CREDIT OPINION
16 October 2024

Update

Send Your Feedback

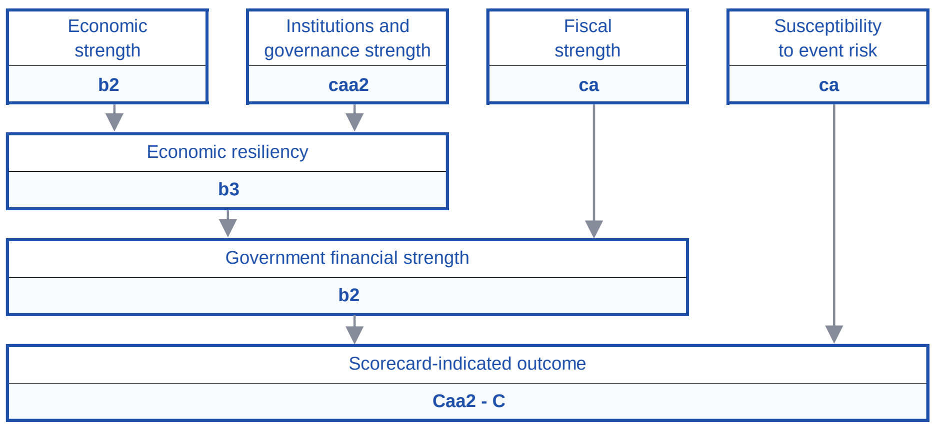
Government of Zambia – Caa2 stable

Regular update

Summary

Zambia's credit profile primarily reflects its exceptionally high government debt levels, weak institutions and difficulties in covering large funding requirements. Despite the financial relief achieved through eurobond restructuring in 2024, Zambia's government debt remains above 100% of GDP. Debt affordability continues to be strained, and access to funding remains constrained. Economic challenges related to dependency on a single export commodity, along with significant environmental and social risks, persist. These credit weaknesses are counterbalanced by an improving outlook in the mining sector and support from official lenders.

Exhibit 1
Zambia's credit profile is determined by four factors



Source: Moody's Ratings

Credit strengths

» Large commodity endowment and strong population growth

» Relatively stable political environment and low geopolitical risks

» Support from official lenders

Credit challenges

» High government debt burden

» High external vulnerability risk due to undiversified exports and external debt pressures

» Institutional weaknesses, reflected in low fiscal policy credibility and effectiveness

Contacts

John Walsh, CFA +44.20.3314.2442
Analyst
john.walsh@moodys.com

Marco Santaniello +44.20.3314.2032
Ratings Associate
marco.santaniello@moodys.com

Lucie Villa +33.1.5330.1042
Senior Vice President
lucie.villa@moodys.com

Matt Robinson +44.20.7772.5635
Associate Managing Director
matt.robinson@moodys.com

Marie Diron +44.20.7772.1968
MD-Global Sovereign Risk
marie.diron@moodys.com

Rating outlook

The stable outlook balances the debt and liquidity relief achieved through the bond restructuring and support from development institutions and the donor community against continued high financing requirements of the government and the current climate shock. Increased social spending pressures and slowing growth could lead to liquidity challenges in the near term. Zambia's strong performance under its IMF Extended Credit Facility (ECF) should allow it to continue to access concessional financing from international financial institutions, underpinning governance reform efforts. This continuing support will be critical in mitigating the credit impact of the current climate shock and accessing sufficient financing to avoid re-default. However, we expect government access to external liquidity beyond concessional sources to remain strained, and recent incremental governance improvements to take time to support growth, fiscal sustainability and reopening of access to international capital markets.

Factors that could lead to an upgrade

We would likely upgrade the rating if additional financing sources were identified to reliably meet government borrowing needs and ease liquidity risks. Furthermore, higher, sustained economic growth that allows the government to significantly reduce its debt burden and increase external buffers would also support a higher rating.

Factors that could lead to a downgrade

We would likely downgrade the rating if the probability of re-default and additional debt restructuring resulting in sizeable investor losses were to increase. This development could come as a result of continued drought conditions beyond current expectations that severely limit economic growth and exports, and weigh on government liquidity, or if the government were to lose the support of international financial institutions and access to concessional financing.

Key indicators

Exhibit 2

Zambia	2018	2019	2020	2021	2022	2023	2024F	2025F
Real GDP (% change)	4.0	1.4	-2.8	6.2	5.2	5.4	2.1	5.9
Inflation rate (% change average)	7.5	9.2	15.7	22.0	11.0	11.0	14.9	11.3
Gen. gov. financial balance/GDP (%)	-8.3	-9.4	-13.8	-8.1	-7.8	-6.6	-7.9	-5.7
Gen. gov. primary balance/GDP (%)	-3.5	-2.5	-7.8	-2.1	-1.6	0.3	-1.9	0.8
Gen. gov. debt/GDP (%)	75.2	94.4	140.0	111.0	99.5	115.2	108.7	94.9
Gen. gov. debt/revenues (%)	387.3	462.6	690.7	496.4	488.0	566.8	504.5	434.5
Gen. gov. interest payment/revenues (%)	24.5	33.9	29.3	27.2	30.6	33.9	27.7	29.8
Current account balance/GDP (%)	-1.3	0.6	11.8	11.9	3.7	-1.9	0.5	3.5
External debt/CA receipts (%)[1]	241.2	342.5	337.7	225.2	223.0	238.5	261.2	308.8
External vulnerability indicator (EVI) [2]	91.6	185.5	191.2	219.1	204.8	259.0	93.3	72.5

[1] Current Account Receipts
[2] (Short-Term External Debt + Currently Maturing Long-Term External Debt + Total Nonresident Deposits Over One Year)/Official Foreign Exchange Reserves

Source: Moody's Ratings

Detailed credit considerations

We assess Zambia's **economic strength** at “b2”, reflecting the economy's small size, low per capita income and persistent structural challenges, notwithstanding its large commodity endowment and favourable demographics. Structural weaknesses, including low economic and export diversity, and exposure to physical climate risks such as drought and flooding, continue to weigh on the economy. We expect investor confidence to improve following the resolution of the eurobond debt restructuring; however, perhaps not until the current drought conditions are alleviated and the domestic energy supply stabilises. The final score includes a two-notch negative adjustment from the initial score of ba3 to capture the economy's low resilience to shocks, including volatility in prices and production of copper, persistent unfavourable weather conditions and business environment developments that weigh on investor confidence, amid a lack of credible measures to address fiscal and external challenges.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on https://ratings.moodys.com for the most updated credit rating action information and rating history.

We assess Zambia's **institutions and governance strength** at “caa2”, reflecting low fiscal policy credibility and effectiveness, a track record of arrears and the recent default. Zambia faces significant institutional challenges in the areas of government effectiveness, rule of law and control of corruption, as measured by the Worldwide Governance Indicators. Frequent changes to the government's mining tax regime have perpetuated the perception of unpredictability in policymaking. The government is beginning to take measures to improve institutional functioning and governance under the auspices of the ongoing IMF programme, but from a low level and a credible reform track record is yet to be established. The score is adjusted by two notches from the initial score of “b3” to reflect the recent default and Zambia's track record of accumulating expenditure arrears (including arrears to external contractors, and to domestic fuel and energy suppliers, and delays in public employees' pension contributions and tax refunds), which indicate a very weak fiscal management capacity.

Zambia's **fiscal strength** score of “ca”, the lowest in our scale, reflects its high public debt burden, which was around 115% of GDP (including debt payment arrears) as of year-end 2023. Large budget deficits, episodes of currency depreciation and the continued accumulation of debt payment arrears led to the increase in debt. Debt affordability metrics continue to be strained: interest payments absorbed around 34% of government revenue in 2023, and we expect this figure to be around 30% in 2024 and 2025 with the resumption of interest payments to eurobond holders. The government's balance sheet remains vulnerable to a further depreciation in the currency because of the high share of foreign-currency debt, and vulnerability of the currency value to shocks in global copper prices and domestic output. We estimate a reduction in the debt stock of around 3% of GDP from the eurobond restructuring, but further debt relief from other commercial creditors will mostly be in the form of maturity extensions and interest rate reductions.

We assess Zambia's **susceptibility to event risk** at “ca”, driven by government liquidity and external vulnerability risks. The rising cost of debt and continued fiscal slippages have put further pressure on the government's liquidity position. This, together with Zambia's vulnerable external position due to its high level of external debt and low export diversity, has exacerbated the sovereign's susceptibility to event risk.

We assess Zambia's **political risk** at “baa” to reflect a stable political environment. The presidential elections were held in August 2021, and the transition of power occurred smoothly despite a tense political climate because of difficult economic conditions. The new administration is engaged with the IMF and has made slow but steady progress in navigating geopolitical issues between various creditor groups throughout the debt restructuring under the G20 Common Framework.

We assess **government liquidity risk** at “ca”, reflecting government borrowing needs to cover debt payments and fiscal deficits at around 18% of GDP in 2024 and 2025, and continued constrained access to funding. The initial score for ease of access to funding at “caa” reflects the government's intermittent access to relatively narrow and underdeveloped domestic capital markets, the volatile nonresident participation in the domestic capital markets and the lack of access to international markets. The one-notch downward adjustment from the initial score to “ca” for high refinancing risk reflects the continued missed payments to other commercial creditors following the eurobond restructuring.

We assess the **banking sector risk** at “ba” to reflect limitations in banking supervision, declining profitability and weak asset quality despite adequate capitalisation.

Lastly, we assess Zambia's **external vulnerability risk** at “ca” to reflect the vulnerability to global copper prices. The prevalence of foreign investors in the local-currency government debt markets also leaves the economy vulnerable to sudden increases in capital outflows. Despite the recent improvement in foreign-exchange reserves, these are low compared with external debt service requirements, which impairs the government's ability to service its external debt obligations. Zambia's external position remains vulnerable to renewed episodes of risk aversion and declines in global copper prices.

ESG considerations

Zambia's ESG credit impact score is CIS-5

Exhibit 3
ESG credit impact score

CIS-5

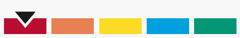
ESG considerations have a pronounced impact on the current rating, which is lower than it would have been if ESG risks did not exist. The negative impact of ESG considerations on the rating is higher than for an issuer scored CIS-4.

Source: Moody's Ratings

ESG considerations weigh heavily on Zambia's ratings, as demonstrated in its **CIS-5** Credit Impact Score, reflecting its exposure to physical climate risks, low wealth levels, weak fiscal metrics and exhausted fiscal space that exacerbate the exposure to E and S risks.

Exhibit 4
ESG issuer profile scores

ENVIRONMENTAL
E-5



SOCIAL
S-5

GOVERNANCE
G-5

Source: Moody's Ratings

Environmental

Environmental considerations are material to Zambia's ratings and weigh on its economic strength as weather conditions impact the agricultural sector and electricity generation, given the country's high reliance on hydropower. Persistent low rainfall led to a substantial contraction in the agricultural sector and electricity generation in 2018-19 and again in 2022-23 and 2024. Water risk is high due to a high share of the population exposed to unsafe drinking water. In addition, the country is facing one of the highest deforestation rates in the world, driven by demand for charcoal across the country. Prolonged damage caused by deforestation will carry both environmental and economic costs in the longer term.

Social

Social risks weigh considerably on the ratings, as reflected in its **S-5** issuer profile score, driven by low access to basic services, including unreliable access to electricity, poverty, high levels of and inequality, with Zambia ranking among the countries with the highest level of inequality globally. Zambia also ranks weakly in terms of health indicators, and to a lesser extent education outcomes.

Governance

Zambia's weak governance profile (**G-5** issuer profile) also weighs on the ratings. Zambia receives low scores on the Worldwide Governance Indicators, revealing institutional challenges in the areas of government effectiveness, rule of law and control of corruption. Fiscal policy was ineffective in addressing the mounting challenge stemming from rapidly increasing debt, leading to the earlier default on its eurobonds.

Zambia's weak governance profile (**G-5** issuer profile) also weighs on the ratings. Zambia receives low scores on the Worldwide Governance Indicators, revealing institutional challenges in the areas of government effectiveness, rule of law and control of corruption.

Fiscal policy was ineffective in addressing the mounting challenge stemming from rapidly increasing debt, leading to the earlier default on its eurobonds.ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

All of these considerations are further discussed in the "Detailed credit considerations" section above. Our approach to ESG is explained in our report on how the scores depict varied and largely credit-negative impact of ESG factors and our cross-sector methodology General Principles for Assessing Environmental, Social and Governance Risks Methodology.

Recent developments

Drought conditions will hamper growth in 2024, with a rebound likely from 2025

Zambia is grappling with a severe drought that has decimated 40% of its maize crops and affected almost half of the population. The drought has also severely reduced hydropower energy production, resulting in significant energy supply disruptions and extensive power outages of up to 21 hours a day, forcing the country to significantly increase electricity imports from neighbouring South Africa (Ba2 stable), Mozambique (Caa2 stable), Namibia (B1 positive) and Zimbabwe. While the economy performed better than expected in 2023, with GDP growing by 5.4% in real terms, driven largely by an expansion in the non-mining and nonagricultural sectors, including ICT, education and construction, the ongoing drought will hamper growth in 2024. The agricultural sector accounts for almost 20% of GDP and employs three-quarters of the population, while continued blackouts due to the reliance on hydro for 85% of the electricity supply will undermine manufacturing, services and mining.

We forecast a slowdown in real GDP growth to 2.1% in 2024, driven by the contraction in agricultural production, diminished productivity due to frequent electricity outages and a sluggish recovery in the copper industry due to energy shortages. The Zambian economy, which relies significantly on copper production, faces continued challenges due to energy constraints, preventing Zambia from capitalising on the spike in copper prices in the first half of 2024. Prices have fallen slightly since May 2024, but we expect global demand for green energy, upgrade of power grids, and military spending to support higher prices in 2025 and beyond.

Although the newly presented 2025 budget aims to boost mineral exploration and revive disused copper mines, the introduction of the Minerals Regulation Commission Bill to Parliament in August 2024 could increase perceived risks and curb private investment. This is due to a contentious provision that allows "free carry" acquisitions by the state, enabling the government's acquisition of a share in a project before an exploration license is issued and maintained through development, thereby raising concerns about its impact on property rights. The government is targeting annual copper production to grow by more than 40% to reach 1 million tons in 2027 and more than quadruple to 3 million tons by 2031, although renewed regulatory instability for Zambia and energy access issues will weigh on investment and production.

We forecast a rebound in 2025, with growth rising to 5.9%, driven by improvements in the mining and agricultural sectors as drought conditions ease as part of the anticipated shift to a La Niña phase during the 2024-25 rainfall season. The 2025 budget introduces initiatives for energy diversification, including the construction of thermal and solar power facilities and the implementation of net metering, to mitigate the Zambia's significant vulnerability caused by its reliance on hydropower. However, the government's financial constraints jeopardize the implementation of these initiatives.

Fiscal deficits will widen in 2024 due to drought relief efforts, but the authorities remain committed to fiscal consolidation

Zambia's fiscal position faced significant challenges in 2023, primarily due to production issues in its crucial copper sector, with lower mining revenues of about 1% of GDP necessitating a pivot towards expenditure-based fiscal consolidation. Despite this, the fiscal deficit in 2023 was 0.2 percentage points lower than we expected, amounting to 6.6% of GDP, supported by higher-than-budgeted grants and non-mining tax revenue, which more than compensated for lower mining receipts. Although the clearing of expenditure arrears accelerated, the year-end 2023 stock increased to 10.8% of GDP as a result of valuation effects and financial penalties.

We expect the fiscal deficit to widen to 7.9% in 2024 driven by drought-related relief, the impact of widespread load-shedding and electricity imports, and the repayment of fuel arrears. The government declared a national disaster emergency in February 2024 and revised the 2024 budget to reallocate funds towards drought relief efforts and essential expenditures, slowing the pace of fiscal consolidation. To finance this larger deficit, Zambia is currently under negotiation to access $140 million (0.5% of GDP) catastrophe credit line from the World Bank, and plans to issue larger amounts of domestic debt. In June 2024, the authorities requested and received an augmentation of access under the IMF ECF arrangement amounting to $385.7 million (1.3% of GDP), half of which will be allocated for budget support. Concurrently, the authorities have secured additional multilateral and bilateral assistance to fully close the financing gap, projected to be about $2.7 billion in 2024. Of this, official financing, including that from the IMF, WB and African Development Bank (Aaa stable), will account for 51%, with the remainder coming from the restructuring of external debt. Under its IMF programme, Zambia can draw upon $1.7 billion (5.9% of GDP) until October 2025, with a recent disbursement of $569.9 million (2% of GDP) in June 2024 serving as an important source of external financing. Our expectation of continued and increasing support from development partners is key to supporting the rating at the current level. We expect the fiscal deficit to fall to 5.8% in 2025, higher than the 3.1% forecasted from the government, due to persistent social spending pressures and high debt service costs.

The debt burden increased to 115.2% of GDP in 2023 from 99.5% in 2022, but we forecast a decline to 108.7% in 2024 following the debt relief achieved through the eurobond restructuring, as fiscal consolidation efforts continue and revenue-enhancing initiatives — such as e-invoicing for VAT, the establishment of the Large Taxpayer Office and a suite of tax increases — are implemented. Zambia's debt restructuring efforts are on track, with a restructuring agreement with eurobond holders reached in March 2024 and the bond exchange being settled in June 2024. Negotiations with other commercial private creditors are underway, and authorities expect an agreement by year-end. An agreement in principle has already been reached with the Industrial & Commercial Bank of China Ltd (A1/A1 negative, baa1) and the China Development Bank (A1) to restructure $1.5 billion payable, along with similar agreements with Nedbank Limited (Baa3/Ba1 stable, ba2) and ZTE Technologies. Nevertheless, debt affordability metrics continue to be strained, with interest payments taking up about 34% of government revenue in 2023, and we expect this figure to remain around 30% in 2024 and 2025 with the resumption of interest payments to eurobond holders. The government's balance sheet remains vulnerable to currency depreciation because of the high share of foreign-currency debt (63% of total debt in 2023).

Current account deficit is likely to fall amid a depreciating kwacha

The current account turned to a deficit of 1.9% of GDP in 2023 from a 3.8% surplus in 2022 due to increased imports of maize and electricity caused by drought conditions, alongside a decline in mining and non-mining exports. We expect a small current account surplus of 0.5% in 2024, which will widen in 2025 as copper production ramps up, foreign direct investment inflows rise and foreign companies increase retained earnings to counteract high operating costs from load shedding. Foreign-exchange reserves improved, reaching $3.3 billion in 2023 (3.7 months of imports), supported by multilateral disbursements and higher foreign-exchange reserve requirements, and we expect them to rise to $3.8 billion by end-2024.

This improvement came amid a backdrop of the kwacha depreciating substantially against the US dollar, driven by the high demand for foreign exchange, constrained supply and negative market sentiments due to the delayed conclusion of the external debt restructuring. Constrained food supply exacerbated inflationary pressures, leading to a year-end inflation rate of 13% in 2023. In response, the Bank of Zambia (BoZ) tightened monetary policy aggressively, raising the policy rate to 13.5% by May 2024. Despite the monetary tightening, we expect annual average inflation to increase to 14.9% in 2024 and then fall to 11.3% in 2025, still above the BoZ's target range of 6%-8%, driven by exchange rate pass-through affecting food and fuel prices, and higher food and energy prices due to the drought.

Moody's rating methodology and scorecard factors: Zambia - Caa2 Stable

Factor / Sub-Factor	Metric	Indicator Year	Indicator	Initial Factor Score	Final Factor Score	Weights
Factor 1: Economic strength				**ba3**	**b2**	**50%**
Growth dynamics	Average real GDP growth (%)	2019-2028F	4.2	a1		25%
	MAD Volatility in Real GDP Growth (%)	2014-2023	1.2	baa3		10%
Scale of the economy	Nominal GDP ($ billion)	2023	28.9	b1		30%
National income	GDP per capita (PPP, Intl$)	2023	4,178.5	caa3		35%
Adjustment to factor 1	*# notches*				-2	max ±9
Factor 2: Institutions and governance strength				**b3**	**caa2**	**50%**
Quality of institutions	Quality of legislative and executive institutions			caa		20%
	Strength of civil society and the judiciary			b		20%
Policy effectiveness	Fiscal policy effectiveness			caa		30%
	Monetary and macroeconomic policy effectiveness			b		30%
Specified adjustment	Government default history and track record of arrears				-2	max -3
Other adjustment to factor 2	*# notches*				0	max ±3
F1 x F2: Economic resiliency				**b1**	**b3**	
Factor 3: Fiscal strength				**ca**	**ca**	
Debt burden	General government debt/GDP (%)	2023	115.2	b3		25%
	General government debt/revenue (%)	2023	566.8	caa3		25%
Debt affordability	General government interest payments/revenue (%)	2023	33.9	ca		25%
	General government interest payments/GDP (%)	2023	6.9	caa2		25%
Specified adjustments	*Total of specified adjustment (# notches)*			-6	-6	max ±6
	Debt Trend - Historical Change in Debt Burden	2015-2023	53.4	-2	-2	
	Debt Trend - Expected Change in Debt Burden	2023-2025F	-20.3	1	1	
	General Government Foreign Currency Debt/ GDP	2023	72.4	-6	-6	
	Other non-financial public sector debt/GDP	2023	0.0	0	0	
	Government Financial Assets including Sovereign Wealth Funds / GDP	2023	0.0	0	0	
Other adjustment to factor 3	*# notches*				0	max ±3
F1 x F2 x F3: Government financial strength				**ba3**	**b2**	
Factor 4: Susceptibility to event risk				**ca**	**ca**	Min
Political risk				baa		
	Domestic political risk and geopolitical risk			baa		
Government liquidity risk				caa	ca	
	Ease of access to funding			caa		
Specified adjustment	High refinancing risk				-1	max -2
Banking sector risk				ba	ba	
	Risk of banking sector credit event (BSCE)	Latest available	--	caa-c		
	Total domestic bank assets/GDP	2023	--	<80		
Adjustment to F4 BSR	*# notches*				0	max ±2
External vulnerability risk				ca	ca	
	External vulnerability risk			ca		
Adjustment to F4 EVR	*# notches*				0	max ±2
Overall adjustment to F4	*# notches*				0	max -2
F1 x F2 x F3 x F4: Scorecard-indicated outcome				**Caa1 - Caa3**	**Caa2 - C**	

Note: While information used to determine the grid mapping is mainly historical, our ratings incorporate expectations around future metrics and risk developments that may differ from the ones implied by the scorecard-indicated outcome. Thus, the rating process is deliberative and not mechanical, meaning that it depends on peer comparisons and should leave room for exceptional risk factors to be taken into account that may result in an assigned rating outside the scorecard-indicated outcome. For more information please see our Sovereign Ratings Methodology.

Footnotes: (1) Initial factor score: scorecard indicators combine with the automatic adjustments to produce an initial factor score for every rating factor, as detailed in Moody's Sovereign Ratings Methodology. **(2) Final factor score:** where additional analytical considerations exist, initial factor scores are augmented to produce a final factor score. Guidance on additional factors typically considered can be found in Moody's Sovereign Ratings Methodology; details on country-specific considerations are provided in Moody's research. **(3) Scorecard-indicated outcome:** Factor 1: Economic Strength, and Factor 2: Institutions and Governance Strength, combine with equal weight into a construct we designate as Economic Resiliency (ER). An aggregation function then combines ER and Factor 3: Fiscal Strength, following a non-linear pattern where Fiscal Strength has higher weight for countries with moderate ER and lower weight for countries with high or low ER. As a final step, Factor 4, a country's Susceptibility to Event Risk, is a constraint which can only lower the government financial strength as given by combining the first three factors. **(4) There are 20 ranking categories for quantitative sub-factors:** aaa, aa1, aa2, aa3, a1, a2, a3, baa1, baa2, baa3, ba1, ba2, ba3, b1, b2, b3, caa1, caa2, caa3, ca and 8 ranking categories for qualitative sub-factors: aaa, aa, a, baa, ba, b, caa, ca **(5) Indicator value:** if not explicitly stated otherwise, the indicator value corresponds to the latest data available.

© 2024 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.
CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.
MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.
ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.
MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.
All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.
To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.
To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.
NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.
Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."
Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V, I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Calificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.
Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.
Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.
Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

REPORT NUMBER 1420585