

Auto bonds – Any colour so long as it is green

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Road Vehicles are a significant source of GHG emissions, and therefore transitioning the auto manufacturing sector will be essential to tackling climate change. The auto sector is also capital intensive, and a significant user of debt, so ensuring affordable capital is available will be important to facilitate the necessary transition.

A number of auto manufacturers across several regions, have issued green bonds. Very recently both General Motors and Ford have come to market with large deals, which is a clear sign of continued support of the product in this sector.¹ These bonds generally make proceeds available for development of clean transportation. Without going into specifics on individual green bond issuances, we view this as a clearly positive development.

The auto green bonds do not always price with as substantial a greenium as seen in many other segments of the green bond market. Many are trading flat to vanilla issuance, and some even wider, e.g. the recent GM issuance is trading meaningfully wider than the equivalent grey bond curve (see Figure 1 and the Appendix for full details). As autos often issue from multiple entities this can make a direct comparison hard. It is also a highly leveraged cyclical sector which may decrease general appetite. We view this as a risk to transition; if cheaper capital for green investment is not made available this risks delaying emission reductions in the sector.

Aside from any specific views on the credit worthiness of the auto sector, we present three ways for different investors to support the sector's clean transition through bond positioning, exemplified with the recent GM green bond issuance.

Figure 1. Largest green bond issuers in the Auto sector. Source: Bloomberg accessed 17 Aug 2022.

Issuer	Ticker	Rating	# of GB	GBs (USDmn)	Most recent green bond	Mid z spread	Comment
Ford Motor Co	F	BB+/Ba2	2	4,250	\$6.1 32s	393/10y	Old green bond tight to grey, new green flat but may contain new issue premium
Honda Motor Co Ltd	HNDA	A-/A3	3	2,750	\$2.967 32s	129/10y	No vanilla USD debt to compare
General Motors Co	GM	BBB/Baa3	2	2,250	\$5.6 32s	291/10y	Green bonds wider than grey
Kia Corp	KIAMTR	AA	11	1,630	KRW1.955 28s	111/6y	Green broadly flat to grey
Volkswagen Int. Fin. NV	VW	A+	4	1,549	€3.75 27s	110/5y	Green broadly flat to grey
Mercedes-Benz Group AG	MBGGR	A-/A3	2	1,033	€0.75 33s	56/10y	Green broadly flat to grey Green bonds longer dated than grey, so comparison hard
Volvo Car AB	VOVCAB	BB+/Ba1	2	1,033	€4.25 28s	273/7y	
RCI Banque SA	RENAUL	BBB-/Baa2	1	516	€2.75 27s	199/5y	Green broadly flat to grey
Hyundai Cap. Services Inc	HYUCAP	AA	10	213	KRW1.506 24s	99/2y	Green broadly flat to grey

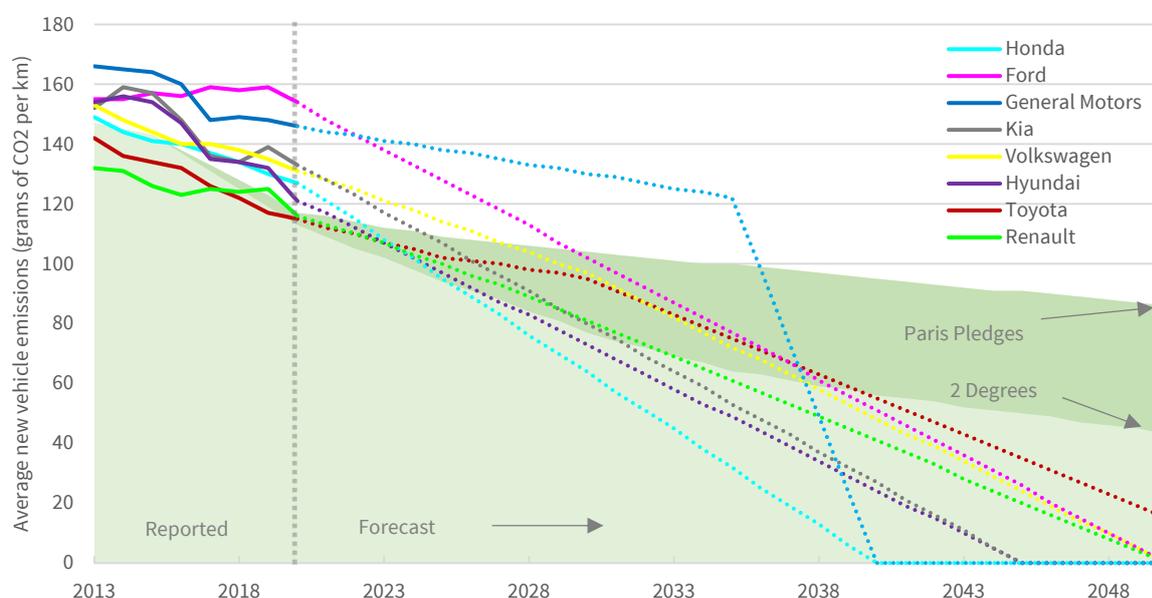
¹ On 28 Jul 2022 GM issued USD1bn 7y bonds and USD1.25bn 10y bonds (ISIN: US37045VAY65/US37045VAZ31). On 16 Aug 2022, Ford issued USD1.75bn 10y bonds (US345370DB39), following up their inaugural 8 Nov 2021 USD2.5bn issuance (US345370DA55).

Auto sector transition

An estimated 48.6% of oil demand in OECD comes from road transportation² where 60-85% is due to cars and light vans.³ While there is a lot of pressure for energy companies to report and look to reduce their Scope 3 emissions, that seems only possible alongside a meaningful transition away from petrol as a fuel for autos. At COP26 a deal was announced to end sale of fossil fuel vehicles by 2040 or earlier, however also notable was the absence of certain countries and manufacturers.⁴

The Transition Pathway Initiative (TPI) analyses companies in high-carbon sectors both in terms of their management quality, and carbon performance.⁵ They report with respect to management, 76.9% of Autos are classified as either Level 4 - Strategic Assessment or Level 3 - Integrating into operation decision making. In our view, this shows a high level of awareness of carbon emission impacts in the sector. As illustrated in the Figure 2, company commitments appear to come under the Paris pledges as soon as 2025 – noting however that the sample of Autos selected in the graph is based on the companies that have also issued green bonds. However, the forecast still needs to be realised, and so we cannot be complacent about the work that is needed in decarbonising this sector.

Figure 2. Reported and Targeted forward-looking carbon emissions of the Auto sector. Source: TPI, accessed 15 Aug 2022.



The Auto sector is considered capital-intensive, which means it requires a large amount of upfront investment to generate end products. This also means that large capital investment will be required for transition, to develop the new low-carbon business models. For Autos, the transition is primarily focused on development of electric vehicles, but also on making the manufacture process more efficient, with better circular reuse of materials.⁶

² “[Distribution of oil demand in OECD in 2020, by sector](#)”, Statista, Accessed 11 Aug 2022.

³ US 70.4% from [Dept for Energy](#) Feb 2021, UK 85.7% from [DfT](#) 11 May 2021, Global 60.1% from [Our World in Data](#) Oct 2020.

⁴ “[Car firms agree at COP26 to end sale of fossil fuel vehicles by 2040](#)”, The Guardian, 10 Nov 2021.

⁵ An overview of the TPI data as well as methodology is available through this [TPI web-page link](#), accessed 15 Aug 2022. As a summary, TPI is the Transition Pathway Initiative, which is an independent research organisation evaluating companies’ carbon performances.

⁶ “[Life cycle approach on Scope 3 emissions key to auto sector decarbonization](#)”, IHS MarkIt, 21 Jun 2021.

The International Energy Agency have written on the importance of making low-cost capital available for transition, specifically “widespread mobilisation of low-cost debt”⁷. While their focus and case studies are power generation and heavy industry, it highlights for capital intensive sectors how influential small changes in cost of capital can be.

Green bonds have been popular in the auto sector, with nearly USD 16bn issued so far. A brief analysis and bond curve plots for each green auto issuer is available in the Appendix. Ford issued their inaugural USD 2.5bn green bond in Nov 2021 and followed up with USD 1.75bn in Aug 2022. The Aug 2022 deal priced with a new issue premium of 51bp compared to existing green bonds, but also wider than its older non green 31s indicating a negative greenium, albeit versus a shorter bond.⁸ Those proceeds were to be used exclusively for clean transportation and electric vehicles.⁹ Honda came to market with USD 2.75bn in Mar 2022, with proceeds dedicated both to manufacturing of electric cars, but also in recycling used vehicle parts.¹⁰ Most recently, General Motors have also issued their first two green bonds in Jul 2022 with proceeds available for clean transportation.¹¹

Figure 3. Green bonds issued in Auto sector. Source Bloomberg.

Issuer	Green bonds (USD mm)
Ford Motor Co	4,250
Honda Motor Co Ltd	2,750
General Motors Co	2,250
Kia Corp	1,630
Volkswagen International Finance NV	1,549
Mercedes-Benz Group AG	1,033
Volvo Car AB	1,033
Fisker Inc	668
RCI Banque SA	516
Hyundai Capital Services Inc	213
Toyota Leasing Thailand Co Ltd	57

Contrary to the general green bond narrative,¹² in some cases these bonds trade wider than the grey equivalent bonds, i.e. they do not offer tighter financing spreads to the issuers. From a markets point of view this is unintuitive; the bonds are pari passu in all terms to the conventional debt, they have restrictions only on use-of-proceeds at inception. The green label should strictly increase the investor base, and so widen demand for the securities; any investor of conventional debt could certainly buy the green debt too if it were trading at a premium. From an impact point of view this is a lost opportunity; Autos need cheap capital to transition, and green bonds should be a product that can help to deliver that.

We will look specifically at the General Motors green bonds issued earlier this year, and ask how can an impact-oriented investor help to support these issues, to provide cheap green financing to the auto sector.

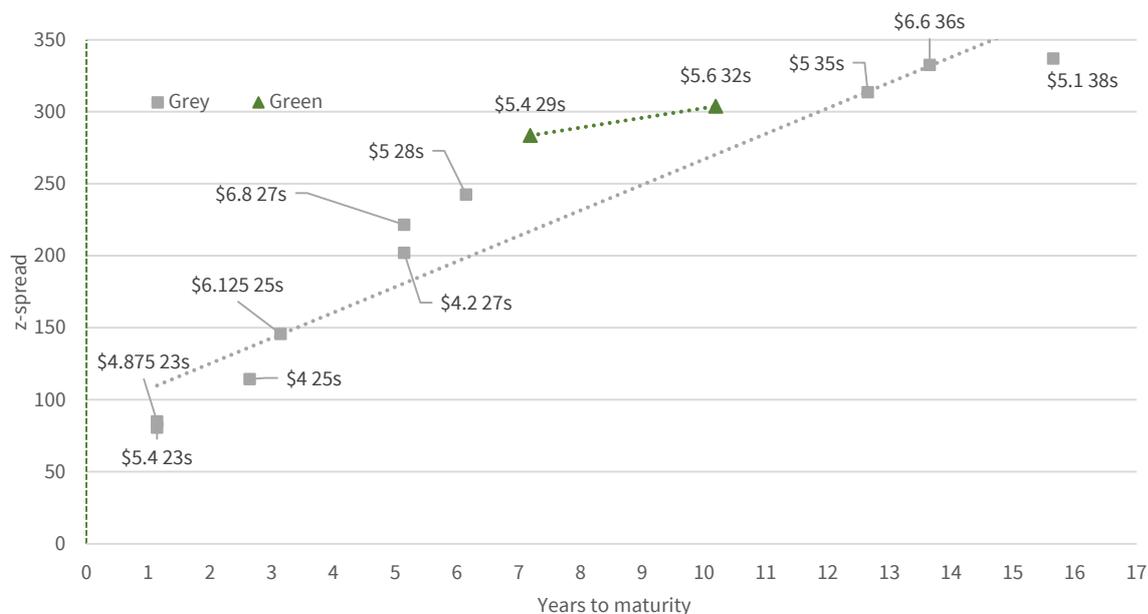
⁷ [“The cost of capital in clean energy transition”](#), IEA, 17 Dec 2021.
⁸ [“New Issues”](#), BondEvalue, 17 Aug 2022.
⁹ [“Ford Breaks Green Bond Record with \\$2.5 Billing Debut Sale”](#), Bloomberg, 8 Nov 2021.
¹⁰ [“Honda to Issue U.S. Dollar-Denominated Green Bonds to Expedite its Environmental Initiatives”](#), Business Today, 4 Mar 2022.
¹¹ [“General Motors raises US\\$2.25bn from inaugural green bond”](#), IFR, 28 Jul 2022.
¹² [“The Green Corporate Bond Issuance Premium”](#), Caramichael, J. and Rapp, A., Federal Reserve International Finance Discussion Papers 1346, June 2022, provides a broad cross-section analysis on the topic. They find a significantly positive greenium, however, also concluding that those results are sensitive to geographic/currency considerations: “the greenium is, on average, allocated primarily to local euro and foreign US dollar issuers.”

GM green bonds

General Motors, as with many autos, issues debt both from the parent operating company, General Motors Co, and from a subsidiary financing entity, General Motors Financial Company. Green bonds are generally issued from the parent company, or holding company, and so here we look only at equivalent securities issued from the same entity.¹³

GM issued two green bonds in Jul 2022, a 7y and a 10y deal, with total size USD 2.25bn. This is compared to an existing debt balance just over USD 15.5bn. On pricing date, it was acknowledged the bonds came wide to secondaries¹⁴, with some confusion caused by the two pricing curves (holdco v finco), and general market conditions being weaker. It may be that a grey bond would have needed an even higher new-issue premium, suggested there was some discount in the pricing. We have been monitoring the bonds for their two weeks of trading, and we do not see a compression back to the grey curve, and certainly not to a tighter curve.

Figure 4. Spreads for USD General Motors Co bonds. Source: Bloomberg. Pricing as of 11 Aug 2022.



The second party opinion on the financing was provided by Moody's, and calls the framework coherent, with best practice use of proceeds.¹⁵ Eligible projects are in Clean Transportation, to reduce CO2 emissions, prevent pollution, and transition to a circular economy. There is a second eligible category of Socioeconomic Advancement and Empowerment which is focused on diversity of workforce and supply chain, which is perhaps a bit soft and non-core (and indeed reported with only Robust expected impact compared to Advanced for the others) but included in other sustainable finance frameworks. Moody's assess GM 's planned reporting schedule as only aligned to ICMA principles. On reading this report, we see limited reason it would not be well-received in the green investor community.

¹³ As of Dec-2021 General Motors Co had USD 20bn of (mostly unsecured) debt compared with USD 94bn at General Motors Financial Co, which is a wholly owned subsidiary. Debt issued at holdco (the parent company) level is structurally subordinated to any debt at the subsidiary (finco or opco) for claims on any revenues generated directly in those entities.

¹⁴ "[General Motors raises US\\$2.25bn from inaugural green bond](#)", IFR, 28 Jul 2022.

¹⁵ "[Second Party Opinion on GM and GM Financial's Sustainable Finance Framework](#)", Moody's, 26 Jul 2022.

Green investor positioning to drive impact

This seems like a missed opportunity for investors to support financing for a capital-intensive sector, with an urgent need to transition. Below is an evaluation of three potential positionings to support GM green bonds, suitable for various types of investors. These are illustrations only and should not be considered as views on either GM as a credit or GM's green bonds.

OW GM Green bonds – Long only/green bond fund type of investor

Should investors simply OW (overweight) the green bonds, that would support the securities and potentially tighten the pricing. The 7y green bond, 5.4% 29s, is currently priced with a spread of 267bp and have a split rating BBB/Baa3. It is hard to draw direct comparables between industries, but looking at USD denominated debt, from US non-financial issuers at the same ratings, the bonds look wide (see Figure 5).

Figure 5. BBB or Baa3 rated comparables for GM 5.4 29s, Source Bloomberg pricing as of 15 Aug 2022.

Issuer	Industry Group	S&P Rating	Moody's Rating	ISIN	Coupon	Amount Outstanding (USD)	Maturity	z Spread Mid
AT&T INC	Telecommunications	BBB	Baa2	US00206RHJ41	4.4%	3,000	01-Mar-29	154
WHIRLPOOL CORP	Home Furnishings	BBB	Baa1	US963320AW61	4.8%	700	26-Feb-29	173
FOX CORP	Media	BBB	Baa2	US35137LAH87	4.7%	1,998	25-Jan-29	174
CONSTELLATION BRANDS INC	Beverages	BBB	Baa3	US21036PBF45	2.9%	600	01-May-30	177
VALERO ENERGY CORP	Oil&Gas	BBB	Baa2	US91913YAW03	4.0%	1,000	01-Apr-29	178
SABINE PASS LIQUEFACTION	Pipelines	BBB	Baa3	US785592AX43	4.5%	2,000	15-May-30	200
T-MOBILE USA INC	Telecommunications	BBB-	Baa3	US87264ABV61	3.4%	2,346	15-Apr-29	201
DEVON ENERGY CORPORATION	Oil&Gas	BBB	Baa3	US25179MBF95	4.5%	574	15-Jan-30	209
MARRIOTT INTERNATIONAL	Lodging	BBB	Baa3	US571903BE27	4.6%	1,000	15-Jun-30	214
SOUTHWEST AIRLINES CO	Airlines	BBB	Baa1	US844741BF49	2.6%	500	10-Feb-30	216
ONEOK INC	Pipelines	BBB	Baa3	US682680BB81	3.1%	780	15-Mar-30	225
HESS CORP	Oil&Gas	BBB-	Baa3	US023551AF16	7.9%	467	01-Oct-29	231
ALTRIA GROUP INC	Agriculture	BBB	A3	US02209SBJ15	3.4%	750	06-May-30	243
NETFLIX INC	Internet	BBB	Ba1	US64110LAV80	4.9%	1,000	15-Jun-30	251
GENERAL MOTORS CO	Auto Manufacturers	BBB	Baa3	US37045VAY65	5.4%	1,000	15-Oct-29	267

OW Green UW Grey – Benchmarked investor

For an investor who has a neutral view on GM, or alternatively hold bonds across the curve of GM due to tracking a benchmark, holding more/less of the green/grey bond is a straightforward way to support the green bond instrument. We illustrate this in the table. Note that the majority of GM capital structure is issued out of General Motors Financial Co, but nevertheless there are some traditional instruments issued at General Motors. The closest in maturity to the green 5.4% 29s is 5% 28s issued in 2018 and with 750mm outstanding.

Figure 6. GM 6/7y bond details: Source Bloomberg.

Bond Type	Green bond	Grey bond
Bond	GM 5.4% 29s	GM 5% 28s
ISIN	US37045VAY65	US37045VAS97
Maturity	15-Oct-29	01-Oct-28
Coupon	5.40%	5%
Cash price	100.67%	100.43%
z Spread	267	226
DV01	580	506

Because there is a year difference in maturity, the switch could be considered on a notional flat basis (e.g. 10Mn x 10Mn), or duration weighted (10mn on green bond v 11.462Mn on grey). The economics of each way to be positioned are detailed below in Figure 7.

Figure 7. OW Green UW Grey trade economics (USD). Source: AFII.

Notional Flat	Green bond	Grey bond	Duration Flat	Green bond	Grey bond
Notional	10,000,000	-10,000,000	Notional	10,000,000	-11,462,451
Annual carry	267,000	-226,000	Annual carry	267,000	-259,051

Net default exposure	0	Net default exposure	-1,462,451
Net carry	41,000	Net carry	7,949
Net spread		Net spread	
DV01	74,000	DV01	0

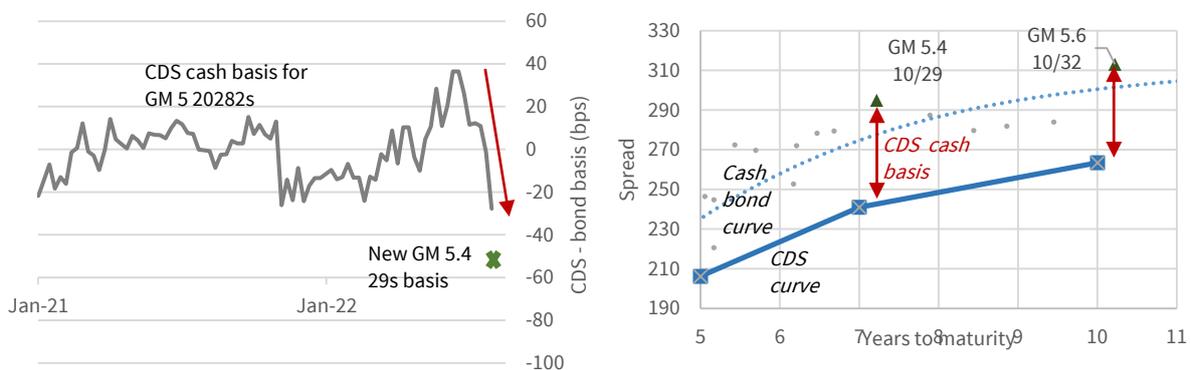
In summary, the notional flat position would also be neutral in terms of making cash available for GM but isolating the green versus grey switch.¹⁶ It would be flat in terms of default exposure, but show a small long risk position in terms of spread beta, ie. general market sensitivity.

The duration weighted position would be net selling bonds of GM, but still broadly carry flat, due to the shape of the curve. A duration neutral position would be considered market beta flat, such that it should not move on a relative basis as the general market moves.

Negative basis package – Leveraged investor

Holding the GM 5.4 29s and also being long protection in maturity matched CDS protection is a further way to be isolating/supporting the green bond funding spread.¹⁷ The CDS removes the direct default exposure,¹⁸ but leaves exposure to the spread between green bonds, and the CDS which should calibrate to the cheapest to delivery instrument. The GM package is still pricing at ‘negative basis’, which means the bonds have a wider spread than the CDS. The result of this, is that the trade can be entered into with significant positive carry.¹⁹

Figure 8. CDS-cash basis going negative recently (left), and recent GM green bonds coming cheap to cash and CDS curve (right). Pricing as of 29 Jul 2022. Source: Bloomberg, AFII.



¹⁶ “Making cash available” in the sense that a trade executed in the primary market would provide credit to GM. For secondary market transaction, the effect is indirect.

¹⁷ AFII previously covered negative basis on the new GM green bonds in “[Ace of Basis: Green cash-CDS basis to drive transition](#)”, AFII, 1 Aug 2022.

¹⁸ Theoretically, this is the case. However, there have historically been situations with complex capital structures where recovery on CDS and bonds can diverge. If your bond is deliverable into the CSD contract (as is the case here), then you should have full protection.

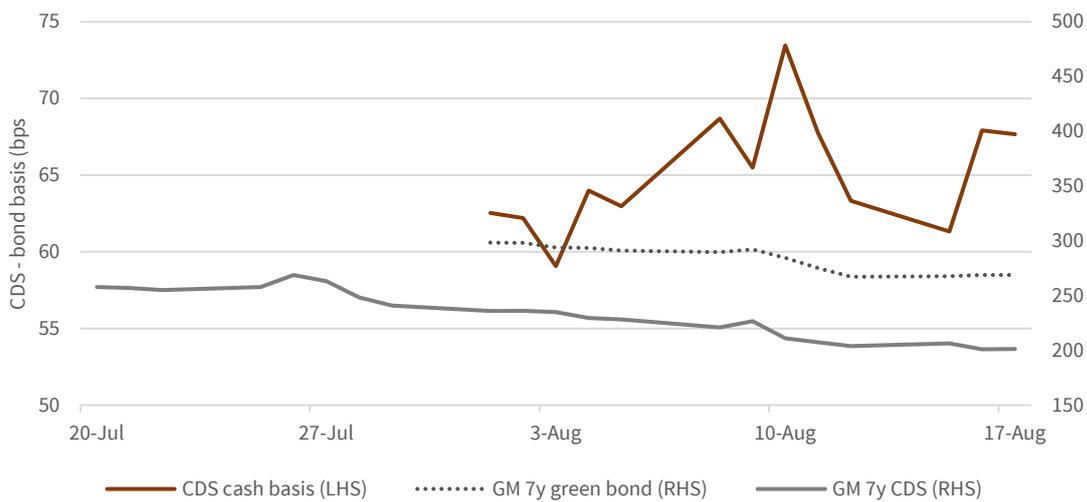
¹⁹ As noted in the GM negative basis piece, basis packages are highly dependent upon the type of investor and her cost of financing, which in some cases weakens or fully removes the positive carry argument.

Similar to the above, this allows an investor to hold the green bonds without taking an outright position to the issuer. This creates demand for green bonds, which should hopefully move spreads tighter, and enable GM to raise more green financing at more attractive levels.

This type of positioning can be especially capital efficient for some investors, as the margin required for the derivative is potentially lower compared to holding cash positions, enabling more leverage to be used, and therefore more impact to be achieved.

To be clear, the basis package position does entail additional mark-to-market risk. As illustrated in Figure 9, the basis of the green GM 5.4 29s has widened approximately 5bps over the first couple of weeks of trading.

Figure 9. CDS-cash basis since issuance of the green GM 29s. Source: Bloomberg, AFII.



Appendix – Auto bond curves

We present bond curves for the auto green bond issuers as identified in Figure 2. We analyse the funding curve for the entity which issued the green bond, usually holdco but sometimes finco. Note Honda has no USD vanilla debt outstanding so we cannot make a comparison.

Ford

Ford have issued green bonds out of the parent company, Ford Motor Co. It is the poorest rated auto in our selection, rated BB+/Ba2.

They have two green bonds outstanding, one of which was issued yesterday so probably still includes some new issue premium. The older bond does price with just under a 40bp discount to a grey bond with 1 year shorter maturity.

Figure 10. Ford vanilla and green USD bond spreads.
Source: Bloomberg, accessed 17 Aug 2022.

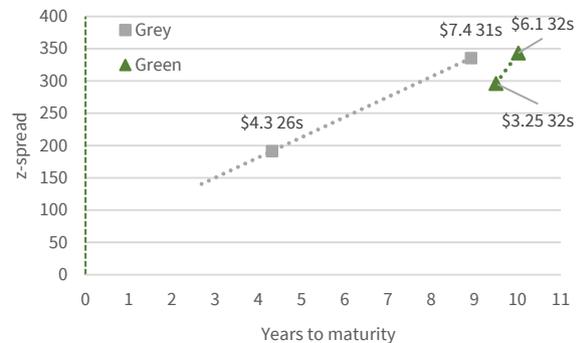
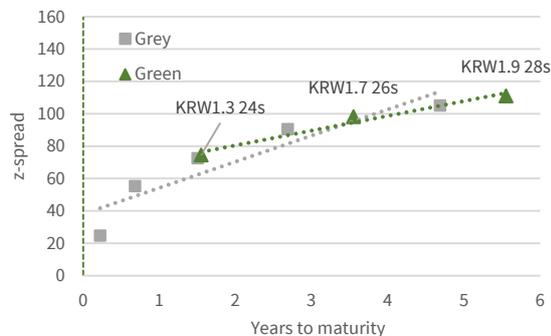


Figure 11. Kia vanilla and green KRW bond spreads.
Source Bloomberg accessed 16 Aug 2022.



Kia

Kia Motors also have issued their KRW green bonds out of the parent company, Kia Corp. Rated AA, they are one of the strongest companies in our universe.

The green and grey bonds price along one curve with little obvious differentiation.

Volkswagen

Volkswagen issue their green bonds out of the finco, Volkswagen International Finance NV. They are rated A+.

They have many bonds to observe, with the shorter dated instruments trading largely inline, but perhaps a flatter curve delivering a positive greenium to the longest dated paper, 1.25 32s.

Figure 12. Volkswagen vanilla and green EUR bond spreads: Source Bloomberg accessed 16 Aug 2022.

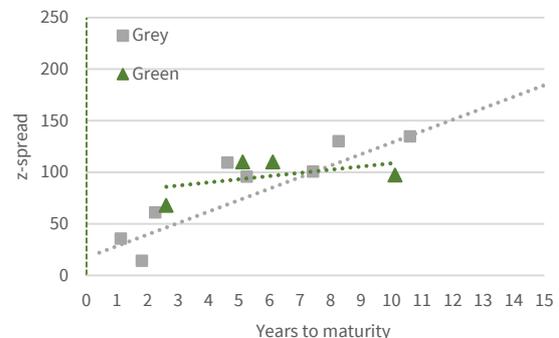
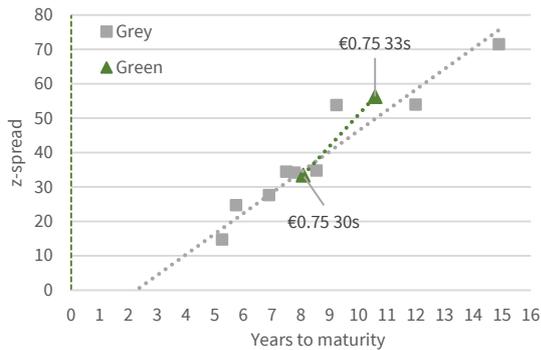


Figure 13. Mercedes vanilla and green EUR bond spreads:
Source Bloomberg accessed 16 Aug 2022.



Mercedes

Mercedes have issued their green bonds out of the parent company Mercedes-Benz Group AG, which is rated A-/A3.

They also have many bonds to observe, and as VW, we see shorter dated instruments trading inline but perhaps a steeper curve to green bonds, suggesting 0.75 33s have a negative greenium.

Volvo

Volvo have issued their green bonds out of the parent company, Volvo Car AB, which with its rating of BB+/Ba1 is the second sub-investment grade issuer in our universe.

They have no clear comparison between instruments, as the green bonds are much longer dated than the equivalent grey.

Figure 14. Volvo vanilla and green EUR bond spreads:
Source Bloomberg accessed 16 Aug 2022.



Figure 15. Renault vanilla and green bond EUR spreads:
Source Bloomberg accessed 16 Aug 2022.



Renault

Renault have issued their green bond out of the finance company, RCI Banque SA, which is rated BBB-/Baa2.

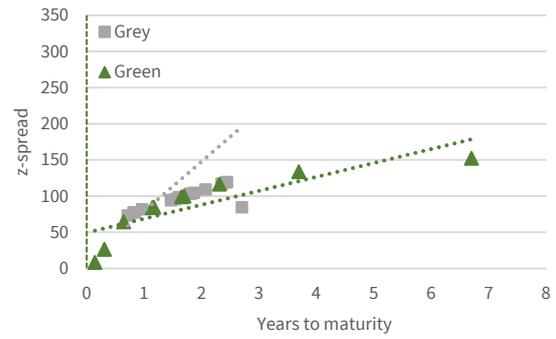
They also have a rich vanilla curve, and only one green bond which trades at a c50bp positive greenium.

Hyundai

Hyundai have issued their green bonds out of the finance company, Hyundai Capital Services, which is rated AA.

They have the largest number of green issues with which to build a curve, which looks inline with vanilla up to 5yrs. The green curve is quite flat, for the longer maturities.

Figure 14. Hyundai vanilla and green KRW bond spreads:



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