

MOODY'S

INVESTORS SERVICE

CREDIT OPINION

12 April 2018

Update

[Rate this Research](#)

RATINGS

Rabobank

Domicile	Amsterdam, Netherlands
Long Term Debt	Aa3
Type	Senior Unsecured - Fgn Curr
Outlook	Stable
Long Term Deposit	Aa3
Type	LT Bank Deposits - Fgn Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Guillaume Lucien-Baugas +33.1.5330.3350
VP-Senior Analyst
guillaume.lucien-baugas@moodys.com

Alain Laurin +33.1.5330.1059
Associate Managing Director
alain.laurin@moodys.com

Nick Hill +33.1.5330.1029
MD-Banking
nick.hill@moodys.com

Andreea Prodea +33.1.5330.1055
Associate Analyst
andreea.prodea@moodys.com

Rabobank

Update following downgrade, outlook changed to stable

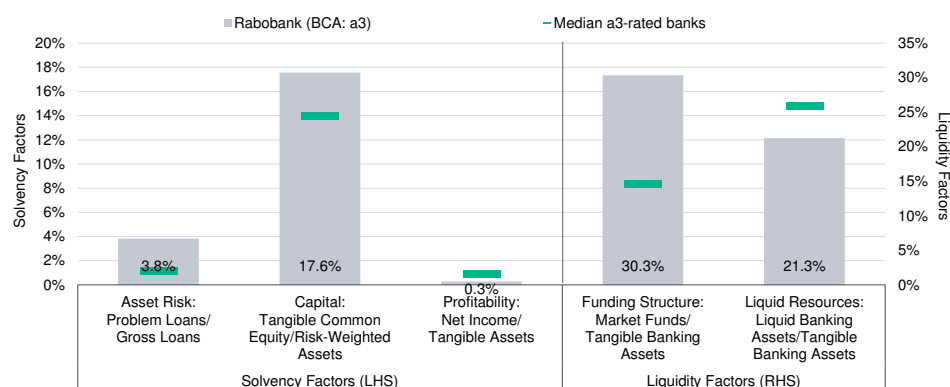
Summary

Rabobank's long-term deposit and senior debt ratings of Aa3, stable outlook, reflect (1) the bank's baseline credit assessment (BCA) of a3; (2) two notches of uplift from our Advanced Loss Given Failure (LGF) analysis; and (3) one notch of uplift resulting from a moderate probability of government support. Rabobank's short-term deposit and senior debt ratings are Prime-1.

Rabobank's BCA of a3 is supported by the bank's conservative business profile, as well as its strong financial fundamentals. The bank's leading position in the Dutch banking sector and strong position in the agribusiness sector worldwide are the primary drivers for a relatively stable, albeit modest earnings generation capacity. Despite a period of lackluster results between 2012 and 2014 owing to losses in Dutch commercial real estate (CRE) and more recently a number of large one-off items, we consider Rabobank's profitability resilient overall.

Exhibit 1

Rating Scorecard - Key Financial Ratios



Source: Source: Moody's Financial Metrics

The BCA is also underpinned by the bank's capital levels, which provide sound loss-absorption capacity, as well as its good asset quality overall. Rabobank heavily relies on wholesale funding, but this credit weakness is mitigated by the long duration of its debt issuance and sizeable liquidity buffers.

Credit strengths

- » Leading market positions in the Netherlands offer pricing power and stable earnings generation
- » Asset quality is solid overall
- » Capitalisation levels provide sound loss absorption capacity
- » The bank has ample liquidity reserves and an extended term structure of funding
- » Large volume of subordinated debt and hybrid debt results in very low loss-given-failure for senior unsecured debt and deposits hence a two-notch uplift from the BCA
- » Moderate probability of government support results in a one-notch uplift for senior unsecured debt and deposits

Credit challenges

- » Net interest margins suffer from the low interest rate environment
- » Asset quality is inherently vulnerable to a deterioration in the domestic economy
- » Underlying profitability is modest and will only marginally improve in the coming years
- » The bank has large and structural wholesale funding needs

Rating outlook

The outlook on Rabobank's deposit and senior unsecured debt ratings is stable because we do not anticipate any significant changes in the bank's creditworthiness over the next two years or so.

Factors that could lead to an upgrade

- » An upgrade of the BCA, and consequently of the long-term deposit and senior unsecured debt ratings, may occur if (1) Rabobank improves its structural profitability beyond its current plans; (2) its capital continues to steadily increase; and (3) asset risks remain very low.
- » In addition, the bank's long-term deposit and senior unsecured debt ratings could be upgraded if there was a lower loss-given-failure for senior debt and deposit holders due to higher levels of subordinated debt.

Factors that could lead to a downgrade

- » The BCA could be downgraded if (1) the bank's profitability was significantly impaired; or (2) the cost of risk in the bank's loan portfolio were to increase materially.
- » In addition, Rabobank's long-term deposit and senior unsecured debt ratings would be downgraded as a consequence of a downgrade of the BCA.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Key indicators

Exhibit 2

Rabobank (Consolidated Financials) [1]

	12-17 ²	12-16 ²	12-15 ²	12-14 ²	12-13 ³	CAGR/Avg ⁴
Total Assets (EUR million)	587,007	632,643	642,780	637,891	638,603	-2.1 ⁵
Total Assets (USD million)	704,876	667,282	698,249	771,882	879,958	-5.4 ⁵
Tangible Common Equity (EUR million)	34,802	35,143	34,848	32,160	30,349	3.5 ⁵
Tangible Common Equity (USD million)	41,790	37,067	37,856	38,915	41,819	-0.0 ⁵
Problem Loans / Gross Loans (%)	3.8	3.6	3.8	3.9	3.5	3.7 ⁶
Tangible Common Equity / Risk Weighted Assets (%)	17.6	16.6	16.4	15.2	14.4	16.4 ⁷
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	41.5	38.9	41.8	44.7	41.2	41.6 ⁶
Net Interest Margin (%)	1.4	1.3	1.4	1.4	1.3	1.4 ⁶
PPI / Average RWA (%)	1.3	1.4	1.4	2.0	0.9	1.5 ⁷
Net Income / Tangible Assets (%)	0.4	0.2	0.2	0.3	0.2	0.3 ⁶
Cost / Income Ratio (%)	75.6	76.1	73.3	66.4	82.8	74.8 ⁶
Market Funds / Tangible Banking Assets (%)	30.3	34.2	35.9	39.4	39.1	35.8 ⁶
Liquid Banking Assets / Tangible Banking Assets (%)	21.3	23.3	21.6	21.0	21.3	21.7 ⁶
Gross Loans / Due to Customers (%)	128.6	132.4	137.2	144.4	142.4	137.0 ⁶

[1] All figures and ratios are adjusted using Moody's standard adjustments [2] Basel III - fully-loaded or transitional phase-in; IFRS [3] Basel II; IFRS [4] May include rounding differences due to scale of reported amounts [5] Compound Annual Growth Rate (%) based on time period presented for the latest accounting regime [6] Simple average of periods presented for the latest accounting regime. [7] Simple average of Basel III periods presented

Source: Moody's Financial Metrics

Profile

Rabobank is a Dutch cooperative bank with a leading position in the domestic retail banking and in the food and agribusiness market worldwide. At year-end 2017, Rabobank was comprised of 102 local cooperative banks and several specialist subsidiaries and associates. The bank has a leading market position in the Netherlands with 86% market share "in food and agri" financing, 22% in residential mortgage loans, 34% in savings, and 39% in trade industry and services as of year-end 2017.

Rabobank is an international, full-range financial services provider, offering retail and wholesale banking, leasing, and real estate products and services in 40 countries worldwide to 8.5 million customers. As of year-end 2017, it operated major franchises in the domestic residential mortgage, savings account and trade, industry and services markets in the Netherlands.

Rabobank Nederland originated in 1898, following the establishment of two separate cooperative banks – the Coöperatieve Centrale Raiffeisen-Bank in Utrecht and the Coöperatieve Centrale Boerenleenbank in Eindhoven – by farmers with only limited access to credit. The two banks merged in 1972 and the merged entity was renamed Coöperatieve Centrale Raiffeisen-Boerenleenbank BA (known as Rabobank). In 1980, the new centralized bank was given the name of Rabobank Nederland. On 1 January 2016, the local Rabobanks merged with the central organisation Rabobank Nederland. The merger legal entity was named Coöperatieve Rabobank UA. As of year-end 2017, the 102 local cooperative banks had 1.9 million members, from a pool of more than 7.3 million domestic customers.

Detailed credit considerations

Leading market positions in the Netherlands offer pricing power and stable earnings generation

Rabobank holds a leading position in domestic retail banking, which represented 59% of its revenues in 2017. The bank also has a strong international presence focusing on the food and agribusiness sector. We consider that Rabobank's franchise is one of the most robust amongst Dutch peers, resulting in strong pricing power and relatively stable earnings generation.

International operations support Dutch clients operating internationally via the foreign branch network and allow the bank to capitalise on its knowledge and experience in the food and agribusiness sector with clients outside the Netherlands. This strategy is being pursued through its "wholesale, rural and retail" entities in a selected number of countries. The private sector loan book comprises approximately 27% of international exposures, which are split as follows: Europe excluding the Netherlands (7%), North America (10%), South America (3%), Australia & New Zealand (5%) and Asia (2%).

Asset quality is solid, yet vulnerable to deterioration in the domestic economy

We view Rabobank's asset quality as sound due to (1) its relatively conservative underwriting and investment policy and (2) its very limited exposure to countries in riskier parts of the euro area. Nevertheless, with 73% of its private sector lending in the Netherlands, Rabobank is naturally exposed to a deterioration of the Dutch economy. In 2012, 2013 and 2014, the bulk of the deterioration in asset quality came from the commercial real estate (CRE) portfolio, a sector which has since then recovered. Rabobank's exposure to domestic commercial real estate stood at €23 billion at year-end 2017. In March 2018, Rabobank announced that it had sold €1.3 billion of non-core CRE exposure.

The domestic retail banking segment represented 64% of the bank's private-sector lending and produced very low impairment charges in 2017 due to provision releases, mainly in the sectors that have previously experienced a downturn, such as transport and commercial real estate. The strong performance of domestic retail banking illustrates the strong health of both the Dutch economy and the housing market. The residential mortgage portfolio continued to perform well with zero cost of risk in 2017, but its specific features with high loan-to-value (LTV) ratios, albeit improving, and a material proportion of bullet rather than amortising loans make it vulnerable to a scenario of severe macroeconomic deterioration. New mortgages now have the statutory obligation to amortise in order to benefit from the tax deductibility of interests.

The performance of other portfolios was also strong in 2017. Loan loss provisions decreased to only 9 bps in the wholesale, rural and retail portfolio. The real estate segment, which had reported significant losses linked to Dutch CRE exposures in the recent past, reported large provision releases in 2017.

The bank's good asset quality is reflected in the score of a2.

Capitalisation levels provide sound loss absorption capacity

We consider Rabobank's strong loss absorption capacity to be a key credit strength. At year-end 2017, Rabobank's phased-in Common Equity Tier 1 (CET1) ratio and Tier 1 ratio were 15.8% and 18.8% respectively, which provides comfortable room above the minimum required CET1 ratio of 10.375% in 2018. This requirement is made up of 8.125% of capital requirement imposed by the European Central Bank through the Supervisory Review and Evaluation Process (SREP) (this is made of a CET1 requirement of 4.5%, a Capital Conservation Buffer of 1.875% and a Pillar 2 Requirement of 1.75%) and 2.25% of systemic risk buffer (phased-in) imposed by the Dutch central bank for 2018.

The fully loaded CET1 requirement is expected to be set at 11.75% in 2019, other things being equal, due to the phasing in of both the Capital Conservation Buffer (to 2.5%) and the Systemic Risk Buffer (to 3%). This fully loaded CET1 requirement is to be compared with Rabobank's fully loaded CET1 ratio of 15.5% at year-end 2017.

Rabobank's Tangible Common Equity was 17.6% of RWAs at year-end 2017, benefiting from approximately 1.4 percentage points of 'high-trigger' contingent capital instruments. The bank's Tier 2 capital was 7.4% of risk-weighted assets at year-end 2017, bringing the group's total capital ratio to 26.2%. In addition, Rabobank disclosed an MREL-eligible buffer of 26.8% at year-end 2017, which includes €1.25 billion of MREL-eligible Senior Contingent Notes but excludes other senior unsecured debt. In its Strategic Framework 2016-2020, Rabobank targets a CET1 ratio above 14% and a total capital ratio above 25% by 2020.

Rabobank has a public target for CET1 ratio of above 14% by 2020. Rabobank is intentionally increasing capitalisation well above the target of 14% because 'Basel IV' will increase RWAs by 30-35%, costing about 3.6pp-4.0pp of CET1 ratio by 2027 all things being equal under our calculations. Although 'Basel IV' is an indication of higher perceived risks by regulators, it will also force Rabobank to progressively increase capital for unchanged risks, a positive for creditors ultimately.

Our assigned capital score of aa3 reflects the bank's strong ratios and our belief that the bank's capitalisation is a strength.

Underlying profitability will start improving only moderately in 2018

After a period of lackluster results between 2012 and 2014, Rabobank's net profitability rebounded on the back of improving macroeconomic conditions along with the improving performance of Dutch CRE exposures. Rabobank reported full-year net profit for 2017 of €2,674 million, up 32% from 2016. However, the improvement was driven by lower exceptional items and a negative cost of risk prompted by provision reversals. Excluding the impact of one-off items (-€833 million in 2017 versus -€1,261 million in 2016), the

underlying profit before tax increased to €4,465 million in 2017 from €3,979 million in 2016 owing to a €500 million decline in cost of risk (-€190 million in 2017; €310 million in 2016).

Rabobank's reported underlying cost-to-income ratio, excluding exceptional items but including regulatory levies, was 65.3% in 2017, up from 64.8% in 2016, which is significantly weaker than the bank's target of 53%-54% to be achieved by 2020. We expect the bank to significantly decrease operating expenses in 2018, as large pension-related expenses subside and the benefits of continuing staff reductions will progressively materialize. However, net interest revenues, which represented a high 74% of the bank's net banking revenues in 2017, will suffer from prolonged low interest rates and resulting pressure on asset yields, given that funding costs are unlikely to decline further. In addition, the bank's loan-loss charges are currently at record low levels (with net recoveries of 5 bps of the private sector loan book in 2017 versus a net cost of 7 bps in 2016) thanks to provision reversals, which are now likely to diminish. We expect credit costs to modestly increase in 2018, resulting in net income close to that of 2017.

Our ba1 assigned score for profitability reflects the historical stability and quality of earnings of the bank, as well as the expected improvements.

Structural reliance on wholesale funding is mitigated by ample liquidity reserves and term structure of funding

Despite some reliance on wholesale funding, Rabobank's funding structure is robust and high liquidity buffers mitigate this structural feature of the Dutch banking system.

At year-end 2017, the group disclosed a loan-to-deposit ratio of 120%, down from 122% in 2016 (2015: 126%). The customer funding deficit remains elevated at €70 billion at year-end 2017, despite significant improvements. Rabobank is thus structurally reliant on wholesale funding (which totaled €160 billion at year-end 2017, as disclosed by the bank) and a portion (33%) of its deposits is derived from institutional and corporate investors, which brings funding diversification but may also prove less stable than retail deposits.

Nevertheless, we believe that Rabobank's reliance on wholesale funding, which is also the case for other Dutch banks, is largely mitigated by its conservative asset and liability management, based on an adequate duration of the bank's funding and a substantial liquidity portfolio. Of the €160 billion gross wholesale funding outstanding at year-end 2017, approximately €101 billion was long-term debt (excluding the portion of long-term debt with residual maturity of less than one year). Out of this, €30 billion had residual maturities of five years or more. At the same date, the bank's liquidity buffer, consisting of cash, high-quality government bonds and central bank-eligible internal RMBS amounted to €116 billion, representing around 405% of the bank's net interbank borrowings and short-term debt securities (including the portion of long-term debt, the residual maturity of which is less than one year), resulting in a very robust liquidity profile.

The Basel 3 liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) of Rabobank stood at 123% and 119% respectively at year-end 2017.

The assigned combined liquidity score of baa1 accounts for the favourable term structure of market funding, the quality of liquid assets and a low asset encumbrance.

Support and structural considerations

Loss Given Failure analysis

Rabobank is subject to the EU Bank Recovery and Resolution Directive (BRRD), which we consider to be an Operational Resolution Regime. We assume residual tangible common equity of 3% and losses post-failure of 8% of tangible banking assets, a 25% run-off in "junior" wholesale deposits, a 5% run-off in preferred deposits, a proportion of junior deposits of 26% of total customer deposits and assign a 25% probability to deposits being preferred to senior unsecured debt. These assumptions are in keeping with our standard assumptions.

- » Our LGF analysis indicates very low loss-given-failure for deposits and senior unsecured debt, leading us to assign a two-notch uplift above the adjusted BCA.
- » Our LGF analysis indicates high loss-given-failure for junior debt securities, leading us to make a negative adjustment of one notch below the adjusted BCA. We also incorporate additional notching for junior subordinated and hybrid debt instruments reflecting the coupon features.

Government support considerations

We believe there is a moderate probability of government support for deposits and debt, resulting in one notch of uplift for both the long-term deposits and senior unsecured debt of the bank.

For subordinated and other junior securities, we believe that the probability of government support is low and these ratings do not therefore include any related uplift. Junior securities also include additional downward notching from the BCA reflecting coupon suspension risk ahead of a potential failure.

Counterparty Risk Assessment

CR Assessments are opinions of how counterparty obligations are likely to be treated if a bank fails and are distinct from debt and deposit ratings in that they (1) consider only the risk of default rather than both the likelihood of default and the expected financial loss suffered in the event of default and (2) apply to counterparty obligations and contractual commitments rather than debt or deposit instruments. The CR assessment is an opinion of the counterparty risk related to a bank's covered bonds, contractual performance obligations (servicing), derivatives (e.g., swaps), letters of credit, guarantees and liquidity facilities.

The Counterparty Risk (CR) assessment is positioned at Aa2(cr)/Prime-1(cr).

The CR assessment is three notches above the adjusted BCA of a3, based on the cushion against default provided to the senior obligations represented by the CR assessment by subordinated instruments and one notch of uplift from our assumption for a moderate probability of government support. The main difference with our Advanced LGF approach used to determine instrument ratings is that the CR assessment captures the probability of default on certain senior obligations, rather than expected loss, therefore we focus purely on subordination and take no account of the volume of the instrument class.

About Moody's Bank Scorecard

Our Scorecard is designed to capture, express and explain in summary form our Rating Committee's judgment. When read in conjunction with our research, a fulsome presentation of our judgment is expressed. As a result, the output of our Scorecard may materially differ from that suggested by raw data alone (though it has been calibrated to avoid the frequent need for strong divergence). The Scorecard output and the individual scores are discussed in rating committees and may be adjusted up or down to reflect conditions specific to each rated entity.

Rating methodology and scorecard factors

Exhibit 3

Rabobank

Macro Factors

Weighted Macro Profile **Strong +** **100%**

Factor	Historic Ratio	Macro Adjusted Score	Credit Trend	Assigned Score	Key driver #1	Key driver #2
Solvency						
Asset Risk						
Problem Loans / Gross Loans	3.8%	a3	← →	a2	Quality of assets	Sector concentration
Capital						
TCE / RWA	17.6%	aa2	← →	aa3	Risk-weighted capitalisation	
Profitability						
Net Income / Tangible Assets	0.3%	ba2	↓	ba1	Earnings quality	
Combined Solvency Score		a3		a2		
Liquidity						
Funding Structure						
Market Funds / Tangible Banking Assets	30.3%	ba1	← →	baa2	Term structure	Deposit quality
Liquid Resources						
Liquid Banking Assets / Tangible Banking Assets	21.3%	baa1	← →	a3	Quality of liquid assets	Asset encumbrance
Combined Liquidity Score		baa3		baa1		
Financial Profile				a3		
Business Diversification				0		
Opacity and Complexity				0		
Corporate Behavior				0		
Total Qualitative Adjustments				0		
Sovereign or Affiliate constraint:				Aaa		
Scorecard Calculated BCA range				a2-baa1		
Assigned BCA				a3		
Affiliate Support notching				0		
Adjusted BCA				a3		

Balance Sheet	in-scope (EUR million)	% in-scope	at-failure (EUR million)	% at-failure
Other liabilities	121,304	20.7%	156,053	26.6%
Deposits	340,682	58.1%	305,932	52.2%
Preferred deposits	252,105	43.0%	239,499	40.9%
Junior Deposits	88,577	15.1%	66,433	11.3%
Senior unsecured bank debt	85,450	14.6%	85,450	14.6%
Dated subordinated bank debt	17,420	3.0%	17,420	3.0%
Preference shares (bank)	3,569	0.6%	3,569	0.6%
Equity	17,580	3.0%	17,580	3.0%
Total Tangible Banking Assets	586,005	100%	586,005	100%

Debt class	De Jure waterfall		De Facto waterfall		Notching		LGF	Assigned	Additional	Preliminary
	Instrument volume + subordination	Sub-ordination	Instrument volume + subordination	Sub-ordination	De Jure	De Facto	Notching Guidance vs. Adjusted BCA	LGF notching	notching	Rating Assessment
Counterparty Risk Assessment	32.5%	32.5%	32.5%	32.5%	3	3	3	3	0	aa3 (cr)
Deposits	32.5%	6.6%	32.5%	21.2%	2	3	2	2	0	a1
Senior unsecured bank debt	32.5%	6.6%	21.2%	6.6%	2	2	2	2	0	a1 (hyb)
Dated subordinated bank debt	6.6%	3.6%	6.6%	3.6%	-1	-1	-1	-1	0	baa1
Non-cumulative bank preference shares	3.6%	3.0%	3.6%	3.0%	-1	-1	-1	-1	-2	baa3 (hyb)

Instrument class	Loss Given Failure notching	Additional Notching	Preliminary Rating Assessment	Government Support notching	Local Currency Rating	Foreign Currency Rating
Counterparty Risk Assessment	3	0	aa3 (cr)	1	Aa2 (cr)	--
Deposits	2	0	a1	1	Aa3	Aa3
Senior unsecured bank debt	2	0	a1 (hyb)	1	Aa3 (hyb)	Aa3 (hyb)
Dated subordinated bank debt	-1	0	baa1	0	Baa1	Baa1
Non-cumulative bank preference shares	-1	-2	baa3 (hyb)	0	Baa3 (hyb)	Baa3 (hyb)

Source: Moody's Financial Metrics

Ratings

Exhibit 4

Category	Moody's Rating
RABOBANK	
Outlook	Stable
Bank Deposits	Aa3/P-1
Baseline Credit Assessment	a3
Adjusted Baseline Credit Assessment	a3
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
Issuer Rating	Aa3
Senior Unsecured -Fgn Curr	Aa3
Senior Unsecured -Dom Curr	Baa1
Subordinate	Baa1
Pref. Stock Non-cumulative	Baa3 (hyb)
Commercial Paper	P-1
Other Short Term	(P)P-1
RABOBANK AUSTRALIA LIMITED	
Outlook	Stable
Bkd Bank Deposits -Dom Curr	Aa3/P-1
RABOBANK IRELAND PLC	
Bkd Commercial Paper	P-1
RABOBANK NEDERLAND, SINGAPORE BRANCH	
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
Commercial Paper -Dom Curr	P-1
RABOBANK NEDERLAND, THE NETHERLANDS BRANCH	
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
RABOBANK NEDERLAND, NEW ZEALAND BRANCH	
Outlook	Stable
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
Senior Unsecured -Dom Curr	Aa3
Commercial Paper	P-1
Other Short Term	(P)P-1
RABOBANK NEDERLAND, AUSTRALIA BRANCH	
Outlook	Stable
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
Senior Unsecured	Aa3
Commercial Paper	P-1
Other Short Term	(P)P-1
RABOBANK USA FINANCIAL CORPORATION	
Bkd Commercial Paper	P-1
RABOBANK NEDERLAND, NEW YORK BRANCH	
Outlook	Stable
Bank Deposits	Aa3/--
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
Senior Unsecured	Aa3
Commercial Paper	P-1
Other Short Term	(P)P-1
FRIESLAND BANK N.V.	
Outlook	Stable
Bank Deposits	Aa3/P-1
Senior Unsecured MTN -Dom Curr	(P)Aa3
Subordinate MTN -Dom Curr	(P)Baa1
Other Short Term -Dom Curr	(P)P-1
RABOBANK NEDERLAND, HONG KONG BRANCH	
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
RABOBANK NEDERLAND, PARIS BRANCH	
Counterparty Risk Assessment	Aa2(cr)/P-1(cr)
RABOBANK CAPITAL FUNDING TRUST IV	

Pref. Stock Non-cumulative	Baa3 (hyb)
RABO CAPITAL SECURITIES LIMITED	
Pref. Stock Non-cumulative -Dom Curr	Baa3 (hyb)
RABOBANK POLSKA SA	
Bkd Commercial Paper -Dom Curr	P-1

Source: Moody's Investors Service

© 2018 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 INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. 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. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS 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 AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS 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.

CREDIT RATINGS AND MOODY'S PUBLICATIONS 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 rating process or in preparing the Moody's publications.

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 SUCH RATING OR 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 rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

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 61 003 399 657 AFSL 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. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

CLIENT SERVICES

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