



Venezuela Debt: A Refresher

Morgan Stanley & Co. LLC Simon Waever, Global Head of EM Sovereign Credit Strategy | Strategist

Important note regarding economic sanctions. This research may reference jurisdiction(s) or person(s) which are the subject of sanctions administered or enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC"), the United Kingdom, the European Union and/or by other countries and multinational bodies. Any references in this report to jurisdictions, persons (individuals or entities), debt or equity instruments, or projects that may be covered by such sanctions are strictly incidental to general coverage of the relevant economic sector as germane to its overall financial outlook, and should not be read as recommending or advising as to any investment activities in relation to such jurisdictions, persons, instruments, or projects. Users of this report are solely responsible for ensuring that their investment activities are carried out in compliance with applicable sanctions.

All data as of October 30, unless otherwise stated.

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

Summary | Venezuela Debt – A Refresher

Introduction

- A refresher on debt: This is a refresher on Venezuela's debt stack given the numerous complications and individual bond differences to help to guide the much-increased trading in both VENZ and PDVSA bonds.
- Recovery values need more work: An assessment of longer-term potential recovery value needs more work. In any case, a restructuring is not happening anytime soon given the number of factors that would need to come together for this to happen. For our prior framework, see <u>Venezuela Economics and Strategy</u>: <u>Implications of Policy Change</u>, February 14, 2019.

1)The Debt

- High external debt: Venezuela's external debt stands at around US\$167 billion, around 175-225% of GDP.
- External bonds 54% of total: External bonds make up US\$59 billion in principal and around US\$90 billion once arrears are added.
- All in default: All bonds are currently in default and assigned zero weights in the main EM bond index.
- Index re-weighting the key near-term event: However, the index may re-weight the bonds as liquidity picks up, leading to around US\$1.5 billion of market value in potential buying.

1)Bond-Level Considerations

- Seven key bond drivers: At a bond level, we see seven key drivers when it comes to differentiating between bonds whether it's VENZ/PDVSA, the size of the claim, potential statute of limitation issue, CAC strength, collateral, real money holdings and the potential size in the index.
- Assessing total claims is the most important one: We suggest that a starting point for valuations is looking at bond prices versus claims, given the significant arrears that leave individual bonds with claims between 132-184. After that further adjustments can be made depending on individual bond features.
- Upside remains in the near term: This means that even with conservative near-term price/claims levels of 15 and 13 for VENZ and PDVSA, respectively, bond prices may reach 24 and 18.5 on average for VENZ and PDVSA.
- Bond preferences: Near term, we favour PDVSA over VENZ given the current price difference, with PDVSA 12.75% 22, VENZ 2022 and VENZ 2026 preferred bonds.

Debt Overview | Debt Outstanding

We estimate Venezuela's external debt stands at around US\$167 billion. The majority is from the sovereign at US\$107 billion, with PDVSA adding US\$59 billion and ELECAR another US\$1 billion. 21% is arrears due to missed interest payments.

- Difficult to collect data leading to clear uncertainty as to final amounts: With no real data published since 2019, or earlier, it's hard to establish exact claims. The numbers here use our own calculations for bonds and a mix of old data and local consultants for the rest. In an eventual restructuring, there is likely to be a lot of time dedicated to determining the admissibility of claims and reconciling them.
- External bonds make up US\$90 billion, or 54% of the total: The external bonds are from Venezuela sovereign (VENZ), Petroleos de Venezuela (PDVSA) and Electricidad de Caracas (ELECAR). US\$59 billion is the principal outstanding with another US\$31 billion in arrears given most bonds have been in default since 2017.
- **Other sovereign debt:** Bilateral debt is largely due to Russia while multilateral debt is with IDB and CAF. The debt to China is very hard to track due to multiple renegotiations and also still some ongoing repayments via oil sales. Finally, the arbitration claims via ICSID are made up of US\$14.5 billion that have already seen rulings and another US\$16.6 billion in pending cases (hard to assess final number).
- **PDVSA debt:** Outside of the bonds, PDVSA has a mix of debt via loans, promissory notes, supplier debt and others.
- No real domestic debt: While domestic debt tends to be less important in sovereign restructurings, although not always, in this case it will not be important given that it has nearly been entirely inflated away at this point.
- We also ignore private sector FX claims: There is likely around US\$6.5 billion in debt from private sector FX claims from arrears in the Cadivi/Concoex mechanisms, yet we doubt they will be included in an eventual debt restructuring.
- **Debt/GDP likely around 175-225% of GDP:** GDP is also unknown but generally seen to be around US\$75-95 billion in 2023, leaving debt/GDP at 175-225% of GDP.

Source: Bloomberg, GlobalSource, Morgan Stanley Research calculations

Venezuela	107,197
Bonds	49,946
Principal	31,093
Arrears	18,853
Bilateral	3,157
Multilateral	4,310
China	18,644
Arbitration rulings	31,140
Rulings	14,535
Pending cases	16,605
PDVSA	59,292
Bonds	39,206
Principal	27,078
Arrears	12,128
Other financial debt	6,380
Suppliers and Contractors	10,000
Promissory notes	2,000
Others	1,706
Becar	1,012
Bonds	1,012
Principal	650
Arrears	362
Total	167,50 ⁻
of which arrears	34,843
Total ex arrears	132,658

Bond Overview | Summary

There is US\$58 billion in outstanding external bonds across VENZ/PDVSA, with another US\$31 billion in past due interest to leave the total claim at US\$89 billion. We see seven key differentiating aspects between the bonds.

- US\$31 billion in VENZ bonds, US\$27 billion in PDVSA, all in default: We show 23 bonds in most tables. This
 excludes VENZ 2036 which was issued domestically yet never sold abroad so unlikely to enter any restructuring. For
 ease, we combine the two separate issuances (and ISINs) of VENZ 13.625% 2018. We also do not focus on the single
 issue from ELECAR. All bonds are in default, with all seeing the last coupon made in 2017 apart from PDVSA 2020 that
 defaulted in 2019.
- The rest of the presentation goes into more detail on multiple matters yet in the end we think markets will use seven different aspects to differentiate across the bonds, with the following page detailing how it impacts each bond.
 - VENZ/PDVSA: Very important: Unsurprisingly this will be a key differentiator. An eventual restructuring process is likely to be very different for the two entities, with VENZ looking like a more ordinary sovereign debt restructuring while PDVSA likely has to go through an insolvency procedure and reorganisation to settle all claims. While this doesn't prevent recovery rates eventually being similar, the process will likely be very different.
 - 2. The total claim: Very important: The bonds have very different coupons and claims thus accrue at very different rates. A restructuring can choose to ignore this but we think it will matter, especially given the size.
 - 3. Statute of limitation/maturity: Moderately important: The actual prescription period is not 100% clear, yet for now the assumption should be that it has been handled by legal representatives of both sides.
 - 4. CAC strength: Moderately important: They differ materially across bonds and will drive pricing in the near term yet in the end we think it's unlikely to lead to materially different recovery values.
 - 5. Collateral: Very important: As the only one, PDVSA 2020 is collateralised by 50.1% of Citgo Holdings.
 - 6. Real money holdings as % outstanding: Moderately important: Since this can give an idea of where demand will be higher for certain bonds in the near term, it can matter for differentiating between bonds.
 - 7. Potential share in the index: Important near term: In particular, we think it's important to track the bonds that potentially would not qualify for index inclusion, even as all the other bonds are re-weighted.

Bond Overview | Summary (Continued)

We see seven key drivers when it comes to differentiating between the bonds – whether it's VENZ/PDVSA, the size of the claim, potential statute of limitation issue, CAC strength, collateral, real money holdings and the potential size in the index.

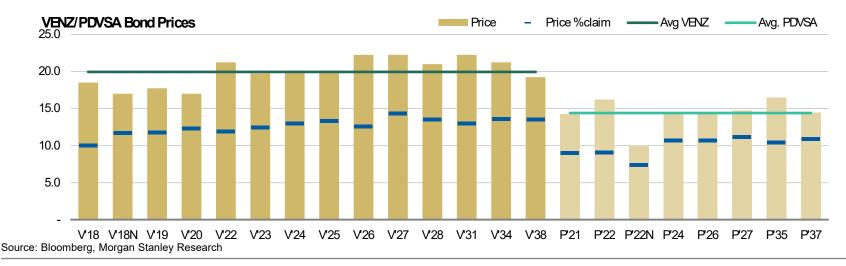
				Final claim with	Potential Maturity Statute of		Real money holdings as %	Potential index	
Bond	Security	Quoted Price	Price %Claim	original coupon	Limitation Issue	CAC strenth	Collateralised	outstanding	share (bp)
VENZ 18	VENZ 13 5/8 08/15/18	18.3	9.9	185	3	1		0%	0.0
VENZ'18N	VENZ 7 12/01/18	16.5	11.4	145	2	2		3%	0.0
VENZ'19	VENZ 7 3/4 10/13/19	17.3	11.4	151	2	3		21%	3.2
VENZ20	VENZ 6 12/09/20	16.5	11.9	138	2	3		8%	1.8
VENZ22	VENZ 12 3/4 08/23/22	20.8	11.6	179	1	3		6%	3.9
VENZ23	VENZ 9 05/07/23	19.3	12.2	158	1	3		15%	2.6
VENZ24	VENZ 8 1/4 10/13/24	19.5	12.7	154		3		20%	3.5
VENZ25	VENZ 7.65 04/21/25	19.8	13.2	150		3		19%	2.2
VENZ26	VENZ 11 3/4 10/21/26	21.8	12.3	176		3		9%	4.2
VENZ27	VENZ91/409/15/27	21.8	14.0	156		1		17%	5.5
VENZ28	VENZ91/405/07/28	20.5	13.2	156		3		22%	2.8
VENZ'31	VENZ 11.95 08/05/31	21.8	12.7	172		3		13%	5.8
VENZ'34	VENZ93/801/13/34	20.8	13.3	156		2		6%	2.1
VENZ'38	VENZ 7 03/31/38	18.8	13.2	142		3		29%	1.8
PdVSA'20	PDVSA 8 1/2 10/27/20	85.7	61.9	138		1	1	69%	11.4
PdVSA'21	PDVSA 9 11/17/21	14.8	9.3	158	2	1		32%	2.4
PdVSA'22	PDVSA 12 3/4 02/17/22	16.5	9.2	179	1	1		11%	3.1
PdVSA'22N	IPDVSA610/28/22	10.0	7.4	136	1	1		38%	0.0
PdVSA'24	PDVSA 6 05/16/24	14.8	10.8	136		1		35%	4.9
PdVSA'26	PDVSA 6 11/15/26	14.8	10.8	136		1		35%	4.5
PdVSA'27	PDVSA 5 3/8 04/12/27	15.0	11.3	132		1		34%	3.0
PdVSA'35	PDVSA 9 3/4 05/17/35	16.5	10.4	159		1		29%	3.0
PdVSA'37	PDVSA 5 1/2 04/12/37	14.8	11.1	133		1		40%	1.5

Source: Bloomberg, Morgan Stanley Research

Bond Overview | Bond Price Differentiations Today

Multiple factors matter for bond valuations today, including claims, CACs, maturities and index inclusion.

- Market preferring VENZ over PDVSA: VENZ trades on average five points higher than PDVSA. Without our eventual
 recovery value estimates it's hard to assess what difference is warranted yet we think it can easily narrow from here
 given there is a scenario where they recover at similar values, even if restructured differently.
- Within VENZ, claims, CACs, maturities and index inclusion matter to markets: VENZ 27 is preferred due to not having CACs and a relatively high coupon, with VENZ 26 and 31 also highest in price due to the very high coupons. VENZ 22 should be higher due to its high coupon as well yet seems to suffer due to having matured already and thus being at higher risk of being prescribed. Overall, most of the matured bonds appear to suffer when looking at the price relative to claims. VENZ 18 is the lowest-priced bond likely due to even higher statute of limitation risks and a low chance of being added to the index in a re-weighting.
- In PDVSA, claims and index inclusion matter to markets: Most claims appear fairly priced on a relative basis, with PDVSA 12.75% 22 and PDVSA 35 higher in cash due to higher claims – indeed, both could be a bit higher without looking rich. PDVSA 6% 22 clearly suffers from the lack of index inclusion and potential OID issue (which may not be unique to this bond). Matured bonds again trade cheaper, just as with the sovereign.



Bond Overview | A Simple Near-Term Valuation Framework

Positioning for near-term strength as technicals stay strong leaves us favouring PDVSA over VENZ, with PDVSA 12.75% 22, VENZ 2022 and VENZ 2026 preferred.

- **Prices can be higher than normal defaulted bonds due to the high accrued:** Given the significant amount of accrued, it's important to work with the price as a share of the total claim. We make an arbitrary assumption of 15 for VENZ and a lower 13 for PDVSA to gauge near-term trading levels. This thus fully accounts for the different claims.
- Adding idiosyncratic factor adjustments: We add individual bond adjustments such as index exclusions, higherthan-average prescription risk (defined as original maturity+6y being ahead of the agreed 2028 tolling agreement), CACs and other reasons. The PDVSA 6% 2022 is hard to assess its historical discount.
- Overall this leaves an average cash price for VENZ of 24 (18% upside) and 18.5 for PDVSA (30% upside).

				Average claim				
		Quoted	Price %	of 15 for VENZ,	Adjustment due		Implied	%change
Bond	Security	Price	Claim	13 for PDVSA	to specific bond	Adjustment reason	price	from today
VENZ'18	VENZ 13 5/8 08/15/18	18.5	10.0	15	-1.5	Not in index, highest prescription risk	24.9	35%
VENZ'18N	VENZ 7 12/01/18	17.0	11.7	15	-1.0	Not in index, medium prescription risk	20.3	19%
VENZ 19	VENZ 7 3/4 10/13/19	17.8	11.8	15	-0.5	Medium prescription risk	21.9	23%
VENZ20	VENZ 6 12/09/20	17.0	12.3	15	-0.5	Medium prescription risk	20.1	18%
VENZ22	VENZ 12 3/4 08/23/22	21.3	11.9	15	0.0	-	26.8	26%
VENZ23	VENZ 9 05/07/23	19.8	12.5	15	0.0	-	23.8	20%
VENZ24	VENZ 8 1/4 10/13/24	20.0	13.0	15	0.0	-	23.0	15%
VENZ25	VENZ 7.65 04/21/25	20.0	13.4	15	0.0	-	22.5	12%
VENZ26	VENZ 11 3/4 10/21/26	22.3	12.6	15	0.0	-	26.5	19%
VENZ27	VENZ 9 1/4 09/15/27	22.3	14.3	15	1.0	No CACs	24.9	12%
VENZ28	VENZ 9 1/4 05/07/28	21.0	13.5	15	0.0	-	23.3	11%
VENZ'31	VENZ 11.95 08/05/31	22.3	13.0	15	0.0	-	25.8	16%
VENZ'34	VENZ 9 3/8 01/13/34	21.3	13.6	15	0.5	Slightly better CACs	24.2	14%
VENZ'38	VENZ 7 03/31/38	19.3	13.6	15	0.0	-	21.3	11%
PdVSA'20	PDVSA 8 1/2 10/27/20	85.5	61.8					
PdVSA'21	PDVSA 9 11/17/21	14.3	9.0	13	-0.5	Medium prescription risk	19.8	39%
PdVSA'22	PDVSA 12 3/4 02/17/22	16.3	9.1	13	0.0	-	23.3	43%
PdVSA'22N	PDVSA 6 10/28/22	10.0	7.4	13	-1.5	Not in index, highest OID/validity issue	15.6	56%
PdVSA'24	PDVSA 6 05/16/24	14.5	10.7	13	0.0	-	17.7	22%
PdVSA'26	PDVSA 6 11/15/26	14.5	10.7	13	0.0	-	17.7	22%
PdVSA'27	PDVSA 5 3/8 04/12/27	14.8	11.2	13	0.0	-	17.2	17%
PdVSA'35	PDVSA 9 3/4 05/17/35	16.5	10.4	13	0.0	-	20.6	25%
PdVSA'37	PDVSA 5 1/2 04/12/37	14.5	10.9	13	0.0	-	17.3	19%
aan Stan	lev Research							

Source: Bloomberg, Morgan Stanley Research

Bond Details | Past Due Interest (PDI) and Claims

With most bonds in default since 2017, there is a significant amount of PDI that has built up. While an eventual restructuring can deal with it on an ad hoc basis, we see some basic criteria for calculating claims as of today.

- Contracts tend to state that the current coupon continues until claims are settled: Some bond contracts specify how interest should be accounted for beyond a missed payment (at least the prospectus does, given that we often don't have access to the indenture or fiscal agency agreement).
- For instance, VENZ 7% 2018, 2019, 2022, 2023 all have the following:
 - If the Issuer shall fail to redeem the Notes when due, *interest shall continue to accrue beyond the due date until actual redemption of the Notes* but not beyond the fourteenth day after notice has been given by the Fiscal Agent that the funds required for redemption have been provided to the Fiscal Agent.
- This suggests that the original coupon should be used to calculate the claim, even if it is not 100% clear what actual interest rate should be used.
- For some bonds like VENZ 13.625% 2018 and all PDVSA bonds there appears to be no mention of the interest due post a missed payment. While this could mean nothing is due, it could just be that it was not specified in the prospectus but is elsewhere. For now, our assumption is that interest continues to accrue at the original coupon rate for all bonds.
- An actual restructuring can deal with claims in a variety of ways: Once restructuring talks actually begin between the debtor and the creditors, the PDI can be dealt with in various ways. For example, it can be included as simply additional face value, it can be paid off in the form of a separate bond or it can simply be ignored (unlikely in this case given the amounts). Note that in this case, there are some VENZ bonds that have already gone through this process to establish claims and did account for the coupon continuing post maturity.
- NY statutory interest only comes into play once judgements established: The alternative approach is to use the NY Statutory interest rate of 9% on all missed claims. However, our understanding is that this only applies once a final judgement has been established. At that point, pre- and post-judgement interest of 9% is applied to all missed payments, including interest on coupons from the original maturity date up until the final judgement date.

Bond Details | Past Due Interest (PDI) and Claims (Continued)

From an outstanding amount of US\$58.2 billion today, the total claim could be up to US\$89 billion once accounting for past due interest (including claims already being litigated). At a bond level, claims vary from 132 to as high at 184.

					Claims (points)		Cla	lions)	Price % claims	
	Bond	Quoted Price	cpn	Last Paid Coupon Date	Actual PDI (missed coupons)	Final claim with original coupon	Amt. Out.	PDI	Final claim with original coupon	Final claim with original coupon
-	VENZ'18	18.5	13.625	15-Aug-2017	14	185	1,053	890	1,943	10.0
,	VENZ'18N	17.0	7.000	01-Jun-2017	11	145	1,000	449	1,449	11.7
,	VENZ'19	17.8	7.750	13-Apr-2017	19	151	2,496	1,266	3,762	11.8
,	VENZ20	17.0	6.000	09-Jun-2017	21	138	1,500	575	2,075	12.3
,	VENZ22	21.3	12.750	23-Aug-2017	64	179	3,000	2,365	5,365	11.9
,	VENZ23	19.8	9.000	07-May-2017	54	158	2,000	1,166	3,166	12.5
,	VENZ24	20.0	8.250	13-Apr-2017	54	154	2,496	1,339	3,835	13.0
,	VENZ:25	20.0	7.650	21-Apr-2017	50	150	1,600	796	2,396	13.4
	VENZ26	22.3	11.750	21-Apr-2017	76	176	3,000	2,293	5,293	12.6
	VENZ27	22.3	9.250	15-Sep-2017	56	156	4,000	2,221	6,221	14.3
	VENZ28	21.0	9.250	07-May-2017	56	156	2,000	1,111	3,111	13.5
	VENZ'31	22.3	11.950	05-Aug-2017	72	172	4,200	3,013	7,213	13.0
	VENZ 34	21.3	9.375	13-Jul-2017	56	156	1,500	844	2,344	13.6
	VENZ'38	19.3	7.000	30-Sep-2017	42	142	1,250	525	1,775	13.6
	PdVSA'20	85.5	8.500	27-Apr-2019	13	138	1,684	645	2,329	61.8
	PdVSA'21	14.3	9.000	17 - May-2017	41	158	2,394	1,390	3,785	9.0
	PdVSA'22	16.3	12.750	17-Aug-2017	57	179	3,000	2,372	5,372	9.1
	PdVSA'22N	10.0	6.000	28-Oct-2017	30	136	3,000	1,080	4,080	7.4
	PdVSA'24	14.5	6.000	16-May-2017	36	136	5,000	1,801	6,801	10.7
	PdVSA'26	14.5	6.000	15-May-2017	36	136	4,500	1,621	6,121	10.7
	PdVSA'27	14.8	5.375	12-Oct-2017	32	132	3,000	968	3,968	11.2
	PdVSA'35	16.5	9.750	17-May-2017	59	159	3,000	1,756	4,756	10.4
_	PdVSA'37	14.5	5.500	12-Oct-2017	33	133	1,500	495	1,995	10.9
	VENZ	20.5	9.7		52.0	160.6	31,095	18,853	49,948	12.8
	PDVSA	18.8	7.5		38.6	144.8	27,078	12,128	39,206	13.2
	PDVSA ex-20	14.4	7.4		40.3	145.2	25,394	11,483	36,877	10.0
	TOTAL	19.7	8.7		45.8	153.3	58,173	30,981	89,154	13.0
Source: Bloomberg, Me	organ Stanl	ey Research								

Bond Details | Legal Summary

There are broadly four group of legal clauses across the VENZ/PDVSA complex, varying from no collective action clauses (CACs) to lower thresholds. Yet the details matter as there are specific thresholds for major amendments within each group.

- All VENZ/PDVSA bonds are issued under NY law.
- Secondary trading now allowed for all bonds apart from VENZ 2036: All bonds are currently covered under the General Licenses 3I (for VENZ) and 9H (for PDVSA) that allow secondary trading. The exception is for VENZ 2036 that was issued domestically and has not been sold outside of Venezuela as far as we know.
- Statute of limitation/prescription should in theory not be an issue until 2028: Some bonds list their own prescription periods and there is the NY state standard six-year prescription period. The risk is that claims on principal or interest payments due more than six years ago could be at risk of no longer being valid. However, a group of creditors and their legal representatives have achieved a tolling agreement until 2028 with Venezuela, both the opposition-controlled National Assembly and the Maduro government, and have had it recognised by US courts.
- PDVSA bonds issued under a trust indenture.
 - Unmatured but accelerated bonds (which require 25% of holders to accelerate) will need to litigate via the trustee, which in turns means offering the trustee security or indemnity and that proceeds would also be shared.
 - Only in order to enforce actual missed principal or interest payments can the individual holder litigate.
- VENZ bonds issued under a fiscal agency agreement.
 - Individual bondholders can litigate more freely and do not have to share proceeds either.
 - However, a bond still needs to be accelerated (25%) before non-matured principal amounts can be litigated for.
- Collective actions clauses differ significantly (see following two slides).
- **Original issue discounts (OID):** Some bonds were initially issued at par domestically, for instance from PDVSA to the central bank, but then sold abroad with significant discounts. It's not clear how this will be treated in a restructuring. However, there is a chance the OID amounts could be treated as unmatured interest, resulting in a much smaller claim.
- Validity of claims: Another issue is whether some of the bonds issued had the necessary authorisations at the time of issuance, for instance from the National Assembly. Again, it's unclear how this will be resolved.
- Latest on legal moves: VENZ 2025 and 2034 are the only bonds to have been accelerated to our knowledge. However, every other VENZ bond has also seen a small subset of holders litigate and has made it as far as having claims established and will likely participate in the Citgo auction.

Bond Details | Collective Action Clauses

There are broadly four groups of legal clauses across the VENZ/PDVSA complex, varying from no collective action clauses to lower thresholds. Yet the details matter as there are specific thresholds for major amendments within each group.

- Bonds can be split into four broad groups depending on their legal clauses:
 - 1. **PDVSA bonds:** These all have no collective action clauses. However, it's also worth bearing in mind that in case PDVSA was to eventually go through a reorganisation process, claims could still be resolved via majority voting across classes that would be specified at the time.
 - 2. VENZ Group A: These are the oldest bonds and were issued from 1997. At a headline level it appears they have no collective action clauses, requiring all holders to agree to major amendments such as the due date and principal/interest reductions. However, there are major amendments typically included here that are not explicitly listed (see slide 13). This includes having a lower level of 50.1% of outstanding to change the governing law or sovereign immunity definition. This would appear to open up these bonds to more aggressive exit consents, perhaps reducing the effectiveness of some other clauses having no CACs.
 - 3. VENZ Group B: These were issued from 2003. 85% required for major amendments across all typical amendments. 67% for all others.
 - 4. VENZ Group C: These were issued from 2005. 75% required for major amendments across all typical amendments. 67% for all others.
- CACs important to know but end difference in recovery unlikely to be significant: The fact that there are no
 aggregate CACs is a negative for a restructuring, making holdouts more likely. However, we see several reasons for
 the individual CAC levels not being as important to an eventual deal. First, even just getting 75% is high, meaning a
 significant majority of creditors have to agree to it. Second, the VENZ bonds without CACs appear to be open to exit
 consents. Third, the PDVSA bonds are likely to undergo a reorganisation process where majority voting thresholds can
 come in under newly created classes of claims (e.g., all bonds).

Bond Details | Legal Characteristics Summary

Venezuela	General license inclusion	Issue Date	Notional	Governing Law	Legal framework	Details	CACS	Res. Matter	Exceptions category	Non-Res. Matter	Amt Needed to block CACs	Amt Needed to accelerate	Accelerated?	Some claims established?	Bond Prescription Interest	Bond Prescription Principal
VEN Aug-2018 (old)	31	8/6/1998	753	NY	FAA	Aug 6, 1998 - Chase Manhattan Bank	Ν	-	А	67	-	188		Y	-	5
VEN Aug-2018 (new)	31	9/27/2001	300	NY	FAA	Aug 6, 1998 - Chase Manhattan Bank	Ν	-	А	67	-	75		Y	-	5
VEN Dec-2018	31	12/1/2003	1,000	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	85	В	67	150	250		Y	3	10
VEN 2019	31	10/13/2009	2,496	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	624	624		Y	3	10
VEN Dec-2020	31	12/9/2005	1,500	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	375	375		Y	3	10
VEN 2022	31	8/23/2010	3,000	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	750	750		Y	3	10
VEN 2023	31	5/7/2008	2,000	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	500	500		Y	3	10
VEN 2024	31	10/13/2009	2,496	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	624	624		Y	3	10
VEN 2025	31	4/21/2005	1,600	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	400	400	Y	Y	3	10
VEN 2026	31	10/21/2011	3,000	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	750	750		Y	3	10
VEN 2027	31	9/18/1997	4,000	NY	FAA	Sep 3, 1997 - Chase Manhattan Bank	Ν	-	А	67	-	1,000		Y	-	5
VEN 2028	31	5/7/2008	2,000	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	500	500		Y	3	10
VEN 2031	31	8/5/2011	4,200	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	67	1,050	1,050		Y	3	10
VEN 2034	31	1/14/2004	1,500	NY	FAA	Aug 6, 1998 - Chase Manhattan Bank	Y	85	В	67	225	375	Y	Y	?	?
VEN 2038	31	11/15/2007	1,250	NY	FAA	Jul 25, 2001 - Deutsche Bank Trust Co	Y	75	С	.67	313	313		Y	3	10

	General license			Governing	Legal		1		Exceptions Non-	Res. Amt Need	ed to Amt	t Needed to			Prescription	Prescription
PDVSA	inclusion	Issue Date	Notional	Law	framework	Legal framework	CACS	Res. Matter	category Mat	ter block C	ACs ac	ccelerate	Accelerated?	Accelerated?	Interest	Principal
PDVSA 2020 (Secured)	9H	10/28/2016	1,684	NY	Trust indenture	MUFG Union Bank	Ν	-	-	-		421			?	?
PDVSA 2021	9H	11/17/2011	2,394	NY	Trust indenture	Wilmington Trust	Ν	-		-		599			?	?
PDVSA Feb-2022	9H	2/17/2011	3,000	NY	Trust indenture	Wilmington Trust	Ν	-		-		750			6	6
PDVSA Oct-2022	9H	10/28/2014	3,000	NY	Trust indenture	Law Debenture Trust Co	Ν	-		-		750			?	?
PDVSA 2024	9H	5/16/2014	5,000	NY	Trust indenture	Law Debenture Trust Co	Ν	-		-		1,250			?	?
PDVSA 2026	9H	11/15/2013	4,500	NY	Trust indenture	Law Debenture Trust Co	Ν	-		-		1,125			6	6
PDVSA 2027	9H	4/12/2007	3,000	NY	Trust indenture	The Bank of New York	Ν	-		-		750			6	6
PDVSA 2035	9H	5/17/2012	3,000	NY	Trust indenture	Wilmington Trust	Ν	-		-		750			?	?
PDVSA 2037	9H	4/12/2007	1,500	NY	Trust indenture	The Bank of New York	Ν	-		-		375			6	6

Bond Details | Legal Characteristics Summary (Continued)

		Exceptions category			
Thresholds needed to apply major Short Description	amendments to all bonds Complete language	A Issued from 1997 e.q. VENZ 2027	B Issued from 2003 e.g. VENZ 2034	C Issued from 2005 e.g. VENZ 2026	
Due date	Change the due date for the payment of the principal of (or premium, if any) or any installment of interest on any Bond	100%	85%O	75%O	
Principal/interest reduction	Reduce the principal amount of any Bond, the portion of such principal amount that is payable upon acceleration of the maturity of such Bond, the interest rate thereon or the premium payable upon redemption thereof	100%	85%O	75%O	
Currency	Change the coin or currency in which or the required place or places at which payment with respect to interest, premium or principal in respect of the Bonds is payable	100%	85%O	75%O	
Early redemption	Shorten the period during which the Republic is not permitted to redeem the Bonds, or permit the Republic to redeem the Bonds if, prior to such action, the Republic is not permitted to do so	50.1%O, 66.7%Q	85%O	75%O	
Edit voting shares	Reduce the proportion of the principal amount of the Bonds the vote or consent of the holders of which is necessary to modify, amend or supplement the Fiscal Agency Agreement or the terms and conditions of the Bonds or to make, take or give any request, demand, authorization, direction, notice, consent, waiver or other action provided thereby or hereby to be made, taken or given	100%	85%O	75%O	
Tax payments	Change the obligation of the Republic to pay Additional Amounts, if any, pursuant hereto	100%	85%O	75%O	
"Outstanding" debt definition	Amend the definition of "Outstanding" with respect to the Bonds	50.1%O, 66.7%Q	85%O	75%O	
Governing Law	Change the governing law provisions of the Bonds	50.1%O, 66.7%Q	85%O	75%O	
Immunity	Change the Republic's appointment of an agent for the service of process or the Republic's agreement not to claim and to waive irrevocably any immunity in respect of any Related Proceeding	50.1%O, 66.7%Q	85%O	75%O	
Ranking of bonds	Change the ranking of the Bonds as set forth in the Bonds	50.1%O, 66.7%Q	85%O	75%O	
Amend events of default	In connection with an offer to acquire all or any portion of the Bonds where the consideration consists of either cash, new securities to be issued by the Republic, Banco Central or any Governmental Agency, or any combination of the foregoing, amend any Event of Default	50.1%Q, 66.7%Q	85%O	75%O	
All others		66.7%	66.7%	66.7%	

O = outstanding amount, Q = share of bonds represented at quorate meeting

Bond Details | EM Benchmark Re-weighting

We estimate that a potential index re-weighting could result in up to US\$1.5bn market value or US\$8.6bn notional demand for VENZ/PDVSA bonds. While there are EM-dedicated funds with existing large exposures, holdings are very concentrated.

- All VENZ/PDVSA bonds were excluded from the EMBI indices over a five-month period from July-November
 2019 as a result of sanctions that prevented any US investor, inter alia, from buying bonds. It was not a result of default.
- It was a unique exclusion in that while weights were put to zero, the bonds remained in the index.
- There is a reversal event in case of easing of trading restrictions and liquidity improving: It's hard to say when this could occur. Yet the clear liquidity pick-up following sanctions easing and the fact that the secondary trading sanctions do not have a six-month expiry like the oil sanctions do suggest that it could happen in the next few months.
- Once included, the weight of **the combined complex will be around 0.73% in the EMBI Diversified and 0.86% in the EMBIG.** This is similar to the weights when the bonds were excluded (0.6% and 1%).
- In terms of potential buying, we estimate an upper end of US\$2.7 billion market value or US\$14.2 billion: This brings index holdings to around 27% of outstanding bonds on average yet also assumes existing exposures are zero.
- A more reasonable assumption of potential buying would be closer to US\$1.5 billion market value or US\$8.6 billion notional: A subset of EM-dedicated real money funds (60 funds, US\$66 billion AUM) suggests that 33% of funds have zero exposure and another 40% have some exposure but below the potential new benchmark weight. Assuming all the funds that are underweight to various extents bring their exposure to market-weight, and extrapolating to the broader EMBI universe, it suggests potential buying of around US\$1.5 billion in market value, or US\$8.6 billion notional. Of course even this is an estimate, as not all funds may want to add, either due to a negative view of the bonds or potential ESG reasons.
- Important bond-level exclusions
 - VENZ 2036 never entered the index. Given that it has never traded externally, it's unlikely to be included.
 - VENZ 13% 2018 and 7% 2018 as they fell below the required outstanding maturity and were thus excluded from the index before the default. There is an argument that these could be included again as today there is no difference between these and the other bonds that are past their initial maturity.
 - **PDVSA 2022** was issued in a private placement and was never included in index. It is unclear whether this will be included in the future, yet it will likely depend on liquidity and the inclusion of previously matured bonds.

Bond Details | EM Benchmark Re-weighting (Continued)

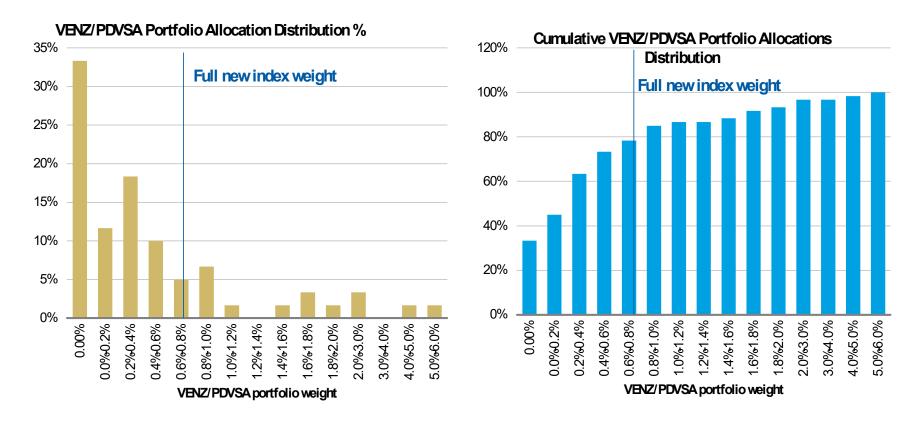
Once re-weighted, we estimate the weight of VENZ/PDVSA would be 0.73% in the EMBI Diversified and 0.86% in the EMBIG. On average, the index would be holding around 26% of the outstanding of each bond if every fund was market-weight.

			EMBI	embi div				%
ISIN	Security	Price	Global wgt.	wgt.	Mkt value	Notional	Outstdng.	Outstdng.
USP7807HAV70	PDVSA 8 1/2 10/27/20	84.0	0.14	0.11	0.38	0.45	1.68	27%
USP7807HAP03	PDVSA 9 11/17/21	12.4	0.03	0.02	0.08	0.66	2.39	28%
USP7807HAM71	PDVSA 12 3/4 02/17/22	13.2	0.04	0.03	0.10	0.78	3.00	26%
USP7807HAT25	PDVSA 6 05/ 16/ 24	12.3	0.06	0.05	0.17	1.34	5.00	27%
USP7807HAR68	PDVSA 6 11/15/26	12.4	0.05	0.04	0.15	1.20	4.50	27%
XS0294364954	PDVSA 5 3/8 04/12/27	12.2	0.03	0.03	0.10	0.81	3.00	27%
USP7807HAQ85	PDVSA 9 3/4 05/17/35	12.6	0.04	0.03	0.10	0.80	3.00	27%
XS0294367205	PDVSA 5 1/2 04/12/37	12.2	0.02	0.01	0.05	0.40	1.50	27%
USP97475AN08	VENZ 7 3/4 10/13/19	15.8	0.04	0.03	0.11	0.67	2.50	27%
USP97475AG56	VENZ 6 12/09/20	15.5	0.02	0.02	0.06	0.39	1.50	26%
USP17625AC16	VENZ 12 3/4 08/23/22	17.4	0.05	0.04	0.13	0.76	3.00	25%
USP17625AA59	VENZ 9 05/07/23	17.0	0.03	0.03	0.09	0.51	2.00	25%
USP97475AP55	VENZ 8 1/4 10/13/24	18.0	0.04	0.03	0.12	0.64	2.50	26%
XS0217249126	VENZ 7.65 04/21/25	18.0	0.03	0.02	0.07	0.40	1.60	25%
USP17625AE71	VENZ 11 3/4 10/21/26	19.0	0.05	0.04	0.14	0.73	3.00	24%
US922646AS37	VENZ 9 1/4 09/15/27	19.1	0.07	0.06	0.19	0.97	4.00	24%
USP17625AB33	VENZ 9 1/4 05/07/28	18.5	0.03	0.03	0.09	0.50	2.00	25%
USP17625AD98	VENZ 11.95 08/05/31	19.0	0.07	0.06	0.20	1.03	4.20	24%
US922646BL74	VENZ 9 3/8 01/13/34	18.6	0.02	0.02	0.07	0.37	1.50	25%
USP97475AJ95	VENZ 7 03/31/38	17.8	0.02	0.02	0.06	0.33	1.25	26%
US922646AT10	VENZ 13 5/8 08/15/18	16.6	0.00	0.00	0.00	0.00	0.75	0%
USP97475AD26	VENZ 7 12/01/18	15.8	0.00	0.00	0.00	0.00	1.00	0%
XS1126891685	PDVSA 6 10/28/22	10.8	0.00	0.00	0.00	0.00	3.00	0%
USP97475AQ39	VENZ 6 1/2 12/29/36		0.00	0.00	0.00	0.00	5.00	0%
Total			0.86	0.73	2.44	13.76	62.87	26%

Source: Bloomberg, Morgan Stanley Research forecasts; Note: EMBI Global and EMBI Div. are our estimated weights in % of the benchmark. Market value is the amount in billions held by benchmarked funds if all are market-weight, which is then translated into notional amounts in the following column. Finally we show this as a share of the bonds outstanding.

Bond Details | Bond Ownership Data

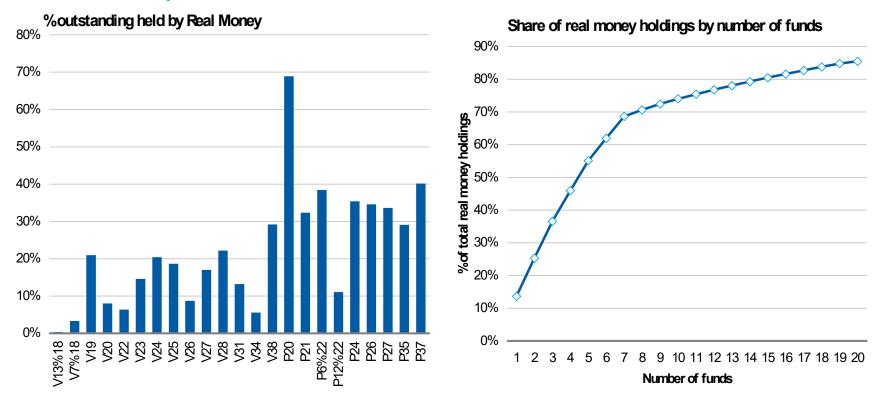
A subset of EM-dedicated real money funds (60 funds, US\$66 billion AUM) suggests that 33% of funds have zero VENZ/PDVSA exposure and another 40% have some exposure but below the potential new benchmark weight.



Source: Bloomberg, Morgan Stanley Research forecasts

Bond Details | Bond Ownership Data (Continued)

Looking at total real money exposures as visible by their current holdings, they hold around US\$15 billion in notional already. However, it's extremely concentrated. For instance, just seven funds hold nearly 70% of the entire real money exposure. Also, there is a clear preference for PDVSA over VENZ.



Source: Bloomberg, Morgan Stanley Research forecasts

Disclosures

Disclosure Section

The information and opinions in Morgan Stanley Research were prepared or are disseminated by Morgan Stanley & Co. LLC and/or Morgan Stanley C.T.V.M. S.A. and/or Morgan Stanley México, Casa de Bolsa, S.A. de C.V. and/or Morgan Stanley Audior Morgan Stanley Proprietary Limited and/or Morgan Stanley Co., Ltd. and/or Morgan Stanley Europe S.E. and/or RMB Morgan Stanley Proprietary Limited and/or Morgan Stanley Audior Morgan Stanley Teix a united and/or Morgan Stanley Audior Morgan Stanley Audior Morgan Stanley Taiwan Limited and/or Morgan Stanley & Co. International plc, Seoul Branch, and/or Morgan Stanley Australia Limited (A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents), and/or Morgan Stanley Mealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents), and/or Morgan Stanley India Company Private Limited having Corporate Identification No (CIN) U22990MH1998PTC115305, regulated by the Securities and Exchange Board of India ("SEBI Registration No. INH00001105), Stock Broker (SEBI Stock Broker Registration No. INZ000244438), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-567-2021) having registered office at 18th Floor, Tower 2, One World Center, Plot- 841, Jupiter Textile Mill Compound, Senapati Bapat Marg, Lower Parel, Mumbai 400013, India Telephone no. +91-22-61181000; Compliance Officer Details: Mr. Anil Shenoy, Tel. No.: +91-22-61181000 or Email: Anil.Shenoy@morganstanley.com; Grievance officer details: Mr. Anil Shenoy, Tel. No.: +91-22-61181000 or Email: ms

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Simon Waever.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflictpolicies. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important Regulatory Disclosures on Subject Companies

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from PETROLEOS DE VENEZUELA SA.

Within the last 12 months, Morgan Stanley has either provided or is providing non-investment banking, securities-related services to and/or in the past has entered into an agreement to provide services or has a client relationship with the following company: PETROLEOS DE VENEZUELA SA.

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.

Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of September 30, 2023)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.

For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

	Coverage Uni	verse	Investm	ent Banking (Clients (IBC)	Other Material Investment Services Clients (MISC)		
		% of		% of	% of Rating		% of Total	
Stock Rating Category	Count	Total	Count	Total IBC	Category	Count	Other MISC	
Overweight/Buy	1350	37%	281	43%	21%	608	39%	
Equal-weight/Hold	1673	46%	303	46%	18%	709	46%	
Not-Rated/Hold	3	0%	0	0%	0%	1	0%	
Underweight/Sell	608	17%	68	10%	11%	225	15%	
Total	3,634		652			1543		

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

Analyst Stock Ratings

Overweight (O or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.

Equal-weight (E or Equal) - The stock's total return is expected to be in line with the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.

Not-Rated (NR) - Currently the analyst does not have adequate conviction about the stock's total return relative to the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Important Disclosures for Morgan Stanley Smith Barney LLC & E*TRADE Securities LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures. For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

Each Morgan Stanley research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC and E*TRADE Securities LLC. This review and approval is conducted by the same person who reviews the research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley & Co. International PLC and its affiliates have a significant financial interest in the debt securities of PETROLEOS DE VENEZUELA SA, Venezuela.

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions.

Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (http://www.morganstanley.com/terms.html). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (http://www.morganstanley.com/terms.html). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/terms.html). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.

Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is

not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

The "Important Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.

To our readers based in Taiwan or trading in Taiwan securities/instruments: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Any non-customer reader within the scope of Article 7-1 of the Taiwan Stock Exchange Recommendation Regulations accessing and/or receiving Morgan Stanley Research is not permitted to provide Morgan Stanley Research to any third party (including but not limited to related parties, affiliated companies and any other third parties) or engage in any activities regarding Morgan Stanley Research which may create or give the appearance of creating a conflict of interest. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments. Certain information in Morgan Stanley Research was sourced by employees of the Shanghai Representative Office of Morgan Stanley Asia Limited for the use of Morgan Stanley Asia Limited.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V which is regulated by Comision Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Bank Asia Limited; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Bank Asia Limited, Singapore Branch (Registration number T14FC0118J); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742,

which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited having Corporate Identification No (CIN) U22990MH1998PTC115305. regulated by the Securities and Exchange Board of India ("SEBI") and holder of licenses as a Research Analyst (SEBI Registration No. INH000001105); Stock Broker (SEBI Stock Broker Registration No. INZ000244438), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-567-2021) having registered office at 18th Floor, Tower 2, One World Center, Plot- 841, Jupiter Textile Mill Compound, Senapati Bapat Marg, Lower Parel, Mumbai 400013, India Telephone no. +91-22-61181000; Compliance Officer Details: Mr. Anil Shenoy, Tel. No.: +91-22-61181000 or Email: Anil.Shenoy@morganstanley.com; Grievance officer details: Mr. Anil Shenoy, Tel. No.: +91-22-61181000 or Email: msic-compliance@morganstanley.com; in Canada by Morgan Stanley Canada Limited; in Germany and the European Economic Area where required by Morgan Stanley Europe S.E., authorised and regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin) under the reference number 149169; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents, Morgan Stanley & Co. International plc, authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, disseminates in the UK research that it has prepared, and research which has been prepared by any of its affiliates, only to persons who (i) are investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Order"); (ii) are persons who are high net worth entities falling within Article 49(2)(a) to (d) of the Order; or (iii) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000, as amended) may otherwise lawfully be communicated or caused to be communicated. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and A2X (Ptv) Ltd. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), and is directed at Professional Clients only, as defined by the DFSA. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria to be a Professional Client. A distribution of the different MS Research ratings or recommendations, in percentage terms for Investments in each sector covered, is available upon request from your sales representative.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

The issuers and/or fixed income products recommended or discussed in certain fixed income research reports may not be continuously followed. Accordingly, investors should regard those fixed income research reports as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or individual fixed income products.

Morgan Stanley may hold, from time to time, material financial and commercial interests regarding the company subject to the Research report.

Registration granted by SEBI and certification from the National Institute of Securities Markets (NISM) in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Investment in securities market are subject to market risks. Read all the related documents carefully before investing.

cc3010

The Americas

+1 212 761 4000

1585 Broadway New York, NY 10036-8293 United States

6-8293 London E14 4AD United Kingdom +44 (0)20 7425 8000

Europe

20 Bank Street, Canary Wharf

Japan

1-9-7 Otemachi, Chiyoda-ku Tokyo 100-8104 Japan +81 (0) 3 6836 5000

Asia/Pacific

1 Austin Road West Kowloon Hong Kong +852 2848 5200