Wind down (of CSPP) is Coming.

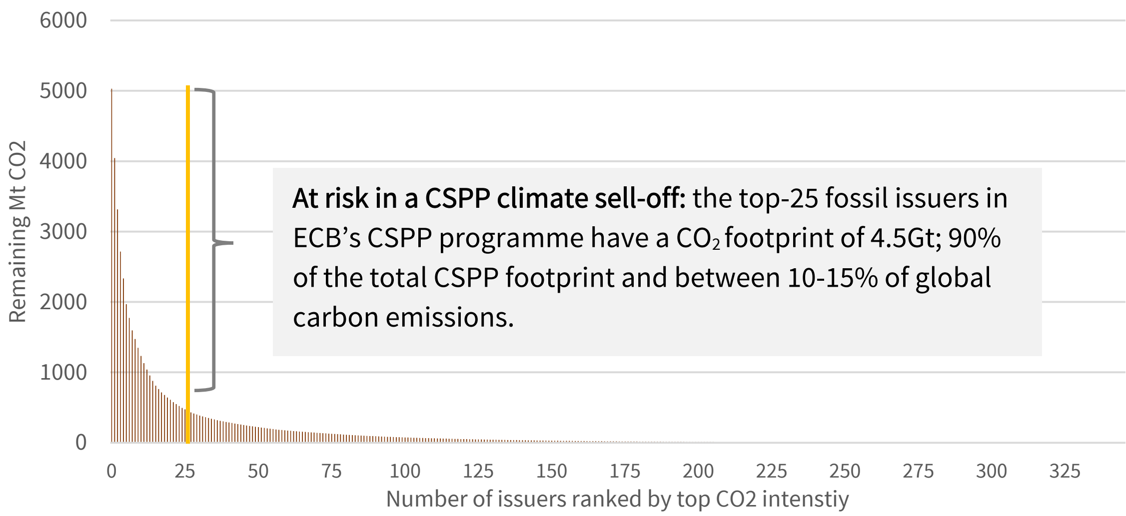
Josephine Richardson(*), Ulf Erlandsson

Inflation will likely drive central banks to sell assets/bonds. The question is if this will have a material impact across relative value based on climate related exposures. This note reviews what shape or form this could take, based on differing policy set-up in the key central banks.

The ECB's corporate purchase program (CSPP) is where we would expect the biggest market effects to appear. ECB has recently used significant climate commitment language, such as a commitment to adapt their portfolio in H2 2022, and also has the biggest exposure to less climate-aligned bonds among all major central banks through the CSPP. **Our analysis shows that the CO_2 exposure in the CSPP portfolio is quite concentrated, and we believe investors should pre-position for a front-loaded sell-off in such bonds, were the ECB to start applying a green focus in its monetary policy toolkit.**

Given this alongside a general low capacity of bond markets to assimilate large offers, we recommend investors to be vigilant on exposures to the EUR bonds of the highest carbon emitters in the CSPP portfolio, such as Shell, BP, Total, Glencore and ENI, indeed some of which are not even based in the Eurozone. Going into H2 2022 we expect the ECB to start selling bonds with a climate focus.

Figure 1. CO_2 footprint of issuers in the ECB's CSPP program, ranked on CO2 footprint outstanding and purchased by the CSPP. The graph shows the CSPP footprint for issuers [x:360] where 360 is the total number of issuers in the CSPP. Source: AFII, Europeanc Central Bank, Bloomberg.



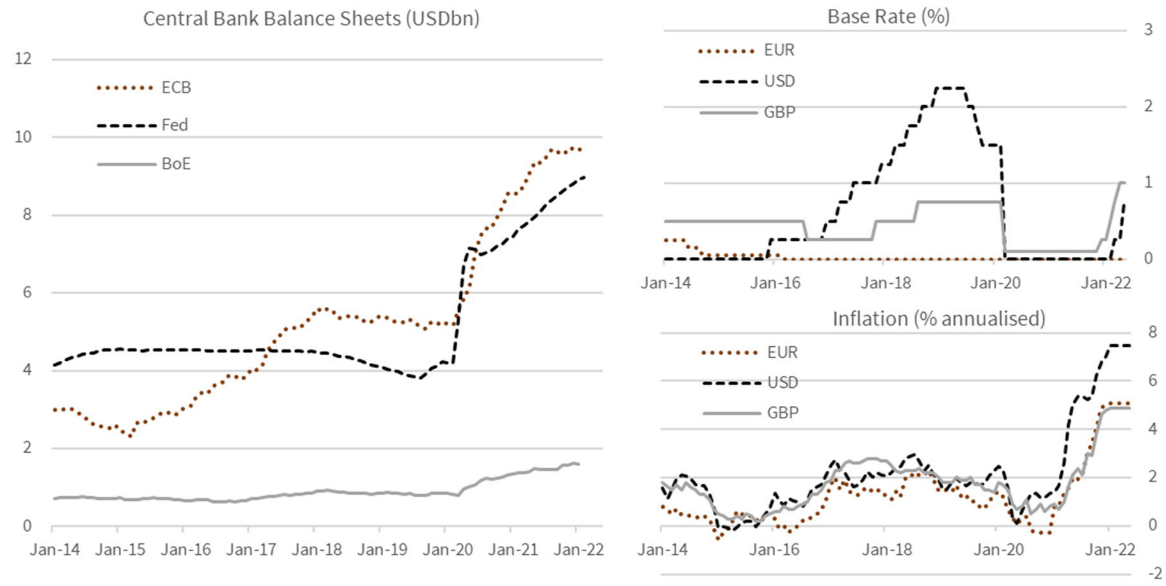
Not investment advice. This version 8 June 2022. Important disclaimers at the end of the document.
(*) Anthropocene Fixed Income Institute (www.anthropocenefii.org), jor@anthropocenefii.org

Introduction

The latest measure of US CPI, released on 11th May, was 8.3%. a level not seen since early 1980s. A glut of fiscal stimulus to combat the pandemic has run into sky-rocketing energy prices due to the invasion of Ukraine; the combination has catapulted inflation back onto the agenda for a generation of governments, central banks, investors and consumers who have never experienced this before.

Much is being written on the impacts of this, and associated policy changes, for investors. We want to ask ourselves are there any specific themes that will apply only to low-carbon fixed income investors, and how to prepare such a portfolio.

Figure 2. Monetary policy indicators across the European Central Bank, the Federal Reserve and the Bank of England. Source: Global QE Tracker, Atlantic Council, accessed 25 May 2022.



Central banks – background on current policy

Central banks find themselves in a tough position. In earlier cycles inflation had risen more gradually, and perhaps more explicitly due to strong economic growth. A tightening environment, in response to stimulus and conflict, is much less likely to deliver a soft landing. Either way, they have to act, and acting they are. The Federal Reserve, Bank of England, Reserve Bank of Australia, Bank of Canada, have all tightened their policy rates in the last 3 months, resulting in rates rising, curves steepening, and volatility increasing in markets.

Another key tool available to central banks, is management of their balance sheets. In response to the global financial crisis, central banks bought assets to support markets in the name of quantitative easing, and this was accelerated during the global pandemic. The largest four (Federal Reserve, European Central Bank, Bank of Japan and Bank of England), now own assets worth USD26.7trn, and the key EM Central banks (People's Bank of China, Reserve Bank of India, Banco Central do Brasil, Central Bank of Nigeria and Central Bank of Russia), have accumulated USD5.2trn.[1]

[1] "Global QE Tracker", Atlantic Council, Accessed 25 May 2022

The assets purchased typically began with government bonds, but has been extended to other assets including corporate bonds, as the market support was increased. The largest of which is the Corporate Sector Purchase Program, initiated in Q2 2016 by the ECB, which holds almost USD350bn of corporate bonds. The program was limited to investment grade non-bank corporate bonds, and purchases were made in the primary and secondary markets, with immediate spread tightening observed on announcement. The portfolio is published, but without sizes. It is believed that holdings are proportional to size of issuance, or debt outstanding of an eligible issuer. It is hard to overstate the impact that flows of this size have had on fixed income markets.

One additional challenge of this cycle is purported ambiguity in central banks' mandates. In the 1980s most central banks were given a single goal to manage inflation, and independence from governments so they could pursue it even if it was politically unpopular. In current times central banks' balance sheets have ballooned through asset purchase programmes under the name of quantitative easing. There is a renewed focused on financial stability, with central banks being called upon to stabilise the shadow banking sector in the credit crisis. There is also political desire for central banks to respond to climate change, and it's a topic that central bankers are increasingly lending their voices to.[2]

Green investment policies of major central banks

As inflation concerns bring adjustments to central banks fixed income portfolios, what impact can their sustainable investment policies have on the expected flows? The main central banks are at different places in their intention to include environmental considerations in their policy portfolios:

Bank of England: The BoE were asked explicitly to consider the transition to net zero, and have released details of how they consider this in their corporate bond-buying program.[3] Their high-level principles include plans to incentivise firms to achieve net zero, and also lead by example. The specific details include both excluding issuers that to not meet climate governance requirements, or coal exposure. They also plan to tilt purchases towards stronger climate performers within each sector, using an emissions-based scorecard. They began adjusting their portfolio to represent this approach in November 2021. Analysis in 2020 suggested a strong bias towards high-emissions sectors of the BoE existing portfolio,[4] and so decisive flows are needed to improve the situation. It seems reasonable to expect that ongoing portfolio adjustments will be made with a view to continuing the greening process.

European Central Bank: The ECB also released details in 2021 on their commitment to incorporate climate change considerations into due diligence procedures for their corporate sector asset purchases.[5] They acknowledged the threats to financial stability from climate risk in May 2022.[6] The CSPP framework is due to be adapted in H2 2022. The specific details on what metrics will be considered have not been made public, although it will be aligned to the Paris agreement. Analysis from 2020 also suggests that the market neutrality stance has caused

[2] "Special Report on Central Banks", The Economist, 23 Apr 2022.
[3] "Greening the Corporate Bond Purchase Scheme", Bank of England, 5 Nov 2021.
[4] "Decarbonising QE", Green Central Banking, Aug/Oct 2020.
[5] "ECB presents action plan to include climate change considerations in its monetary policy strategy", ECB, 8 Jul 2021.
[6] "Financial stability Review", ECB, May 2022.

significant bias towards carbon-intensive sectors,[7] and this has created better financing conditions for those issuers. The language in favour of climate-responsible investing should see flows that support greener assets over carbon-intensive assets.[8]

Bank of Japan: The governor of the Bank of Japan spoke in Aug 2021 about his intention to integrate climate concerns into monetary policy. While he stopped short of considering climate change in bond purchases due to a commitment to market neutrality, the BoJ did introduce a new fund provisioning measure to provide funds to financial institutions against loans made to address climate change.[9]

Federal Reserve: While the Fed may seem to have done the least (indeed Senate Republicans blocked the nomination of Sarah Bloom Raskin to a supervisory role at the Fed in part because she had said that regulators should take a bigger role in policing climate risk[10]), they have created two committees to assess financial risk from climate change, and assess climate-related risks to financial stability,[11] and made statements of support of the NGFS.[12]

It should also be noted that green and sustainability linked sovereign instruments are starting to make their mark across the rates and inflation spectrum. For example, on May 27th the French Government issued EUR4bn green inflation-linked OAT, with the book 7x oversubscribed, indicating strong investor concerns around rising inflation as well as investor's positioning their fixed income exposures toward more 'green'. Germany issued a highly watched green twin-Bund in September 2020, with more bonds following and in the inflation context the 30yr green bund can be especially interesting to watch.[13] Bank of Japan has recently aired ideas around issuing transition bonds (unclear exactly what format) to the tune of hundreds of biliions of USD.[14]

---

[7] "Decarbonising is Easy: Beyond Market Neutrality in the ECB's Corporate QE", Green Central Banking, 22 Oct 2021.

[8] A slightly obscure but still important discussion happening at the ECB is with respects to defining collateral eligibility. That net is cast considerably wider than that for the CSPP, as we note in "The ECB and Alberta's oil production tax holiday", AFII, 26 Oct, 2020, and "Technical note: An ECB rapid decarbonization plan", AFII, 20 Oct 2020.

[9] "The Bank of Japan's strategy on climate change", Speech by Governor Haruhiko Kuroda, 4 Aug 2021.

[10] "Sarah Bloom Raskin withdraws nomination for top Fed watchdog role", Financial Times, 15 Mar 2022.

[11] "Financial Stability Implications of Climate Change", Governor Lael Brainard, 23 Mar 2021.

[12] "Federal Reserve Board issues statement in support of the Glasgow Declaration by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS)", Federal Reserve Board, 3 Nov 2021.

[13] "German 30-yr green bond bucks market selloff with record demand", Reuters, 11 May 2021.

[14] "Japan Mulls New Type of Debt for $157 Billion Green Effort", Bloomberg, 20 May 2022.

The ECB CSPP portfolio

While exact details of the CSPP portfolio, and the ECB's approach to assessing climate impact of investment remain unclear, what follows is our analysis of the publically available information regardining their holdings, and some ideas on how quantitative-tightening flows might unfold. We believe the precise details of holdings are secondary to the presence of significant carbon-emitters in the portfolio, and therefore the expectation of their underperformance.

We asses carbon intensity in the ECB corporate purchase portfolio on the basis of the estimated Scope 1 + Scope 2 carbon footprint of constituent companies, adding Scope 3 where available. ECB discloses which ISINs it has bought, but does not disclose data on purchased amounts on an individual ISIN basis.[15] However, we believe the amount purchased will be highly correlated to the amount outstanding of a particular bond. The ECB limit is to buy up to 70% of an individual bond, however, we believe the ECB is unlikely to want to achieve such monopolistic positions in securities.

In order to estimate a number of the ECB's exposure to the relevant issuers, we note that total CSPP purchases[16] amount to EUR330bn and that the total market value of the CSPP ISINs is EUR1.17bn.[17] This means that, on average, the ECB holds 28% of the outstanding bonds. For purposes of this analysis, we assume that the ECB holds 28% of each individual and announced ISIN: this will of course be incorrect on an individual basis, but could represents a conservative estimate of ECB holdings of large cap fossil-intensive issuers, due to the portfolio holding only a subset of eligible issues.

In Figure 3 we show the list of the top-25 absolute highest carbon footprints in the CSPP portfolio. Notably, although the top-25 names (the CSPP portfolio contains 360 issuers, as calculated on a unique ticker basis) only constitute 15% of estimated CSPP notional, their associated footprint is more than 90% of the total CO_2 footprint of it. This is an extremely high concentration of carbon in a few names. Moreover, the associated footprint of the top-25 is 4.5 gigatonnes (GT) of CO_2e which is clearly a macro-climate-relevant number: annual global CO2e emissions are around 30-40Gt. Translating the full CSPP portfolio into a fixed income carbon footprint, the CSPP portfolio would have a footprint of 28% x 5,030Mtpa = 1,409Mtpa, or equivalent to 200 mid-sized coal-fire power plants.[18]

[15] "ECB announces details of the corporate sector purchase programme (CSPP) – Q&A", ECB, 21 Mar 2021, covers most modalities of the CSPP programme. In this text, we apply our broad understanding of those, caveating that we are not experts on all the details. In terms of the conclusions, however, we believe they generally remain valid irrespective if some of the details are not full precision.
[16] Cumulative purchases should be fairly similar to total portfolio size, as the CSPP has generally been reinvesting maturing bonds, and as we understand, does not treat reinvestments as purchases.
[17] Total nominal is EUR1.26bn.
[18] We assume a mid-sized coal-plant to be 2x800MW = 1,600MW with associated annual emissions of 6-8Mtpta (using hard coal).

Figure 3. Top 25 CSPP holdings ranked on absolute CO_2 emissions, Scope 1+2 and Scope 3 where available. Source: AFII, ECB, Bloomberg.

Ticker	Issuer name	No. of bonds in CSPP	Total nominal (EURmn)	Sample bond	Scope 1+2 (+3)CO2e Mtpa	CO2/ Nominal	Scope 1
RDSALN	Shell International Finance BV	15	15,250	XS1048529041	986	64.6	60.0
TTEFP	Total Capital International S.A.	18	16,300	XS0830194501	730	44.8	34.0
BPLN	BP Capital Markets BV	2	1,500	XS2270147924	598	398.6	33.2
GLENLN	Glencore Capital Finance DAC	3	2,050	XS2228892860	383	187.0	33.7
ENIIM	ENI Finance International S.A.	17	14,600	BE6321718346	365	25.0	64.3
MTNA	ArcelorMittal S.A	4	2,396	XS1730873731	195	81.3	162.8
REPSM	Repsol Europe Finance	8	5,350	XS2361358299	179	33.4	19.4
OMVAV	OMV AG	12	7,750	XS0834367863	123	15.9	14.5
ERDLAG	Erdöl-Lagergesellschaft m.b.H.	1	456	XS0905658349	123	269.7	14.5
ENELIM	ENEL Finance Intl N.V.	22	21,801	XS0177089298	117	5.4	111.0
HOLNSW	Holcim Finance (Luxembg) S.A.	11	7,588	XS1019821732	102	13.4	95.4
RWE	RWE AG	3	1,850	XS2351092478	91	49.0	88.0
EOANGR	E.ON Intl Finance B.V.	29	19,950	XS0162513211	85	4.3	78.9
HEIGR	HeidelbergCement AG	8	6,150	XS1425274484	76	12.3	68.4
FUMVFH	Fortum Oyj, Helsinki	3	2,500	XS1956027947	69	27.8	69.3
ENGIFP	Engie S.A.	25	17,603	FR0010952770	47	2.7	44.4
ENGALL	Engie Alliance GIE	1	1,000	FR0000475758	47	47.0	44.4
LYB	LYB International Finance II	2	1,000	XS2052310054	36	36.3	24.4
CRHID	CRH Finance DAC	4	2,600	XS1505896735	36	13.9	33.5
LIN	Linde Finance B.V.	11	7,150	DE000A1R07P5	34	4.7	16.1
SLB	Schlumberger Fin. France SAS	6	4,900	XS1898256257	34	6.8	1.1
EDF	Electricité de France (E.D.F.)	12	15,950	FR0010800540	28	1.7	27.5
CTEFRA	Coentreprise de Transport d'Electric	3	2,920	FR0013264405	28	9.4	27.5
NTGYSM	Naturgy Capital Markets S.A.	12	7,555	XS1590568132	26	3.5	24.8
BZUIM	Buzzi Unicem S.p.A., Casale Monferra	1	500	XS1401125346	21	42.7	19.7

As an alternative way to rank names in the CSPP, Figure 4 shows the list of top-25 carbon intensive issuers measured as CO_2 footprint divided by the estimated amount that the CSPP holds. This measure indicates how quickly the ECB could reduce its carbon footprint in terms of each euro it would be selling. The alternative ranking shifts coal intensive names like Arcelor-Mittal, RWE and Fortum[19] as well as Glencore[20] coming up in the list. The top-25 intensive names has as an associated footprint of 4.2GT (85%) for a notional share of the CSPP of only 8%.

Finally, Figure 5 highlights the jurisdication of issuers, as post-Brexit some issuers are no longer located within the European Union, and politically this 'headquartering' may be a theme for determining where to divest. It can be argued that ECB should subsidize the cost-of-capital for Total (a French oil major)[21], but any argument would surely be weaker for non-Euro companies like Shell, BP, Glencore and Schlumberger. Selling off such non-European Union credits would have a very significant impact in exposure, a reduction to the total carbon footprint of 2Gt.

[19] Through Uniper, see "UnFortumate: iTraxx Main S35 vs ESG version", AFII, 16 Mar 2022.

[20] To see how this could be problematic from a climate standpoint, see for example the discussion around Glencore's coal mine methane emissions, "Glencore news: Implications for iTraxx investors", AFII, 30 Nov 2022.

[21] We remain uncertain if Total's venture into the East-African Oil Pipeline (EACOP) together with the Chinese government is well-aligned with the interests of the average Euro-zone citizen. Indeed, we have argued that Total's relative position within the European oil industry may be weak, refer to "Short Total. Long Equinor (and/or iTraxx ESG)", AFII, 2 Mar 2021. The company's exposures in Russia galvanizes this view.

Figure 4. Top-25 CSPP-carbon intensive holdings in the ECB portfolio. Intensity is calculated as Scope 1+2 emissions from the issuer divided by the notional amount outstanding in the CSPP bonds from the issuer. Source: AFII, ECB, Bloomberg.

Ticker	Issuer name	No. of bonds in CSPP	Total nominal (EURmn)	Sample bond	Scope 1+2 (+3)CO2e Mtpa	CO2/ Nominal	Scope 1	Scope 2
BPLN	BP Capital Markets BV	2	1,500	XS2270147924	598	398.6	33.2	6.6
ERDLAG	Erdöl-Lagergesellschaft m.b.H.	1	456	XS0905658349	123	269.7	14.5	0.3
GLENLN	Glencore Capital Finance DAC	3	2,050	XS2228892860	383	187.0	33.7	15.3
MTNA	ArcelorMittal S.A	4	2,396	XS1730873731	195	81.3	162.8	31.9
RDSALN	Shell International Finance BV	15	15,250	XS1048529041	986	64.6	60.0	6.6
RWE	RWE AG	3	1,850	XS2351092478	91	49.0	88.0	2.6
ENGALL	Engie Alliance GIE	1	1,000	FR0000475758	47	47.0	44.4	2.7
TTEFP	Total Capital International S.A.	18	16,300	XS0830194501	730	44.8	34.0	2.0
BZUIM	Buzzi Unicem S.p.A., Casale Monferra	1	500	XS1401125346	21	42.7	19.7	1.6
LYB	LYB International Finance II	2	1,000	XS2052310054	36	36.3	24.4	11.9
REPSM	Repsol Europe Finance	8	5,350	XS2361358299	179	33.4	19.4	0.4
LHAGR	Deutsche Lufthansa AG	1	500	XS2049726990	15	29.4	14.5	0.2
FUMVFH	Fortum Oyj, Helsinki	3	2,500	XS1956027947	69	27.8	69.3	0.1
ENIIM	ENI Finance International S.A.	17	14,600	BE6321718346	365	25.0	64.3	0.9
BRLS	Borealis AG	1	300	AT0000A24UY3	7	24.6	4.2	3.2
SOLBBB	Solvay S.A.	1	600	BE6315847804	11	17.7	9.0	1.6
OMVAV	OMV AG	12	7,750	XS0834367863	123	15.9	14.5	0.3
CRHID	CRH Finance DAC	4	2,600	XS1505896735	36	13.9	33.5	2.6
HOLNSW	Holcim Finance (Luxembg) S.A.	11	7,588	XS1019821732	102	13.4	95.4	6.4
HEIGR	HeidelbergCement AG	8	6,150	XS1425274484	76	12.3	68.4	7.4
IAGLN	International Consolidated Airlines G	2	1,000	XS2020580945	11	11.0	11.0	0.0
CTEFRA	Coentreprise de Transport d'Electric	3	2,920	FR0013264405	28	9.4	27.5	0.1
OBRKRF	Energie AG Oberösterreich	1	300	XS0213737702	3	9.0	2.6	0.1
EWE	EWE AG	2	1,000	DE000A3E5L98	8	8.2	8.0	0.2
SLB	Schlumberger Fin. France SAS	6	4,900	XS1898256257	34	6.8	1.1	0.5

Figure 5. Top CSPP holdings whose headquarters are no longer within the Eurozone and absolute CO_2 emssions. Scope 1+2 and Scope 3 where available. Source: AFII, ECB, Bloomberg.

Ticker	Issuer name	No. of bonds in CSPP	Total nominal (EURmn)	Sample bond	Scope 1+2 CO2e Mtpa	CO2/ Nominal	Scope 1	Scope 2
RDSALN	Shell International Finance BV	15	15,250	XS1048529041	986	64.6	60.0	6.6
BPLN	BP Capital Markets BV	2	1,500	XS2270147924	598	398.6	33.2	6.6
GLENLN	Glencore Capital Finance DAC	3	2,050	XS2228892860	383	187.0	33.7	15.3
MTNA	ArcelorMittal S.A	4	2,396	XS1730873731	195	81.3	162.8	31.9
HOLNSW	Holcim Finance (Luxembg) S.A.	11	7,588	XS1019821732	102	13.4	95.4	6.4
LYB	LYB International Finance II	2	1,000	XS2052310054	36	36.3	24.4	11.9
SLB	Schlumberger Fin. France SAS	6	4,900	XS1898256257	34	6.8	1.1	0.5
IAGLN	International Consolidated Airlines G	2	1,000	XS2020580945	11	11.0	11.0	0.0
EZJLN	EasyJet FinCo BV	1	1,200	XS2306601746	6	4.7	5.6	0.0
WIZZLN	Wizz Air Finance Company B.V.	2	1,000	XS2288097483	1	1.3	1.3	0.0

IMPORTANT DISCLAIMER:

This report is for information and educational purposes only. The Anthropocene Fixed Income Institute ('AFII') does not provide tax, legal, investment or accounting advice. This report is not intended to provide, and should not be relied on for, tax, legal, investment or accounting advice. Nothing in this report is intended as investment advice, as an offer or solicitation of an offer to buy or sell, or as a recommendation, endorsement, or sponsorship of any security, company, or fund. AFII is not responsible for any investment decision made by you. You are responsible for your own investment research and investment decisions. This report is not meant as a general guide to investing, nor as a source of any specific investment recommendation. Unless attributed to others, any opinions expressed are our current opinions only. Certain information presented may have been provided by third parties. AFII believes that such third-party information is reliable, and has checked public records to verify it wherever possible, but does not guarantee its accuracy, timeliness or completeness; and it is subject to change without notice.

The Anthropocene Fixed Income Institute is a non-profit organization "to monitor, advocate for and influence the impact of the fixed income and bond markets in the age of human induced climate change." For more information about the Institute, please visit wwww.anthropocenefii.org or follow us using the hashtag #anthropocenefii.