

CREDIT OPINION

20 August 2024

Update



Contacts

Petter Bryman +33.1.5330.3394

VP-Senior Analyst

petter.bryman@moodys.com

Will Dallas +33 153 303 428

Ratings Associates will.dallas@moodys.com

Dietmar Hornung +49.69.70730.790

Associate Managing Director dietmar.hornung@moodys.com

Marie Diron +44.20.7772.1968

MD-Global Sovereign Risk marie.diron@moodys.com

CLIENT SERVICES

Americas 1-212-553-1653
Asia Pacific 852-3551-3077
Japan 81-3-5408-4100
EMEA 44-20-7772-5454

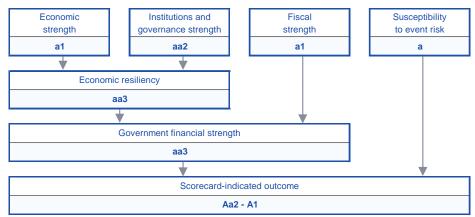
Government of Ireland – Aa3 positive

Update following change in outlook to positive from stable

Summary

Our credit view of <u>Ireland</u> reflects its strong growth potential, robust institutional framework, and the economy's proven resilience to external shocks, including Brexit, the pandemic and the spillovers from Russia's invasion of <u>Ukraine</u> (Ca stable). Ireland's main credit weakness is its elevated but declining debt burden while concentration risks in the corporate sector are also a potential vulnerability of the economy and public finances.

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



Source: Moody's Ratings

Credit strengths

- » An open, competitive economy with robust growth potential
- » Robust institutions and a strong track record of reform and fiscal consolidation

Credit challenges

- » An elevated, but declining debt burden relative to the size of the domestic economy
- » A high dependence on a small number of multinational firms to drive economic growth and generate corporate tax receipts

This publication provides an update on the sovereign credit profile and may also discuss the likely credit implications of a new development or trend for the sovereign. It does not announce a credit rating action.

Rating outlook

The positive outlook reflects the prospect of a sustained improvement of Ireland's fiscal strength. Based on current policies and our economic growth expectations, we forecast a decline of the gross debt burden and a moderate improvement of debt affordability. We also take into account the fact that Ireland is starting a gradual build-up of a fiscal buffer with the government's new long-term savings funds. While these improvements are largely driven by potentially volatile corporate tax receipts, the prospect of a further but still uncertain boost to revenues following the recent increase in Ireland's corporate tax rate points to the possibility of the reduction of the gross debt burden or build-up of the fiscal buffers being greater than we currently expect. The-build up of fiscal buffers would also reduce fiscal risks as the potentially volatile corporate tax receipts that will be transferred to the savings funds can no longer be used to fund current and permanent expenditure.

Factors that could lead to an upgrade

Ireland's Aa3 ratings would likely be upgraded if Ireland's gross and net debt metrics improved more markedly than we currently expect. This would likely reflect the conduct of government fiscal policy that continues to prudently manage the risks to the public finances stemming from the reliance on potentially volatile corporate tax receipts to generate current fiscal surpluses including through effective management and use the two long-term savings funds.

Factors that could lead to a downgrade

The positive outlook signals that the rating is unlikely to be downgraded in the near term. However, the outlook would likely be returned to stable if improvements to Ireland's fiscal and debt metrics were more muted, leaving Ireland exposed to severe (even if low-probability) credit shocks due to a still high debt burden. Over the medium term, a weakening of the economy's growth potential, for instance reflecting reduced investment and employment of multinationals in key sectors such as pharmaceuticals, ICT services and manufacturing, could also lead the outlook to be returned to stable.

Key indicators

Exhibit 2

Ireland	2018	2019	2020	2021	2022	2023	2024F	2025F
Real GDP (% change)	7.5	5.0	7.2	16.3	8.6	-5.5	1.8	4.0
Inflation rate (% change average)[1]	0.7	0.9	-0.5	2.4	8.1	5.2	1.7	2.0
Gen. gov. financial balance/GDP (%)	0.1	0.5	-4.9	-1.5	1.7	1.6	1.5	1.4
Gen. gov. primary balance/GDP (%)	1.7	1.7	-3.9	-0.7	2.3	2.3	2.1	2.1
Gen. gov. debt/GDP (%)	61.5	55.9	57.0	52.6	43.1	43.3	41.5	39.6
Gen. gov. debt/revenues (%)	247.2	230.4	261.6	237.6	193.8	178.4	168.0	161.7
Gen. gov. interest payment/revenues (%)	6.4	5.2	4.6	3.3	2.9	2.8	2.6	2.6
Current Account Balance/GDP (%)	4.3	-20.7	-7.1	12.2	8.8	8.1	9.8	9.9

^[1] Harmonized Index of Consumer Prices (HICP)

Source: Moody's Ratings

Detailed credit considerations

On 16 August, we changed the outlook on Ireland to positive from stable, while also affirming the Aa3 ratings. The decision to change the outlook to positive reflects the prospect of a sustained improvement of Ireland's fiscal strength. Based on current policies and our economic growth expectations, we forecast a decline of the gross debt burden and a moderate improvement of debt affordability. We also take into account the fact that Ireland is starting a gradual build-up of a fiscal buffer with the government's new long-term savings funds. While these improvements are largely driven by potentially volatile corporate tax receipts, the prospect of a further but still uncertain boost to revenues following the recent increase in Ireland's corporate tax rate points to the possibility of the reduction of the gross debt burden or build-up of the fiscal buffers being greater than we currently expect. The build-up of fiscal buffers would also reduce fiscal risks as the potentially volatile corporate tax receipts that will be transferred to the savings funds can no longer be used to fund current and permanent expenditure.

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 score Ireland's **economic strength** at "a1", which balances the moderate size of the Irish economy against high levels of wealth and competitiveness. Ireland is a favoured destination for multinational companies, its attractiveness stemming from a competitive tax structure, a highly skilled and flexible labour force and access to the <u>European Union</u> (EU, Aaa stable) single market. The Irish economy has also repeatedly shown its resilience to external shocks in recent years such as Brexit, the coronavirus pandemic and the Russian invasion of Ukraine. Our final score of "a1" is one notch below the initial score of "aa3". The negative adjustment accounts for the particularly large distortions in real and nominal GDP numbers brought about by a limited number of transactions by multinational corporations based in Ireland.

We assess Ireland's **institutions and governance strength** as "aa2". This reflects the country's robust institutions and transparent policy framework which have allowed policymakers to effectively address the country's economic and banking sector crisis through successive administrations, and to prepare effectively for Brexit. Improvements in banking supervision and regulation since the country's financial crisis, both by the Irish regulatory authorities and through the implementation of the Single Supervisory Mechanism (SSM) at the ECB also support institutions and governance strength.

We score **fiscal strength** at "a1", one notch below the initial score of "aa3" because the distortions in Ireland's GDP and GNP figures mean that the government debt-to-GDP and interest payments to GDP ratios do not give a reliable indication of the state's true repayment capacity. The downward adjustment also reflects elevated revenue concentration from dependence on a small number of corporates for the majority of corporate tax receipts. The public debt ratio stood at just over 100% of GNI* at the end of 2021, but fell to 76% by the end of 2023 due to a combination of very rapid real and nominal growth as well as headline and primary surpluses. Despite this rapid decline, the debt-to-GNI* ratio is far above the median debt-to-GDP ratio of 29.6% of Ireland's Aa3-rated peers.

We assess **susceptibility to event risk** at "a", driven by banking sector, political and external vulnerability risk.

The risks related to the banking sector have receded, as the domestic banks have strengthened their capitalization levels, started to reduce their elevated levels of impaired assets and improved their profitability metrics since 2014. Our assessment of the risk of a banking sector credit event (BSCE) at "baa3" is lower than the baseline credit assessment of "baa1" for rated banks to reflect concentration risks in the sector.

We assess political risk at "a". Ireland's political risk score remains unchanged following Russia's invasion of Ukraine. Ireland's neutrality policy as well as its geographic position and limited economic and energy ties to Russia leave the country comparatively insulated from any geopolitical risks. Domestic political risks are limited.

We also score external vulnerability risk at "a", driven by Ireland's exposure to shifts in the external environment, and to a large, negative net international investment position amid large portfolio and direct investment inflows. We assess government liquidity risk at "aaa", reflecting low borrowing requirements on the back of improving public finances, a favourable maturity profile and low funding costs.

ESG considerations

Ireland's ESG credit impact score is CIS-1

Evhibit 3

ESG credit impact score



Source: Moody's Ratings

Ireland's **CIS-1** score indicates that ESG considerations have a positive impact on the rating. This reflects Ireland's very strong governance profile and a strong capacity to respond to shocks.

Exhibit 4
ESG issuer profile scores



Source: Moody's Ratings

Environmental

Ireland's **E-2** score reflects its low exposure to physical climate risks, natural capital and other factors. While Ireland has domestic production of natural gas and its energy supply remains dominated by hydrocarbons, overall carbon transition risks are limited for Ireland's mainly services-based economy.

Social

Ireland's **S-2** issuer profile score reflects its favourable demographic profile compared to many other EU countries, although this is partly offset by the rising ageing-related fiscal costs in the coming decades. The score also reflects high-quality education, and good quality health care and basic services, although housing shortages remain a constraint on the economy's growth potential.

Governance

Ireland's **G-1** score reflects its very strong institutions and governance profile support which support its rating. Ireland scores very highly on institutional factors, as captured in the Worldwide Governance Indicators, reflecting strong policy effectiveness and rule of law. Policymakers' effectiveness in addressing the country's financial crisis through successive administrations, and in preparing for Brexit despite high uncertainty, further underpins our assessment.

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 <u>scores depict varied and largely credit-negative impact of ESG factors</u> and our cross-sector methodology <u>General Principles for Assessing Environmental</u>, <u>Social and Governance Risks Methodology</u>.

Recent developments

Growth will remain solid on the back of strong consumption growth and increasing domestic investment

We expect the Irish economy to grow at a trend real rate of 2 to 2.5% of Modified Gross National Income (GNI*) in 2024 and coming years. While this is a slowdown from very rapid rates of growth in the wake of coronavirus pandemic, it nevertheless places Ireland among the fastest growing advanced economies in Europe as well as among Aa- and Aaa-rated sovereigns overall.

Growth of the Irish economy in coming years will be predominantly driven by domestic consumption, spurred by strong wage growth in a tight labour market. The significant slowdown of the rate of inflation to 1.5% in July 2024 (year-on-year, as measured by the Harmonised Index of Consumer Prices, HICP) will also support the growth of real incomes and consumption in 2024 and beyond.

Much of the strength of Ireland's labour market is driven by multinational companies in sectors such as pharmaceuticals and medical equipment as well as Information and Communication Technology. However, we expect the growth of investment by such companies to be more muted in coming years, not least as significant one-off investments in the wake of the pandemic established a very high base level for investment.

That said, we expect to see growth of domestically driven investment to pick up some of the slack from the multinational companies. In particular, investment in residential housing is set to pick up in coming years as both the government and the private sector seeks to tackle Ireland's significant housing shortages. The completion of new housing units stood at close to 33,000 in 2023 and looks likely to increase further to around 35,000 in 2024. However, this remains far below estimates of the around 50,000 new units per year needed to make up for current shortages and the expected needs of a growing population. By restricting the domestic mobility of labour as well as labour immigration, Ireland's housing shortages increasingly risk becoming a constraint on the economy's growth potential.

Debt burden continues to decline - even as bulk of fiscal surpluses will be transferred to new savings funds

Ireland's high debt burden relative to the size of the domestic economy has long been one of the main weaknesses of the credit profile. Debt-to-GNI* stood at over 100% as recently as 2021, but declined sharply to 76% of GNI* at the end of 2023 on the back of very strong real and nominal growth as well as large fiscal surpluses in the wake of the pandemic. Large primary surpluses and a robust growth outlook lead us to project gross government debt to fall to around 70% of GNI* at the end of 2025. Despite the significant decline in the debt burden, Ireland's debt-to-GNI* ratio remains far above the median debt-to-GDP ratio of 29.6% of Ireland's Aa3-rated peers.

The pace of gross debt reduction would have been even faster had it not been for the fact that Ireland this year will start transferring a significant share of its so-called "windfall" or "excess" corporate tax receipts to two new long-term savings funds – the Future Ireland Fund (FIF) and the Infrastructure Climate and Nature Fund (ICNF). Taken together, we project the two funds to stand at around 5% of GNI* at the end of 2025.

The "excess" corporate tax receipts are currently estimated to stand at just over 4% of GNI*. Starting in 2024, 0.8% of GDP per year (around 1.5% of GNI*, 35% of estimated excess receipts) will be transferred to the FIF and an additional €2 billion per year (around 0.7% of GNI* 16% of estimated windfalls) to the ICNF starting in 2025. In addition, the €6 billion (2.1% of GNI*) available in the National Reserve Fund set up in 2019 will also be transferred to the two new funds in 2024.

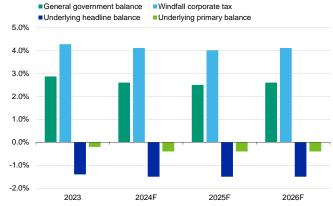
We expect the government to continue running headline fiscal surpluses of around 2.5% of GNI* in coming years. However, without the "excess" corporate tax receipts, the headline fiscal position would remain in deficit of 1-1.5% of GNI* (Exhibit 5). Ireland's corporate tax receipts are highly concentrated among a small group of multinationals, with ten firms accounting for more than half of all corporate tax revenues. As such, they are potentially highly volatile and transitory.

While there are clear downside risks to corporate tax revenues, there are also potential upside risks following the increase of Ireland's corporate tax rate for large companies from 12.5% to 15% which took effect in 2024. The impact of the increase in the corporate tax rate on government revenues is expected to principally occur starting in 2026. However, the magnitude and durability of such

improvements is currently highly uncertain, as this will depend both on how large multinationals respond to the increase in the corporate tax rate and to possible changes in the international tax environment.

The increase in the Irish tax rate stems from Pillar 2 of the OECD agreement on Base erosion and profit shifting (BEPS). Pillar 1 of BEPS would likely redistribute some of Ireland's corporate tax revenues to other jurisdictions, on balance making the two pillars net negative for Irish tax revenues. However, Pillar 1 is yet to be ratified and continues to face opposition not least in the <u>United States</u> (Aaa negative) Congress. Even if Pillar 1 is never ratified, other unilateral initiatives by the US or the European Union on corporation tax could negatively impact Irish tax revenues and potentially also its attractiveness as a favoured base of multinational companies.

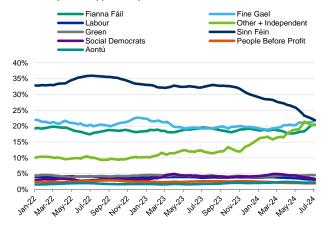
Exhibit 5
Large fiscal surpluses remain driven by windfall corporate tax receipts
% GNI*



Source: Department of Finance, Moody's Ratings

Exhibit 6 Support for Sinn Féin has dropped sharply ahead of upcoming elections

Estimate of public support for parties to Dáil Éireann, %



Source: Irish Polling Indicator, Moody's Ratings

Renewed mandate for current centre-right coalition increasingly likely as support for Sinn Féin drops ahead of elections

Elections to Dáil Éireann (the lower house of parliament) have to be held by March 2025 at the latest, but we expect they will most likely be held in the late autumn of 2024. Polling indicates that the most likely outcome of the elections is a continuation of the current coalition of the centre-right Fianna Fáil and Fine Gael parties together either with the Green Party (as in the current coalition) or a number of the many independent members of parliament. As such, we expect there to be broad policy continuity under the next government.

Support for the left-wing nationalist Sinn Féin, which polled at close to 35% until the end of 2023 (Exhibit 6), has continued to drop as the party has struggled to adapt to a shift in the political debate away from the party's core issues of housing and social policy to topics such as immigration. The party has also lost the backing of some of its newer supporters as it has sought to moderate economic policy positions ahead of a possible entry into government.

Moody's rating methodology and scorecard factors: Ireland - Aa3 positive

Factor / Sub-Factor	Metric	Indicator Year	Indicator	Initial Factor Score	Final Factor Score	Weights
Factor 1: Economic strength				aa3	a1	50%
Growth dynamics	Average real GDP growth (%)	2019-2028F	4.9	aa3		25%
	MAD Volatility in Real GDP Growth (%)	2014-2023	2.5	b2		10%
Scale of the economy	Nominal GDP (\$ billion)	2023	551.5	aa3		30%
National income	GDP per capita (PPP, Intl\$)	2023	130,915.2	aaa		35%
Adjustment to factor 1	# notches				-1	max ±
actor 2: Institutions and gover	nance strength			aa2	aa2	50%
Quality of institutions	Quality of legislative and executive institutions			aa		20%
	Strength of civil society and the judiciary			aaa		20%
Policy effectiveness	Fiscal policy effectiveness			aa		30%
	Monetary and macroeconomic policy effectiveness			aa		30%
Specified adjustment	Government default history and track record of arrears				0	max -
Other adjustment to factor 2	# notches				0	max ±
1 x F2: Economic resiliency				aa2	aa3	
actor 3: Fiscal strength				aa3	a1	
Debt burden	General government debt/GDP (%)	2023	43.3	a2		25%
	General government debt/revenue (%)	2023	178.9	a2		25%
Debt affordability	General government interest payments/revenue (%)	2023	2.8	aa1		25%
-	General government interest payments/GDP (%)	2023	0.7	aa1		25%
Specified adjustments	Total of specified adjustment (# notches)			0	1	max :
	Debt Trend - Historical Change in Debt Burden	2015-2023	-30.7	0	0	
	Debt Trend - Expected Change in Debt Burden	2023-2025F	-3.7	0	1	
	General Government Foreign Currency Debt/ GDP	2023	0.0	0	0	
	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				-2	max ±
F1 x F2 x F3: Government financial strength				aa2	aa3	
actor 4: Susceptibility to event	t risk			а	a	Min
Political risk					a	
	Domestic political risk and geopolitical risk			а		
Government liquidity risk				aaa	aaa	
	Ease of access to funding			aaa		
Specified adjustment	High refinancing risk				0	max -
Banking sector risk				а	a	
	Risk of banking sector credit event (BSCE)	Latest available	baa1	baa3		
	Total domestic bank assets/GDP	2023		80-180		
Adjustment to F4 BSR	# notches				0	max :
External vulnerability risk				а	а	
	External vulnerability risk			а		
Adjustment to F4 EVR	# notches				0	max ±
Overall adjustment to F4	# notches				0	max -
F1 x F2 x F3 x F4: Scorecard-indica	ated outcome			Aa1 - Aa3	Aa2 - A1	
ata. While information upon to determine the		d alabada a da cada a da a da a da a da a da				

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, a3, ba1, ba2, ba3, ba1, ba2, ba3, b1, b2, b3, caa1, caa2, caa3, caa1 aranking 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 MODE!

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 such information, 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

1414770