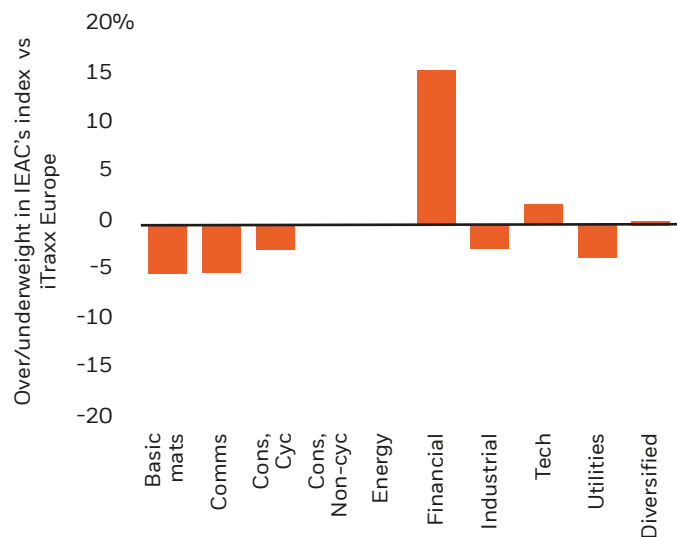


Source: BlackRock, Bloomberg (as of 30 May 2020). IEAC's index is the Bloomberg Barclays Euro Corporate Bond Index.

Relative quality weights (%) in IEAC's index vs iTraxx Europe



Relative sector weights (%) in IEAC's index vs iTraxx Europe



Source: BlackRock, Bloomberg (as of 30 May 2020). IEAC's index is the Bloomberg Barclays Euro Corporate Bond Index.

Conclusion

An eruption of market volatility in early 2020 touched nearly every corner of the fixed income markets. For institutions, the episode highlighted that the over-the-counter bond market remains relatively opaque and fragmented, despite improvements made in recent years.

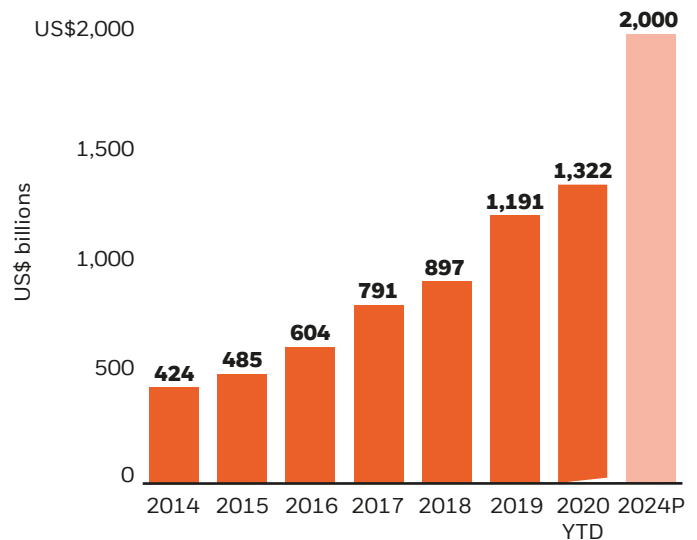
By contrast, the largest and most heavily traded fixed income ETFs illustrated the important role that they play in both normal and stressed market conditions by providing invaluable price discovery and liquidity. These attributes helped institutional investors understand and navigate rapidly changing market conditions at a time when it was needed most. It also showed that the most heavily traded fixed income ETFs are essential to the functioning of healthy fixed income markets, where buyers and sellers can exchange risk efficiently.

For pensions and insurance companies, fixed income ETFs provided a means to reduce complexity and streamline portfolio construction and risk-management practices. For asset managers, fixed income ETFs served as rapid and efficient tactical allocation tools and as liquidity sleeves to minimise trading frictions and reduce the potential for holding cash to harm returns.

Recent trends underscore BlackRock’s view that institutional investors will propel future fixed income ETF growth, which remains just a fraction of total global fixed income assets. We reaffirm our projection from a year ago that global fixed income ETF assets will double, to US\$2 trillion, by 2024, aided by the important role that fixed income ETFs are playing in the modernisation of fixed income market structure, the evolution of portfolio construction and constant product innovation.¹¹

Indeed, the pace of growth could be faster than we expect. In the year since we made this projection, when fixed income ETF assets crossed US\$1 trillion in assets, assets grew by more than 30% – nearly all of which was organic growth. As more asset managers and asset owners embrace fixed income ETFs as an efficient, transparent and convenient way to access the bond market – especially in times of volatility – the prospects for growth will only look brighter.

Global fixed income ETF assets set to reach US\$2 trillion by 2024



Source: BlackRock, “Primed for Growth” 2019; global bond ETF assets as of 30 June 2020. **There is no guarantee that such forecast will come to pass.**

¹¹ BlackRock, “Primed for Growth: Bond ETFs and the Path to \$2 Trillion,” June 2019; global bond ETF assets were US\$1.322 trillion (as of 30 June 2020).

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iShares \$ Corp Bond UCITS ETF USD (Dist)

Counterparty Risk, Liquidity Risk, Credit Bail in Risk

iShares \$ High Yield Corp Bond UCITS ETF USD (Dist)

Counterparty Risk, Credit Risk, Liquidity Risk, Non-Investment Grade Risk

iShares € High Yield Corp Bond UCITS ETF

Counterparty Risk, Liquidity Risk, Non-Investment Grade Risk, Credit Bail in Risk

iShares Core € Corp Bond UCITS ETF EUR (Dist)

Counterparty Risk, Liquidity Risk, Credit Bail in Risk

iShares J.P. Morgan \$ EM Bond UCITS ETF USD (Dist)

Counterparty Risk, Credit Risk, Currency Risk, Emerging Markets Risk, Liquidity Risk

iShares J.P. Morgan EM Local Govt Bond UCITS ETF USD (Dist)

Counterparty Risk, Credit Risk, Currency Risk, Emerging Market Government Fixed Income Securities Risk, Emerging Markets Risk, Liquidity Risk

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Liquidity Risk

Lower liquidity means there are insufficient buyers or sellers to allow the Fund to sell or buy investments readily.

Credit Bail in Risk

The issuer of a financial asset held within the Fund may not pay income or repay capital to the Fund when due. If a financial institution is unable to meet its financial obligations, its financial assets may be subject to a write down in value or converted (i.e. "bail-in") by relevant authorities to rescue the institution.

Credit Risk

The issuer of a financial asset held within the Fund may not pay income or repay capital to the Fund when due.

Non-Investment Grade Risk

Non-investment grade fixed income securities are more sensitive to changes in interest rates and present greater 'Credit Risk' than higher rated fixed income securities.

Currency Risk

The Fund invests in other currencies. Changes in exchange rates will therefore affect the value of the investment.

Emerging Markets Risk

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Further information about the Fund and the Share Class, such as details of the key underlying investments of the Share Class and share prices, is available on the iShares website at www.ishares.com or by calling +44 (0)845 357 7000 or from your broker or financial adviser. The indicative intra-day net asset value of the Share Class is available at <http://deutsche-boerse.com> and/or <http://www.reuters.com>. A UCITS ETF's units/shares that have been acquired on the secondary market cannot usually be sold directly back to the UCITS ETF itself. Investors who are not Authorised Participants must buy and sell shares on a secondary market with the assistance of an intermediary (e.g. a stockbroker) and may incur fees and additional taxes in doing so. In addition, as the market price at which the Shares are traded on the secondary market may differ from the Net Asset Value per Share, investors may pay more than the then current Net Asset Value per Share when buying shares and may receive less than the current Net Asset Value per Share when selling them.

For investors in Austria

The funds mentioned in this document are registered for public offer in Austria. The Sales Prospectuses for the Companies, Key Investor Information Document and other documents as well as the annual and semi-annual reports have been published in Austria and are available free of charge from UniCredit Bank AG Vienna Branch, Julius Tandler Platz 3, 1090 Vienna, Austria, the Austrian paying and information agent and are also available on the website www.ishares.at. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus. The Companies intend to fulfil the requirements for treatment of all of their sub-funds as reporting funds. Therefore the Companies have an Austrian tax representative who calculates the Austrian Deemed Distributed Income figures once a year and files an electronic tax return with the Austrian Control Bank. However, it cannot be guaranteed that the requirements will be met in the future. The Companies reserve the right to give up the reporting fund status and to not undertake such tax filings.

For investors in Belgium

Unless indicated otherwise, any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts copies of which can be obtained free of charge from the Fund's Belgian Paying Agent (RBC Investors Services Belgium S.A., 11 Place Rogier, B-1210 Brussels, Belgium). Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus. Summary of Belgian tax information for private investors: the tax on stock exchange transactions (TSET) is due on every sale and purchase on the secondary market, concluded or executed in Belgium: 0.12% (max. 1.300 EUR per transaction) for distributing shares and 1.32% (max. 4.000 EUR per transaction) for accumulating shares. Dividends received from distributing iShares ETF are subject to the Belgian withholding tax of 30%. For iShares ETFs investing directly or indirectly more than 25 % in interest-bearing assets (no taxation should occur for funds investing less than 25% directly or indirectly in interest-bearing assets for holdings bought

prior to 1 January 2018 and sold after this date.). For new holdings bought from 1 January 2018 investing directly or indirectly the rate is now more than 10% in interest-bearing assets. A 30 % tax applies (again, via a withholding or assessment notice) on the part of the amount corresponding to the so-called 'interest component' received (i.e. all the income deriving directly or indirectly, in the form of interest, capital gains or losses, from the return on assets invested in the debts), to the extent that this interest component relates to the period during which the beneficiary has held the shares.

For investors in Denmark

This document is directed at Professional Investors in Denmark only and the Funds are authorised by Finanstilsynet, the Danish Financial Supervisory Authority. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts and the Danish country supplements. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus. Copies of all documentation can be obtained free of charge from offices of the paying agent at BlackRock (Netherlands) BV, Copenhagen Branch, Harbour House, Sundkrogsgade 21, 2100 København Ø, Denmark. This document is strictly confidential and may not be distributed without authorisation from BlackRock.

For investors in Finland

The funds mentioned are registered for public distribution in Finland and are authorised by the Finanssivalvonta (Fiva), the Financial Supervisory Authority (FIN-FSA), in Finland. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus. This document is strictly confidential and may not be distributed without authorisation from BlackRock.

For investors in France

Any subscription for shares in a sub-fund of one of the companies will be carried out according to the conditions specified in the full Prospectus, Key Investor Information Document, the French Addendum and in the Supplements of Companies as the case may be. These documents can be obtained by contacting the paying agent of the Company: BNP Paribas Securities Services, 3 rue d'Antin, 75002 Paris, tel: 00 33 1 42 98 10 00 or by visiting the French part of the site www.iShares.eu. The companies are undertakings for collective investment in transferable securities (UCITS) governed by foreign laws and approved by the Financial Regulator in the home state as a UCITS complying with European regulations. The European Directive 2009/65/EC of July 13, 2009 on UCITS, as amended, establishes common rules in order to allow the cross-border marketing of UCITS which comply with it. This common foundation did not prohibit different methods of implementation. This is why a European UCITS may be marketed in France even though the activity of such scheme would not respect rules identical to those which govern the approval of this type of product in France. This sub fund has been authorized for marketing in France by the Autorité des Marchés Financiers. Please note that the distribution of shares of some sub funds of funds is not allowed in France. This document does not constitute an offer or a solicitation in relation to the shares of the funds.

For investors in Germany

The Sales Prospectus and Key Investor Information Document, as well as the annual and semi-annual reports are available free of charge from Commerzbank Kaiserplatz, 60311 Frankfurt am Main, Germany. The Companies intend to fulfil the prerequisites for treatment of their sub-funds as so-called "transparent funds" pursuant to §§ 2 and 4 of the German Investment Tax Act (Investmentsteuergesetz – InvStG). However, it cannot be guaranteed that the requirements will be met. The Companies reserve the right to give up the "transparent status" and to not undertake the necessary publications. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus. Please note that important information about iShares VII funds is available in the current prospectus and other documents that can be obtained free of charge from the paying agent, Deutsche Bank AG Taunusanlage 12, 60325 Frankfurt am Main, Federal Republic of Germany.

For investors in Ireland

This document is strictly confidential and may not be distributed without authorisation from BlackRock. With respect to funds that are registered for public offer in Ireland, important information on the Companies is contained in the relevant Prospectus, Key Investor Information Document, and the most recent financial reports, which are available on our website www.iShares.com. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus.

For investors in Israel

BlackRock Investment Management (UK) Limited is not licensed under Israel's Regulation of Investment Advice, Investment Marketing and Portfolio Management Law, 5755-1995 (the "Advice Law"). No action has been taken or will be taken in Israel that would permit a public offering or distribution of the products mentioned in this document to the public in Israel. The products mentioned in this document have not been approved by the Israel Securities Authority. In addition, the products mentioned in this document are not regulated under the provisions of Israel's Joint Investment Trusts Law, 5754-1994 (the "Joint Investment Trusts Law"). This document has not been approved by the Israel Securities Authority and will only be distributed to Israeli residents in a manner that will not constitute "an offer to the public" under sections 15 and 15a of the

Israel Securities Law, 5728-1968 (the “Securities Law”) or section 25 of the Joint Investment Trusts Law, as applicable.

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For investors in Italy

Any application for shares in the funds is on the terms of the Prospectus for the Companies. The Shares of certain sub-funds in the Companies have been admitted to listing in Italy and are currently listed on the Mercato Telematico Fondi of Borsa Italiana S.p.A. The list of the sub-funds listed in Italy, the Prospectus, of the Companies, the Documento di quotazione of the iShares funds, the latest annual and semi annual report of the Companies are published (i) on the Companies’ internet website at the address www.iShares.com (ii) on Borsa Italiana S.p.A.’s website at the address www.borsaitalia.it. These documents are available for the public in Italian version with certification that such documents are a faithful translation of the original documents. Investors are entitled to receive free of charge, even at home, a copy of the above documents, upon written request forwarded to the Companies. For comprehensive information on the expenses charged to a fund and fees applicable to investors, see the Documento di quotazione and the Prospectus. Any decision to invest must be based solely on the information contained in the Company’s Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company’s Prospectus. Further information about the Fund and the Share Class, such as details of the key underlying investments of the Share Class and share prices, is available on the iShares website at www.ishares.com or by calling +44 (0)845 357 7000 or from your broker or financial adviser. The indicative intra-day net asset value of the Share Class is available at <http://deutsche-boerse.com> and/or <http://www.reuters.com>. Investors who are not Authorised Participants must buy and sell shares on a secondary market with the assistance of an intermediary (e.g. a stockbroker) and may incur fees and additional taxes in doing so. In addition, as the market price at which the Shares are traded on the secondary market may differ from the Net Asset Value per Share, investors may pay more than the then current Net Asset Value per Share when buying shares and may receive less than the current Net Asset Value per Share when selling them.

For investors in Luxembourg

The Companies have been notified to the Commission de Surveillance du Secteur Financier in Luxembourg in order to market their shares for sale to the public in Luxembourg and the Companies are notified Undertaking in Collective Investment for Transferable Securities (UCITS). The Companies have not been listed on the Luxembourg Stock Exchange, investors should contact their broker for further information. Investment is subject to the Prospectus, Key Investor Information Document and all documents (the main/umbrella Prospectus, the Supplement[s], the latest and any previous annual and semi-annual reports of the Companies and the Memorandum and Articles of Association of the Companies) will be available in the Luxembourg, free of charge, from the offices of the Local Agent, BNP Paribas Securities Services, Luxembourg Branch 33, rue de Gasperich Howald – Hesperange L-2085 Luxembourg or by visiting the website on www.iShares.com. Investors should read the fund specific risks in the Key Investor Information Document and the Company’s Prospectus.

For investors in Norway

The funds mentioned are registered for public distribution in Norway and are authorised by Kredittilsynet, the Financial Supervisory Authority of Norway. Any application for shares in the funds is on the terms of the Prospectus, Key Investor Information Document for the Companies. Any decision to invest must be based solely on the information contained in the Company’s Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company’s Prospectus. This document is strictly confidential and may not be distributed without authorisation from BlackRock.

For investors in Portugal

The commercialization of the groups of funds (“agrupamentos de fundos”) iShares PLC, iShares II PLC, iShares III PLC, iShares V PLC, iShares VI PLC and iShares VII PLC in Portugal has been duly authorized by the Portuguese Securities Commission (“Comissão do Mercado de Valores Mobiliários” or the “CMVM”), as published in the Monthly Bulletin of CMVM no 243, of July 2013. Investments on these groups of funds and correspondent sub-funds shall be based on their respective prospectuses, Key Investor Information Documents (KIID), and on the latest half-yearly report and unaudited accounts and/or annual report and audited accounts, and other mandatory informative documents. These documents can be obtained, free of charge, at the registered office of the Company’s [representative] BEST – Banco Electrónico de Serviço Total, S.A., with registered office in

Praça Marquês de Pombal, 3 - 3rd floor, 1250-161 Lisbon and on the website iShares.com. It is especially recommended to read the specific warnings and risk factors of the KIID and Funds' Prospectus.

For investors in Spain

The funds mentioned are registered for public distribution in Spain. The sales Prospectus has been registered with the Spanish Securities Market Commission (Comisión Nacional del Mercado de Valores ('CNMV')). The funds which are registered in the official registry of the Spanish Securities and Exchange Commission (CNMV) are iShares plc (registration number 801), iShares II plc (registration number 802) and iShares III plc (registration number 806), iShares IV plc (registration number 1402), iShares V plc (registration number 977), iShares VI plc (registration number 1091), iShares VII plc (registration number 886) and iShares (Lux) (registration number 905). The official registry, CNMV, must always be checked to see which sub funds of the funds mentioned are registered for public distribution in Spain. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts, copies of which can be obtained free of charge at www.iShares.es. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus. This document contains products or services of BlackRock, Inc. (or affiliates thereof) that might be offered directly or indirectly within the Andorran jurisdiction, and it should not be regarded as solicitation of business in any jurisdiction including the Principality of Andorra.

For investors in Sweden

The Funds mentioned herein are registered for public distribution in Sweden and are authorised by Finansinspektionen, the Swedish Financial Supervisory Authority. Any application for shares in the funds is on the terms of the Prospectus, Key Investor Information Document, for the Companies. Important information relating to the Companies is contained in the relevant Prospectus, Key Investor Information Document and other documents, copies of which can be obtained free of charge from offices of the paying agent BlackRock (Netherlands) BV, Stockholm Filial Norrlandsgatan 16, 1 floor, SE-111 43 Stockholm, Sweden. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus.

For investors in Switzerland

This document is marketing material.

This document shall be exclusively made available to, and directed at, qualified investors as defined in the Swiss Collective Investment Schemes Act of 23 June 2006, as amended.

The iShares ETFs are domiciled in Ireland, Switzerland and/or Germany.

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For investors in the UK

This document is directed at 'Professional Clients' only within the meaning of the rules of the Financial Conduct Authority. Some of the funds mentioned in this document are not registered for public distribution in the UK. In respect of these funds, this document is intended for information purposes only and does not constitute investment advice or an offer to sell or a solicitation of an offer to buy the funds described within and no steps may be taken which would constitute or result in a public offering of the funds in the UK. This document is strictly confidential and may not be distributed without authorisation from BlackRock Advisors (UK) Limited. Any decision to invest must be based solely on the information contained in the Company's Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts. Investors should read the fund specific risks in the Key Investor Information Document and the Company's Prospectus.

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