


Berlin Hyp AG - Mortgage Covered Bonds

Covered Bonds / Germany

| | | |
|--|---|---|
| Contacts Monitoring Client Service Desk | Lenhard, Martin - +49 (697) 073-0743 - Martin.Lenhard@moodys.com Kale, Amey - +91 (806) 113-3685 - Amey.Kale@moodys.com Monitor.CB@moodys.com London: +44 20 7772-5454, csdlondon@moodys.com |  Click on the icon to download data into Excel & to see Glossary of terms used Click here to access the covered bond programme webpage on moodys.com |
|--|---|---|

Reporting as of: 30/06/2020 All amounts in EUR (unless otherwise specified)

For information on how to read this report, see the latest
Moody's Covered Bonds Sector Update

Data as provided to Moody's Investors Service (note 1)

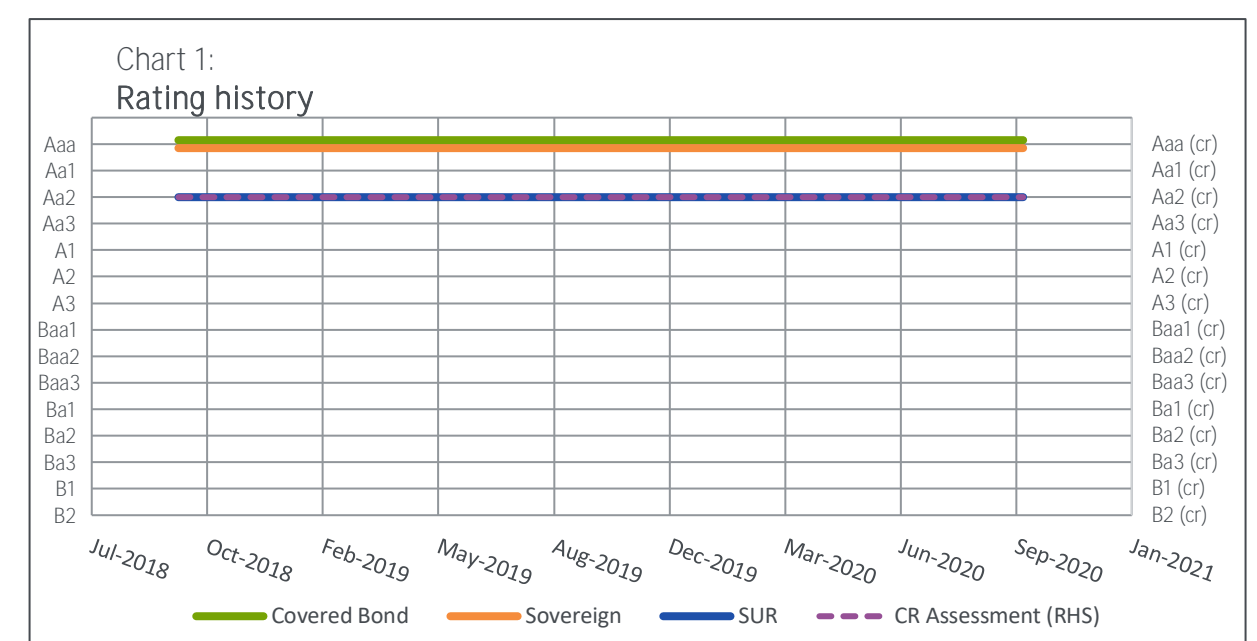
I. Programme Overview

Overview

| | | |
|---------------------------------------|-----|------------------------------------|
| Year of initial rating assignment: | | 2006 |
| Total outstanding liabilities: | EUR | 14,755,132,025 |
| Total assets in the Cover Pool: | EUR | 15,709,943,924 |
| Issuer name / CR Assessment: | | Berlin Hyp AG / Aa2(cr) |
| Group or parent name / CR Assessment: | | Landesbank Berlin Holding AG / n/a |
| Main collateral type: | | Commercial |

Ratings

| | | |
|---|--|-------------------------|
| Covered bonds rating: | | Aaa |
| Entity used in Moody's EL & TPI analysis: | | Berlin Hyp AG |
| CB anchor: | | CR Assessment + 1 notch |
| CR Assessment: | | Aa2(cr) |
| SUR: | | Aa2 |
| Unsecured claim used for Moody's EL analysis: | | Yes |



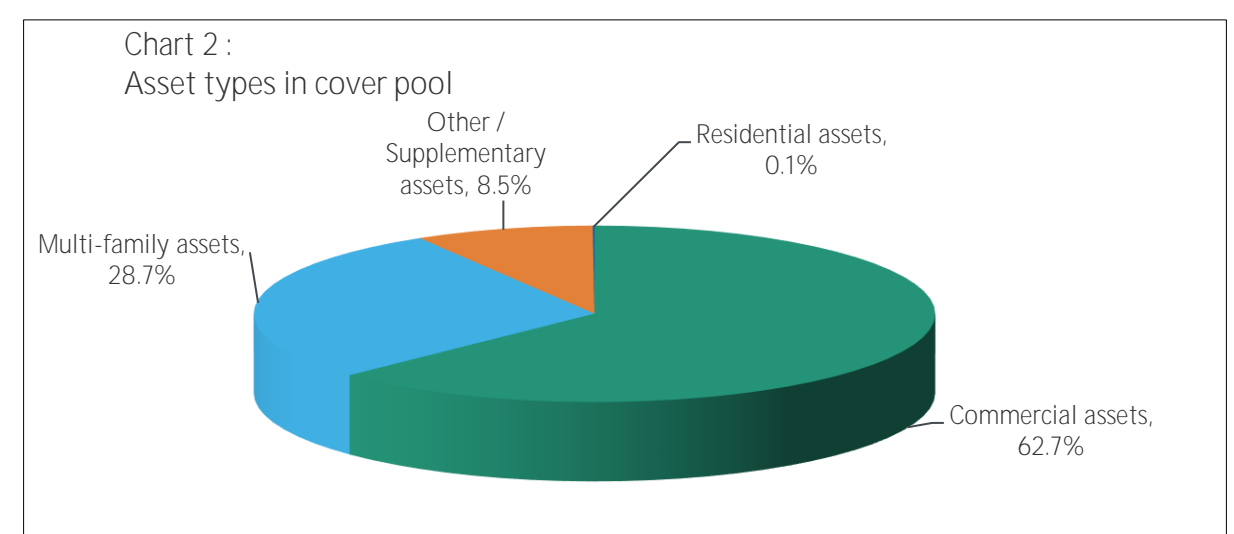
II. Value of the Cover Pool

Collateral quality

| | | |
|---------------------------------------|--|-------|
| Collateral Score: | | 10.1% |
| Collateral Score excl. systemic risk: | | n/a |

Cover Pool losses

| | | |
|--|-------|------|
| Collateral Risk (Collateral Score post-haircut): | 6.8% | 38% |
| Market Risk: | 11.1% | 62% |
| | 17.9% | 100% |



III. Over-Collateralisation Levels

(notes 2 & 3)

Over-Collateralisation (OC) figures presented below include Eligible only collateral. Over-Collateralisation levels are provided on any of the following: nominal basis or unstressed NPV basis or on stressed NPV basis. NPV stress assumptions applied as required by the legal framework for German Pfandbriefe.

Current situation

| | |
|--|------|
| Committed OC (Stressed NPV): | 2.0% |
| Current OC (Unstressed NPV): | 7.7% |
| OC consistent with current rating (note 4) | 0.0% |

Sensitivity scenario CB anchor

| | | |
|-------------------------------------|-----------------------------------|------|
| | OC consistent with current rating | |
| Scenario 1: CB anchor is lowered by | 1 notch | 0.0% |

IV. Timely Payment Indicator & TPI Leeway

| | |
|---------------------------------|------|
| Timely Payment Indicator (TPI): | High |
| TPI Leeway: | 6 |

Extract from TPI table - CB anchor is CR Assessment + 1 notch

| CR Assessment | High |
|----------------|------------|
| Aaa(cr) | Aaa |
| Aa1(cr) | Aaa |
| Aa2(cr) | Aaa |
| Aa3(cr) | Aaa |
| A1(cr) | Aaa |
| A2(cr) | Aaa |
| A3(cr) | Aaa |
| Baa1(cr) | Aaa |
| Baa2(cr) | Aaa |
| Baa3(cr) | Aa1 |

Legal framework

| | |
|--|---------|
| Does a specific covered bond law apply for this programme: | Yes |
| Main country in which collateral is based: | Germany |
| Country in which issuer is based: | Germany |

Timely payment

| | |
|---|-----|
| Refinancing period for principal payments of 6 months or greater: | No |
| Liquidity reserve to support timely payments on all issuances: | Yes |

Please refer to section 4 of the Pfandbrief Act.

(note 1) The data reported in this PO is based on information provided by the issuer and may include certain assumptions made by Moody's. Moody's accepts no responsibility for the information provided to it and, whilst it believes the assumptions it has made are reasonable, cannot guarantee that they are or will remain accurate. Although Moody's encourages all issuers to provide reporting data in a consistent manner, there may be differences in the way that certain data is categorised by issuers. The data reporting template (which Issuers are requested to use) is available on request. Credit ratings, TPI and TPI Leeway shown in this PO are as of publication date.

(note 2) This assumes the Covered Bonds rating is not constrained by the TPI. Also to the extent rating assumptions change following a downgrade or an upgrade of the Issuer, the necessary OC stated here may also change. This is especially significant in the case of CR assessments of A3(cr) or Baa1(cr), as the necessary OC following a 1 notch downgrade may then be substantially higher than the amount suggested here as market risks are considered more critically by Moody's at this time. In any event, the necessary OC amounts stated here are subject to change at anytime at Moody's discretion.

(note 3) This is the minimum OC calculated to be consistent with the current rating under Moody's expected loss model. However, the level of OC consistent with a given rating level may differ from this amount where ratings are capped under the TPI framework and, for example, where committee discretion is applied.

(note 4) The OC consistent with the current rating is the minimum level of over-collateralisation which is necessary to support the covered bond rating at its current level on the basis of the pool as per the cut-off date. The sensitivity run is based on certain assumptions, including that the Covered Bonds rating is not constrained by the TPI. Further, this sensitivity run is a model output only and therefore a simplification as it does not take into account certain assumptions that may change as an issuer is downgraded, and as a result the actual OC number consistent with the current rating may be higher than shown. The OC required may also differ from the model output in situations when committee discretion is applied. In any event, the OC amounts stated here are subject to change at any time at Moody's discretion.

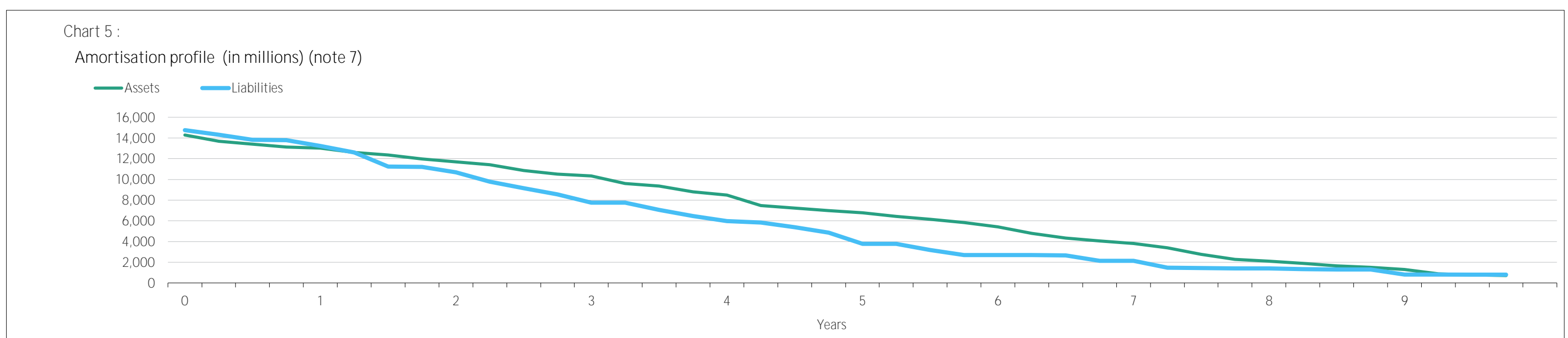
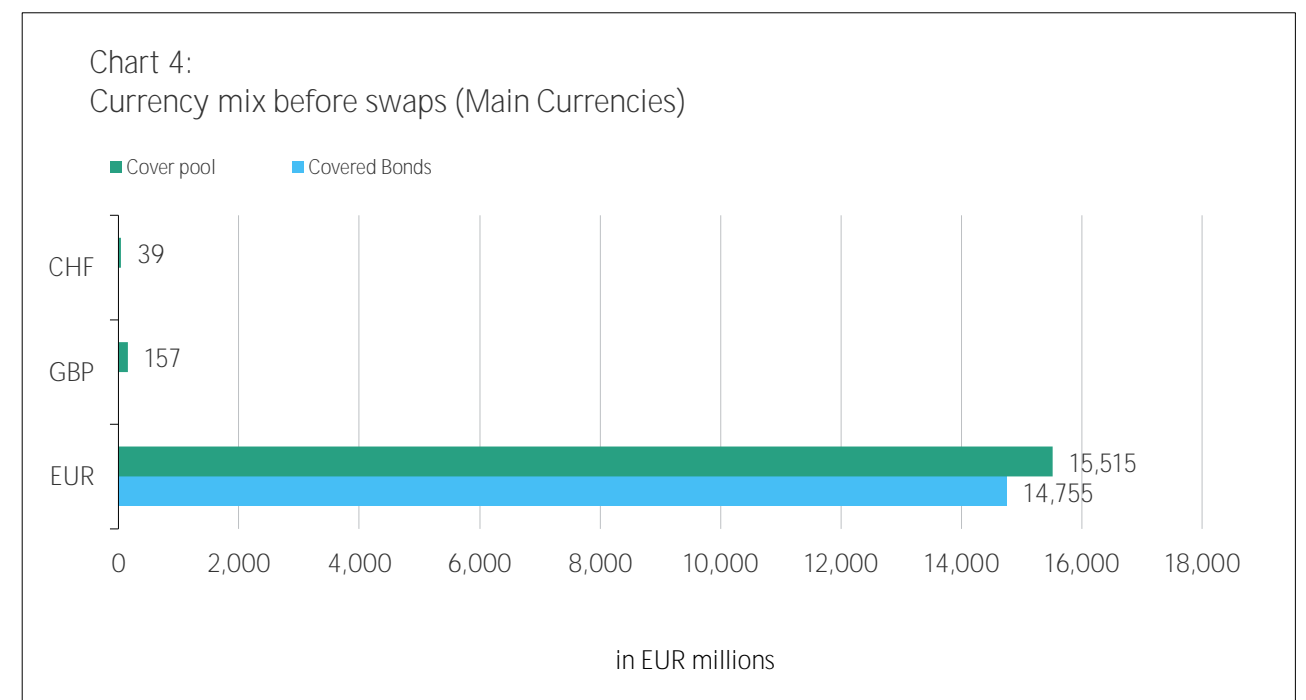
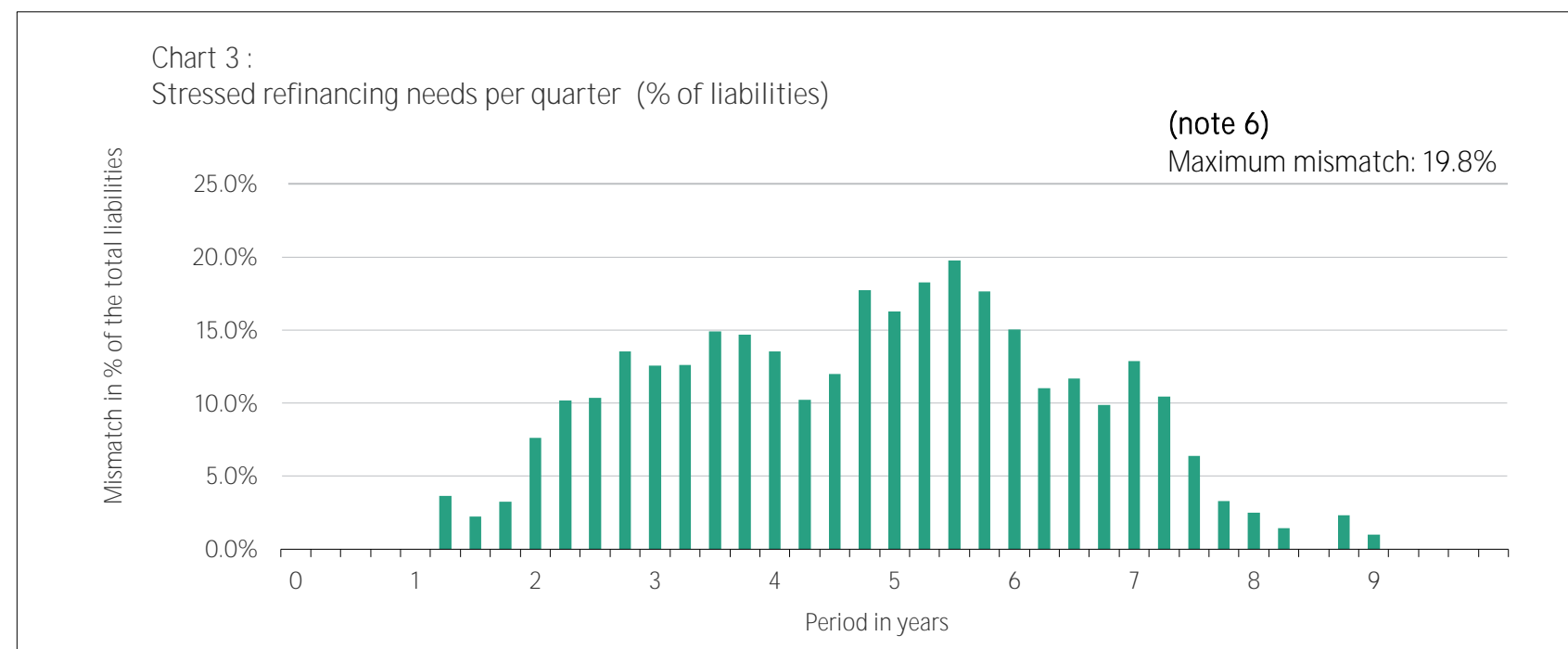
V. Asset Liability Profile

Interest Rate & Duration Mismatch (note 5)

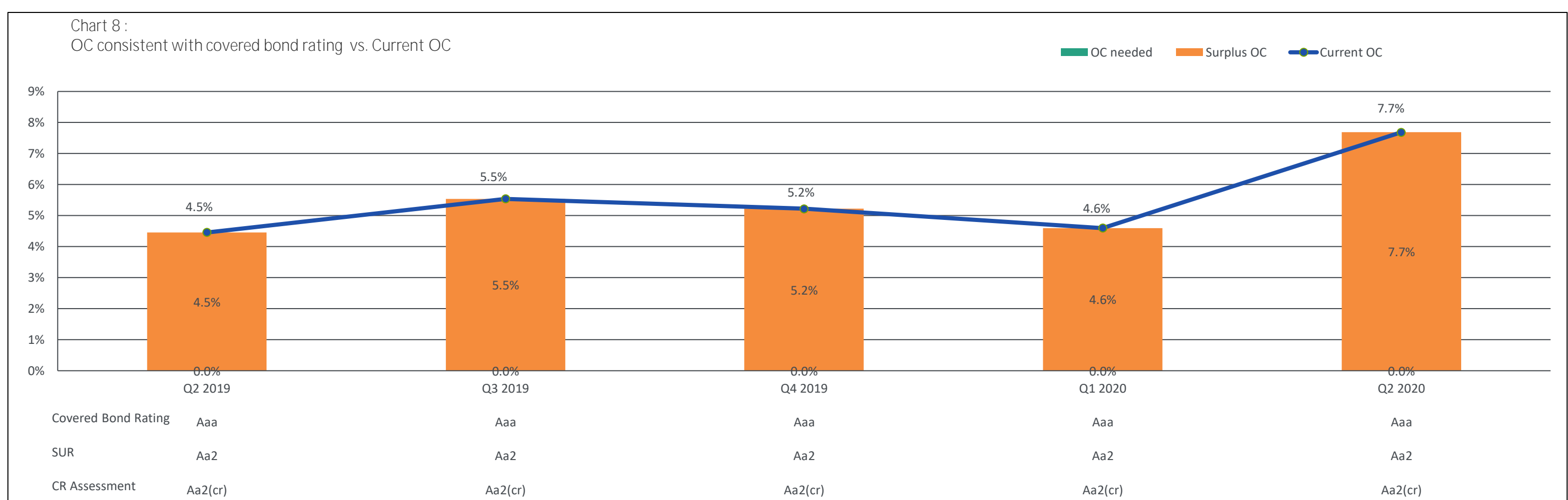
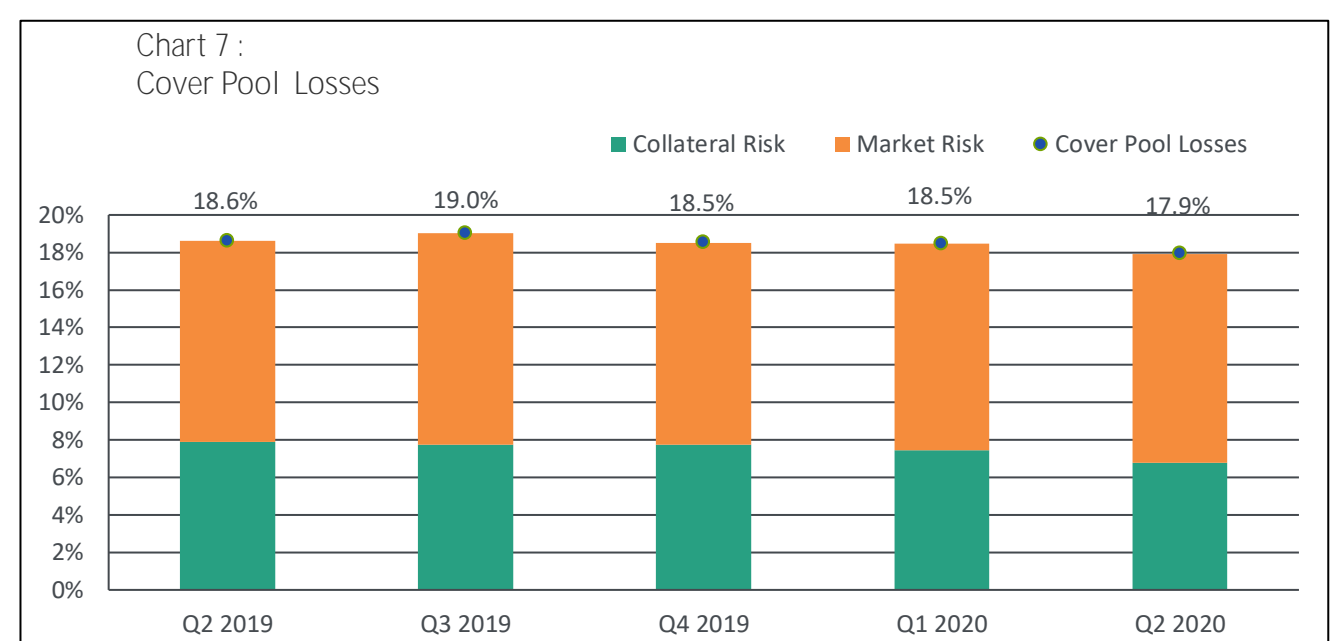
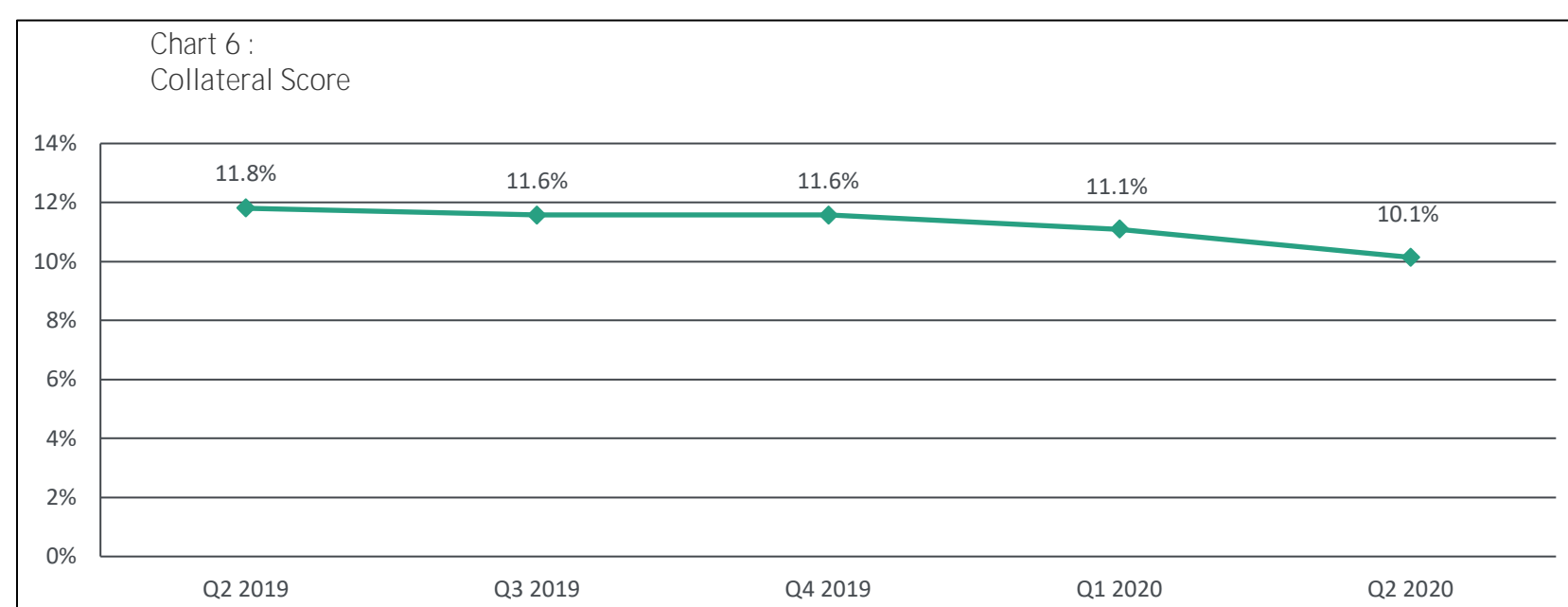
| | |
|---------------------------------------|-----------|
| Fixed rate assets in the cover pool: | 72.5% |
| Fixed rate covered bonds outstanding: | 78.9% |
| WAL of outstanding covered bonds: | 4.4 years |
| WAL of the cover pool: | 5.1 years |

Swap Arrangements

| | |
|--|----|
| Interest rate swap(s) in the Cover Pool: | No |
| Intra-group interest rate swap(s) provider(s): | No |
| Currency swap(s) in the Cover Pool: | No |
| Intra-group currency swap(s) provider(s): | No |



VI. Performance Evolution



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.moodys.com for the most updated credit rating action information and rating history.

(note 5) This assumes no prepayment.

(note 6) Based on principal flows only. Assumptions include no prepayments, principal collections limited to the portion of assets that make up the amount of the liabilities plus committed OC, no further CB issuance and no further assets added to the cover pool.

(note 7) Assumptions include swaps in place in Cover Pool, no prepayment and no further CB issuance.

VII. Cover Pool Information - Commercial Assets

Overview

| | |
|-----------------------|---|
| Asset type: | Commercial |
| Asset balance: | 14,358,640,989 |
| Average loan balance: | 10,344,842 |
| Number of loans: | 1,388 |
| Number of borrowers: | 791 |
| Largest 10 borrowers: | 12.4% |
| Number of properties: | 3,694 |
| Main countries: | Germany (67.1%), Netherlands (13.6%), France (9.7%) |

Details on Loan Underwriting

| | |
|--------------------------------|-----|
| WA DSCR: | n/d |
| WA loan seasoning (in months): | 45 |
| WA remaining term (in months): | 68 |

Details on LTV

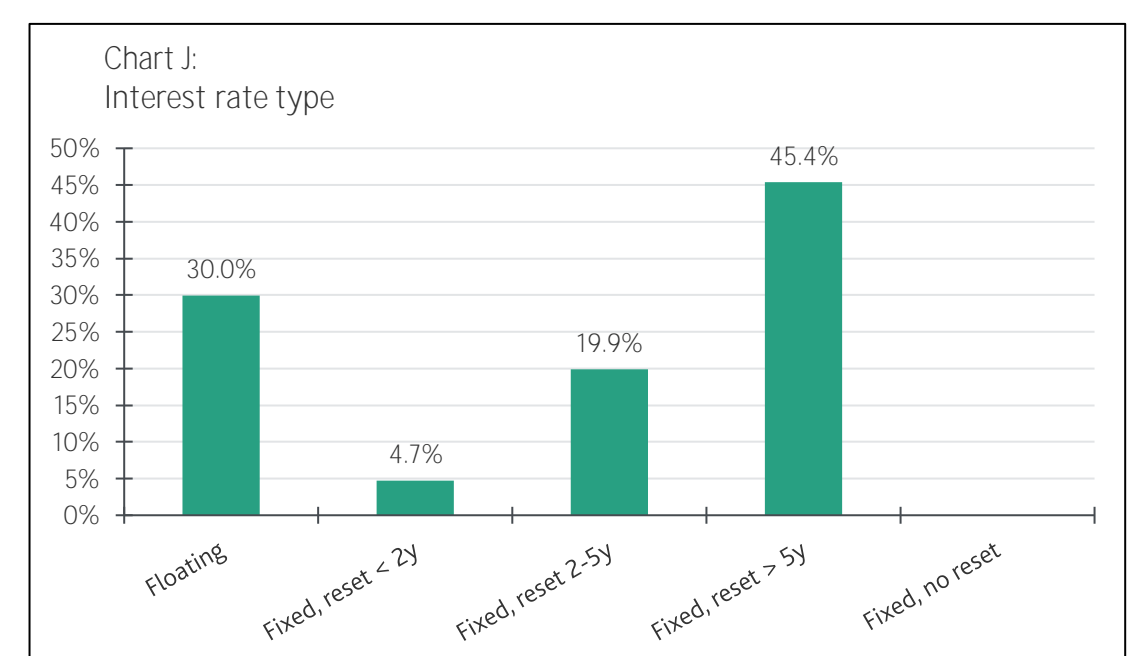
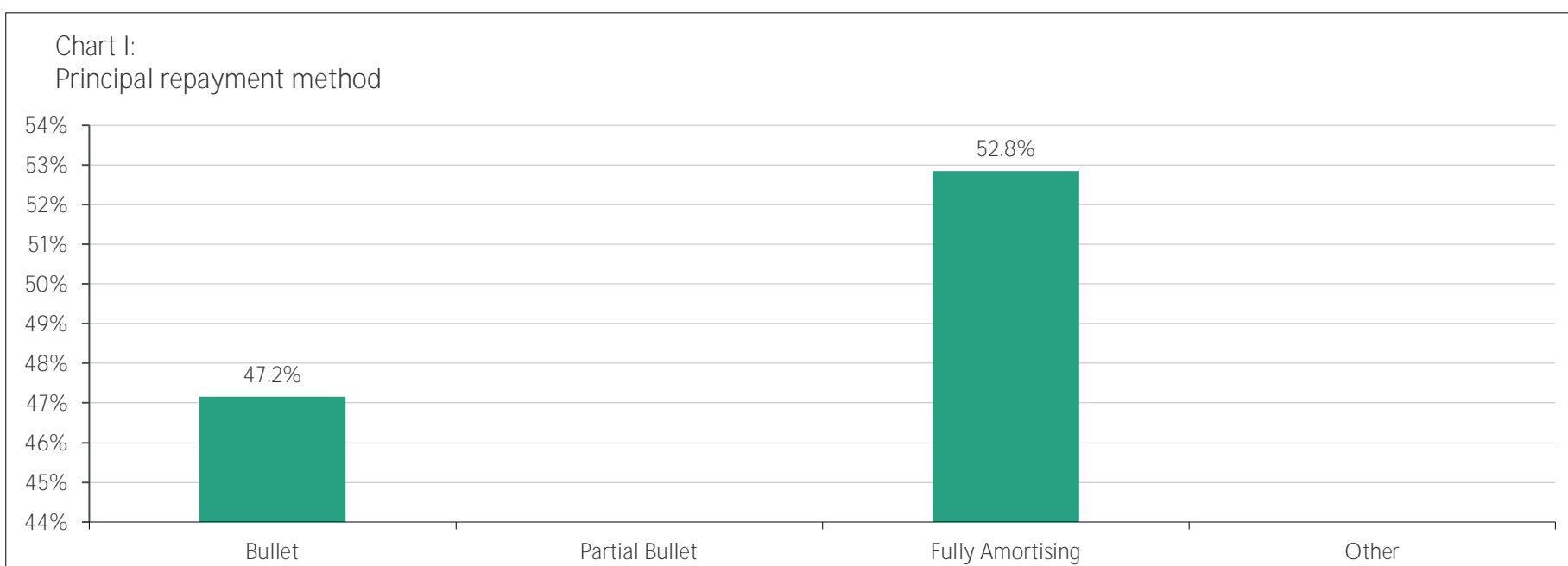
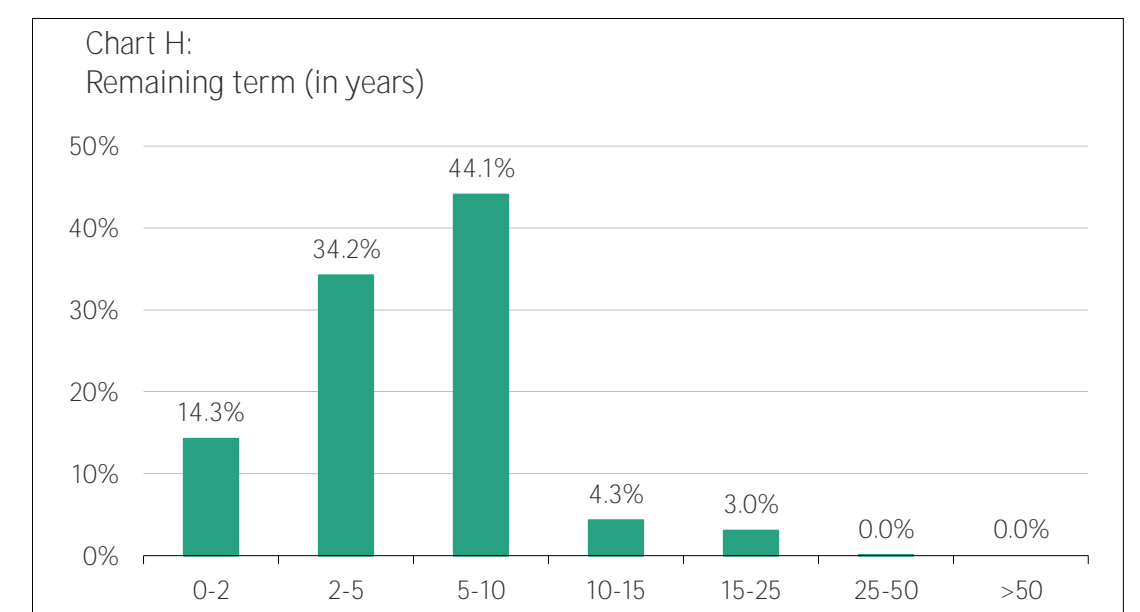
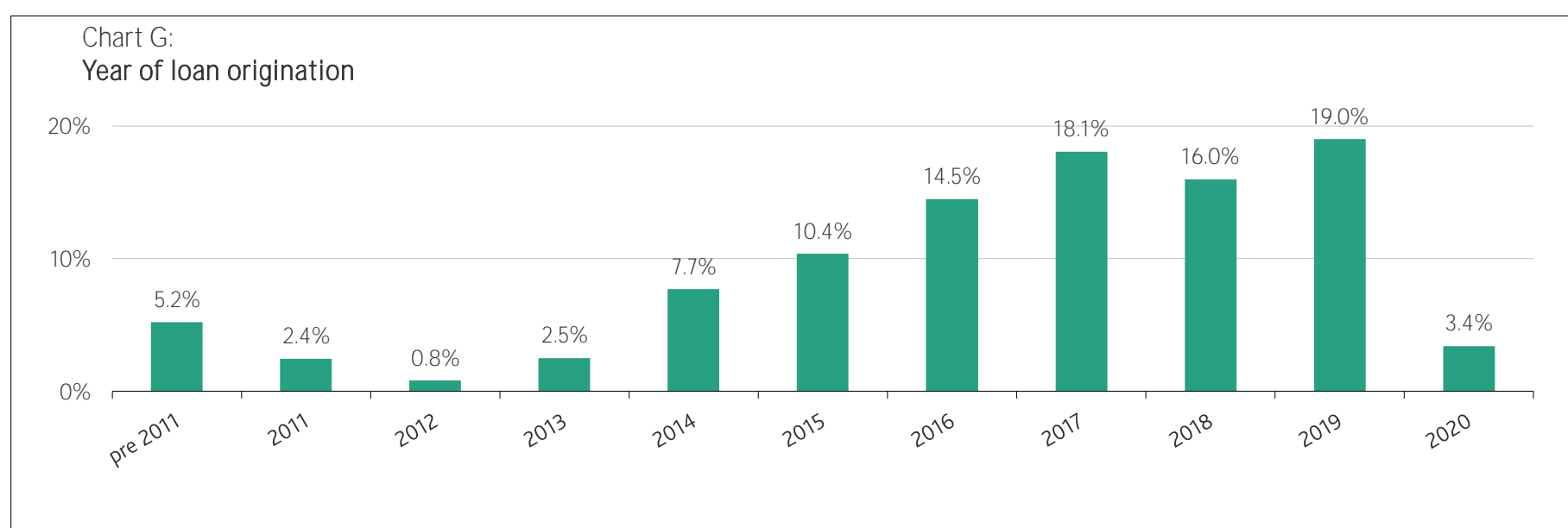
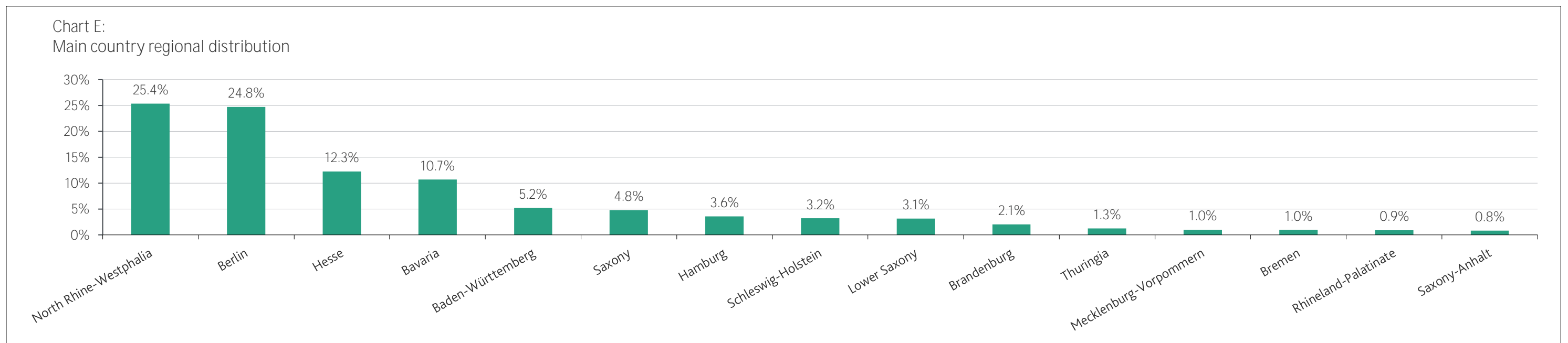
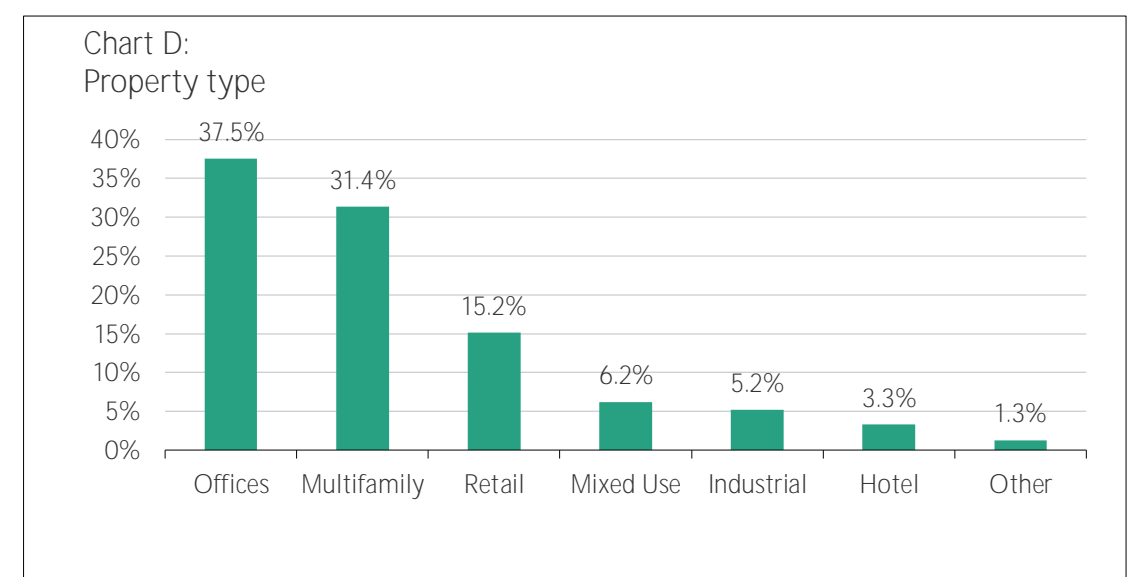
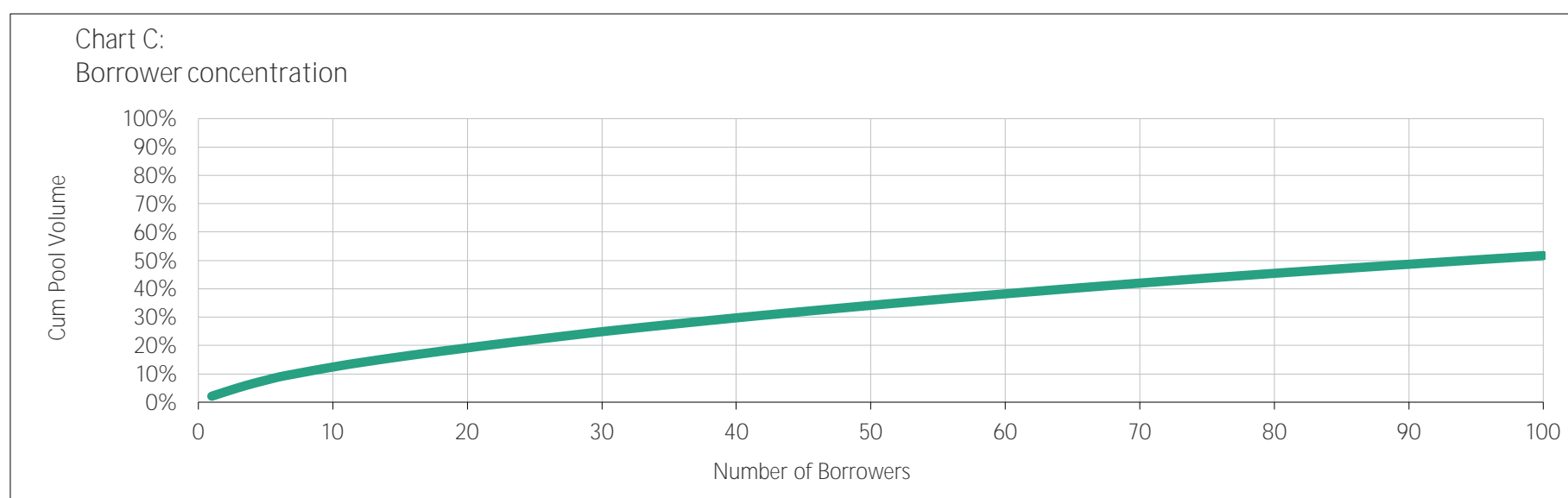
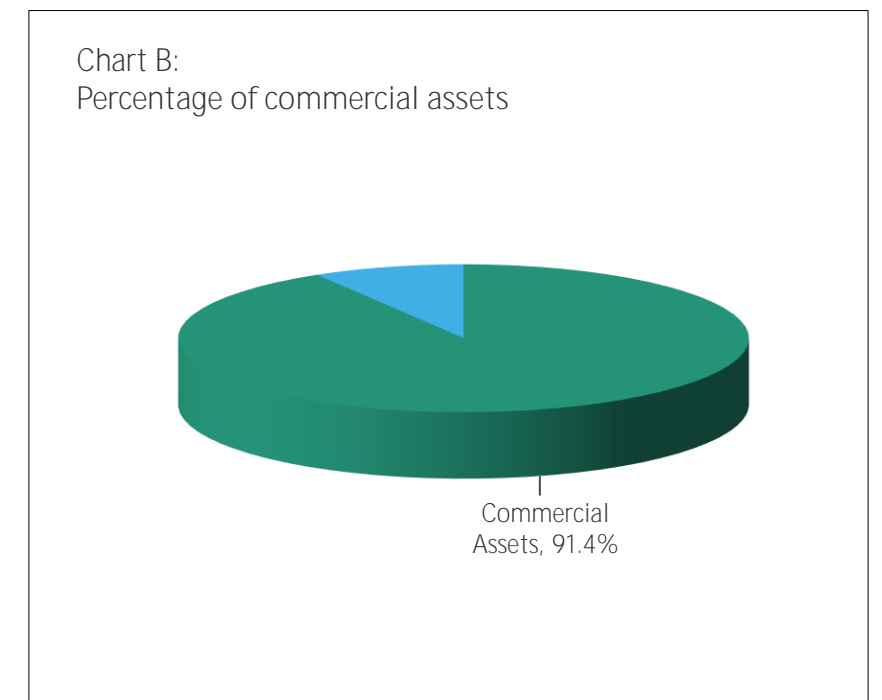
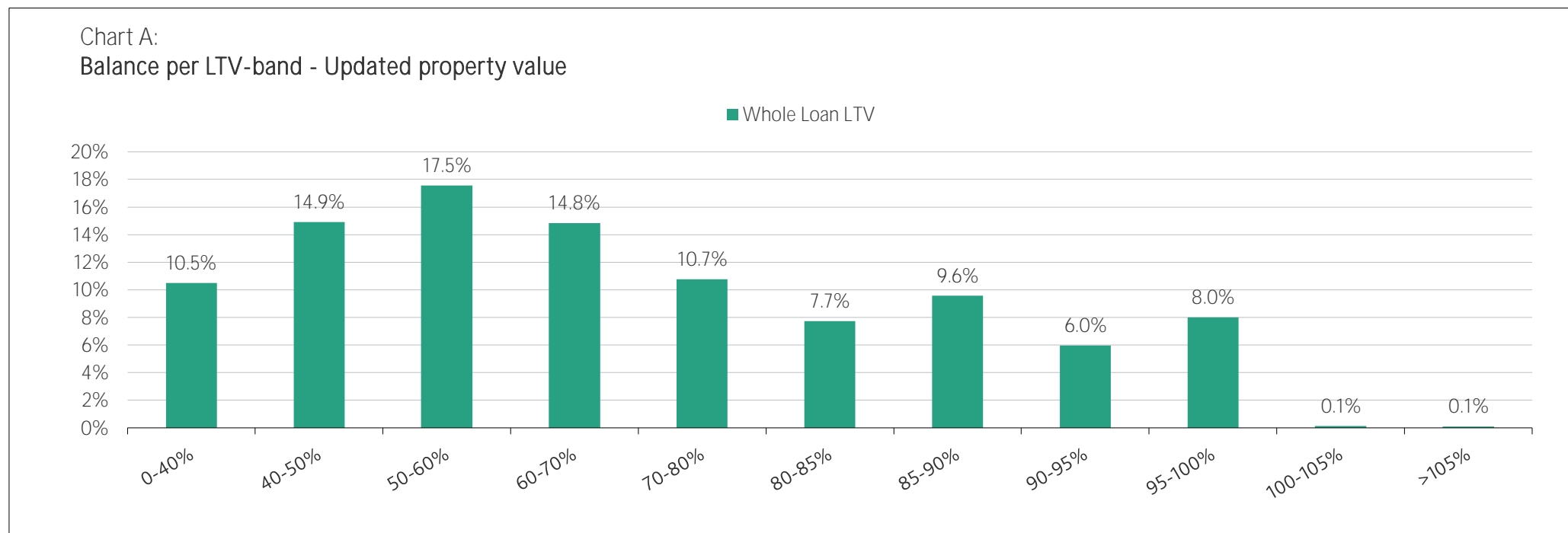
| | |
|---------------------|--------------|
| WA LTV(*): | n/d |
| WA Current LTV(**): | 65.4% |
| Valuation type: | Market Value |
| LTV Threshold: | 60.0% |

Specific Loan and Borrower characteristics

| | |
|------------------------------------|-------------------------------------|
| Bullet loans: | 47.2% |
| Main currencies: | EUR (98.6%), GBP (1.1%), CHF (0.3%) |
| Fixed rate loans: | 70.0% |
| Non-recourse to sponsor/initiator: | n/d |

Performance

| | |
|-----------------------------------|------|
| Loans in arrears ≥ 2 months: | 0.2% |
| Loans in a foreclosure procedure: | 0.0% |



(note *) Based on whole loan and property value at origination.
 (note **) Based on whole loan and updated property value.

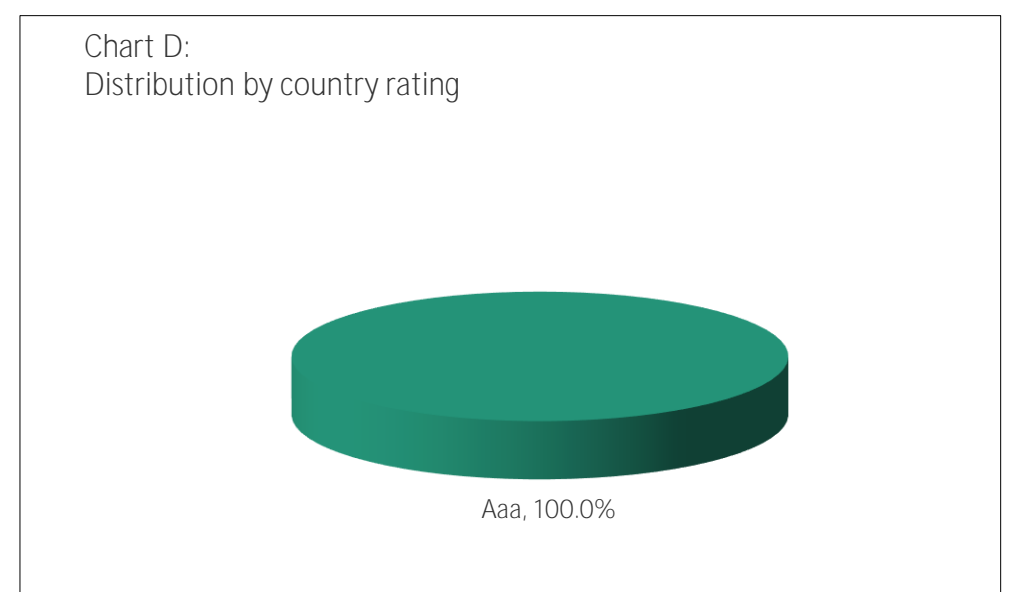
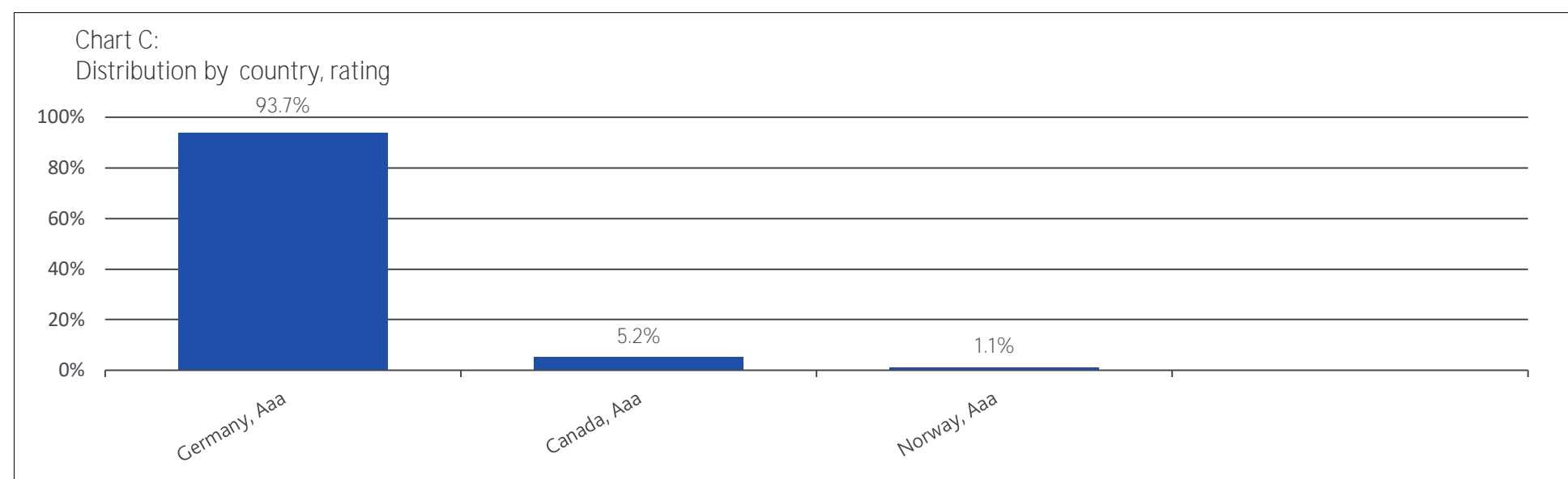
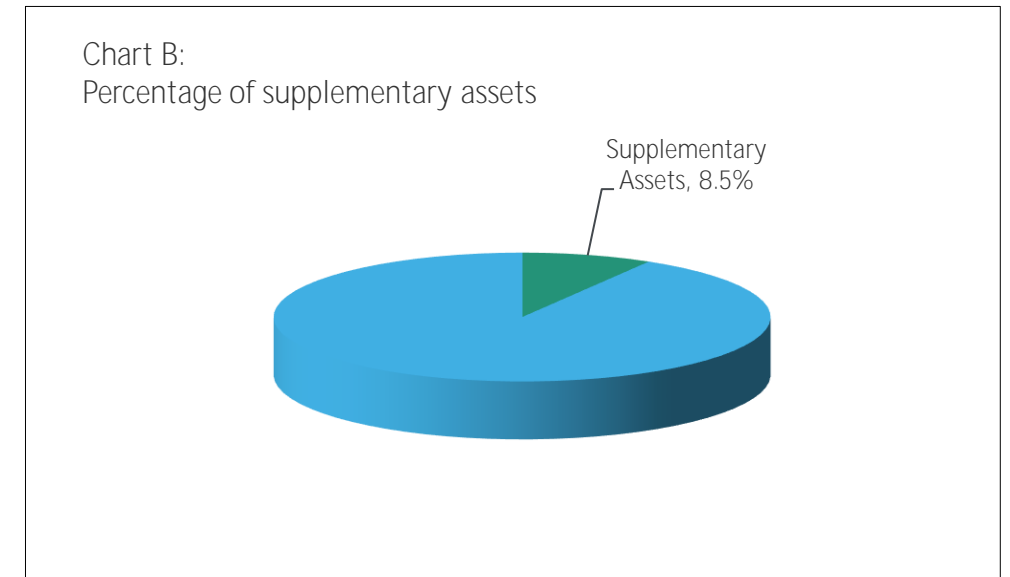
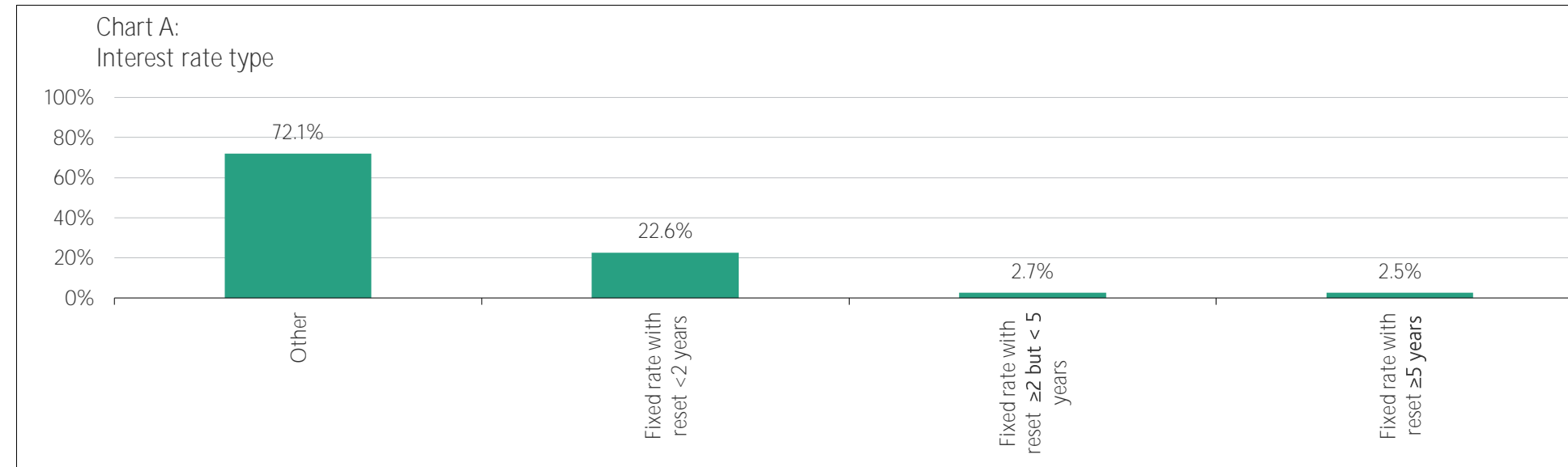
VIII. Cover Pool Information - Supplementary Assets

Overview

| | |
|--------------------------------|----------------------|
| Asset type: | Supplementary Assets |
| Asset balance: | 1,338,000,000 |
| WA remaining Term (in months): | 4 |
| Number of assets: | 12 |
| Number of borrowers: | 9 |
| Average assets size: | 111,500,000 |
| Average exposure to borrowers: | 148,666,667 |

Specific Loan and Borrower characteristics

| | |
|---|-------|
| Repo eligible assets: | 0.0% |
| Percentage of fixed rate assets: | 27.9% |
| Percentage of bullet assets: | 28.6% |
| Assets in non-domestic currency: | 0.0% |
| Performance | |
| Assets in arrears (≥ 2months - < 6months): | 0.0% |
| Assets in arrears (≥ 6months - < 12months): | 0.0% |
| Assets in arrears (> 12months): | 0.0% |
| Assets in a enforcement procedure: | 0.0% |



IX. Liabilities Information: Last 50 Issuances

| ISIN | Series Number | Currency | Outstanding Amount | Issuance Date | Expected Maturity | Legal Final Maturity | Interest Rate Type | Coupon | Principal Payment |
|--------------|----------------------|----------|--------------------|---------------|-------------------|----------------------|--------------------|--------------------|-------------------|
| DE000BHYOHL2 | n/d | EUR | 400,000,000 | 15/06/2020 | 13/06/2025 | 13/06/2025 | Floating rate | EURIBOR03 + 10 bps | HARD BULLET |
| DE000BHYOHK4 | n/d | EUR | 15,000,000 | 05/06/2020 | 05/06/2023 | 05/06/2023 | Fixed rate | 0.010% | HARD BULLET |
| DE000BHYOB06 | n/d | EUR | 670,000,000 | 18/05/2020 | 16/05/2025 | 16/05/2025 | Floating rate | EURIBOR03 + 24 bps | HARD BULLET |
| DE000BHYOHC1 | n/d | EUR | 15,000,000 | 04/03/2020 | 04/03/2050 | 04/03/2050 | Fixed rate | 0.750% | HARD BULLET |
| DE000BHYOB14 | n/d | EUR | 500,000,000 | 17/02/2020 | 17/02/2027 | 17/02/2027 | Fixed rate | 0.010% | HARD BULLET |
| DE000BHYOBZ5 | n/d | EUR | 20,000,000 | 28/01/2020 | 28/01/2025 | 28/01/2025 | Floating rate | EURIBOR03 + 50 bps | HARD BULLET |
| DE000BHYOBW2 | n/d | EUR | 425,000,000 | 25/11/2019 | 14/11/2024 | 14/11/2024 | Floating rate | EURIBOR03 + 4 bps | HARD BULLET |
| 701060200 | n/d | EUR | 5,500,000 | 13/11/2019 | 13/11/2042 | 13/11/2042 | Fixed rate | 1.040% | HARD BULLET |
| DE000BHYOBV4 | n/d | EUR | 100,000,000 | 17/10/2019 | 17/10/2025 | 17/10/2025 | Fixed rate | 0.010% | HARD BULLET |
| DE000BHYOBU6 | n/d | EUR | 150,000,000 | 30/09/2019 | 31/10/2023 | 31/10/2023 | Floating rate | EURIBOR03 + 0 bps | HARD BULLET |
| DE000BHYOBS0 | n/d | EUR | 840,508,000 | 27/08/2019 | 29/08/2022 | 29/08/2022 | Fixed rate | 0.010% | HARD BULLET |
| DE000BHYOGL4 | n/d | EUR | 500,000,000 | 17/07/2019 | 19/07/2027 | 19/07/2027 | Fixed rate | 0.010% | HARD BULLET |
| 701060100 | n/d | EUR | 5,000,000 | 27/06/2019 | 27/06/2029 | 27/06/2029 | Fixed rate | 0.210% | HARD BULLET |
| DE000BHYOBQ4 | n/d | EUR | 500,000,000 | 29/05/2019 | 29/05/2029 | 29/05/2029 | Fixed rate | 0.375% | HARD BULLET |
| 701060000 | 7010600001510 | EUR | 10,000,000 | 17/01/2019 | 17/01/2059 | 17/01/2059 | Fixed rate | 1.960% | HARD BULLET |
| DE000BHYOBN1 | 20006672890667800000 | EUR | 10,000,000 | 12/12/2018 | 12/12/2028 | 12/12/2028 | Fixed rate | 0.800% | HARD BULLET |
| DE000BHYOGC3 | 20006672890716700000 | EUR | 500,000,000 | 22/10/2018 | 22/10/2025 | 22/10/2025 | Fixed rate | 0.625% | HARD BULLET |
| DE000BHYOBH3 | 20006672890667200000 | EUR | 633,164,000 | 09/07/2018 | 10/10/2022 | 10/10/2022 | Zero Bond | Zero | HARD BULLET |
| DE000BHYO150 | 200066728901502000 | EUR | 732,286,000 | 30/05/2018 | 30/05/2023 | 30/05/2023 | Fixed rate | 0.250% | HARD BULLET |
| 701059900 | 7010599001510 | EUR | 5,000,000 | 15/05/2018 | 15/05/2028 | 15/05/2028 | Fixed rate | 0.895% | HARD BULLET |
| 701059800 | 7010598001510 | EUR | 5,000,000 | 26/04/2018 | 26/04/2028 | 26/04/2028 | Fixed rate | 0.920% | HARD BULLET |
| 701059700 | 7010597001510 | EUR | 5,000,000 | 20/03/2018 | 20/03/2048 | 20/03/2048 | Fixed rate | 2.000% | HARD BULLET |
| DE000BHYOMY5 | n/d | EUR | 580,000,000 | 12/03/2018 | 30/07/2021 | 30/07/2021 | Floating rate | EURIBOR03 - 5 bps | HARD BULLET |
| DE000BHYOMX7 | 20006672890778900000 | EUR | 500,000,000 | 26/02/2018 | 26/02/2026 | 26/02/2026 | Fixed rate | 0.750% | HARD BULLET |
| DE000BHYOMW9 | 20006672890778800000 | EUR | 50,000,000 | 15/02/2018 | 15/02/2023 | 15/02/2023 | Floating rate | EURIBOR03 + 20 bps | HARD BULLET |
| 701059600 | 7010596001510 | EUR | 5,000,000 | 14/02/2018 | 14/02/2028 | 14/02/2028 | Fixed rate | 0.950% | HARD BULLET |
| DE000BHYOMU3 | 20006672890778500000 | EUR | 740,800,000 | 28/11/2017 | 29/11/2021 | 29/11/2021 | Zero Bond | Zero | HARD BULLET |
| 701059500 | 7010595001510 | EUR | 5,000,000 | 24/10/2017 | 24/10/2057 | 24/10/2057 | Fixed rate | 1.900% | HARD BULLET |
| 701059400 | 7010594001510 | EUR | 5,000,000 | 11/09/2017 | 11/09/2057 | 11/09/2057 | Fixed rate | 1.820% | HARD BULLET |
| DE000BHYOMT5 | 20006672890778500000 | EUR | 500,000,000 | 05/09/2017 | 05/01/2024 | 05/01/2024 | Fixed rate | 0.125% | HARD BULLET |
| 701059300 | 7010593001510 | EUR | 5,000,000 | 05/09/2017 | 05/09/2022 | 05/09/2022 | Fixed rate | 0.005% | HARD BULLET |
| 701059200 | 7010592001510 | EUR | 5,000,000 | 30/06/2017 | 29/06/2057 | 29/06/2057 | Fixed rate | 1.800% | HARD BULLET |
| 701059100 | 7010591001510 | EUR | 5,000,000 | 28/06/2017 | 28/06/2027 | 28/06/2027 | Fixed rate | 0.648% | HARD BULLET |
| DE000BHYOGH2 | 20006672890717200000 | EUR | 500,000,000 | 14/06/2017 | 23/10/2023 | 23/10/2023 | Fixed rate | 0.125% | HARD BULLET |
| 701059000 | 7010590001510 | EUR | 5,000,000 | 08/06/2017 | 08/06/2057 | 08/06/2057 | Fixed rate | 1.800% | HARD BULLET |
| DE000BHYOMQ1 | 20006672890778100000 | EUR | 500,000,000 | 22/02/2017 | 21/02/2025 | 21/02/2025 | Fixed rate | 0.375% | HARD BULLET |
| DE000BHYOBF7 | n/d | EUR | 570,000,000 | 28/11/2016 | 29/10/2021 | 29/10/2021 | Floating rate | EURIBOR03 + 3 bps | HARD BULLET |
| 701058900 | 7010589001510 | EUR | 34,000,000 | 21/11/2016 | 21/11/2031 | 21/11/2031 | Fixed rate | 0.990% | HARD BULLET |
| 701058800 | 7010588001510 | EUR | 5,000,000 | 05/10/2016 | 05/10/2046 | 05/10/2046 | Fixed rate | 1.050% | HARD BULLET |
| 701058700 | 7010587001510 | EUR | 48,000,000 | 21/09/2016 | 21/09/2038 | 21/09/2038 | Fixed rate | 1.380% | HARD BULLET |
| 701058600 | 7010586001510 | EUR | 5,000,000 | 22/08/2016 | 22/08/2046 | 22/08/2046 | Fixed rate | 1.472% | HARD BULLET |
| 701058500 | 7010585001510 | EUR | 33,000,000 | 20/07/2016 | 20/07/2046 | 20/07/2046 | Fixed rate | 1.375% | HARD BULLET |
| DE000BHYOBE0 | 9981141610 | EUR | 500,000,000 | 03/05/2016 | 03/05/2024 | 03/05/2024 | Fixed rate | 0.375% | HARD BULLET |
| 701058200 | 7010582001510 | EUR | 40,000,000 | 16/03/2016 | 16/03/2056 | 16/03/2056 | Fixed rate | 1.790% | HARD BULLET |
| 701058100 | 7010581001510 | EUR | 3,000,000 | 26/02/2016 | 27/02/2023 | 27/02/2023 | Fixed rate | 0.190% | HARD BULLET |
| DE000BHYOBC4 | 9980881610 | EUR | 500,000,000 | 22/02/2016 | 22/02/2023 | 22/02/2023 | Fixed rate | 0.250% | HARD BULLET |
| DE000BHYOBA8 | 9980641610 | EUR | 500,000,000 | 22/10/2015 | 22/10/2020 | 22/10/2020 | Fixed rate | 0.125% | HARD BULLET |
| 701058000 | 7010580001510 | EUR | 25,000,000 | 01/10/2015 | 01/10/2035 | 01/10/2035 | Fixed rate | 1.805% | HARD BULLET |
| DE000BHYOA98 | 200000009980602000 | EUR | 50,000,000 | 11/09/2015 | 11/09/2020 | 11/09/2020 | Fixed rate | 0.200% | HARD BULLET |
| DE000BHYOGP5 | 9980521610 | EUR | 500,000,000 | 05/05/2015 | 05/05/2022 | 05/05/2022 | Fixed rate | 0.125% | HARD BULLET |

© 2020 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/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S 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 BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE 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 MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE 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 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. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS 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 ITS 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, ASSESSMENTS, OTHER OPINIONS, AND 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, ASSESSMENTS, OTHER OPINIONS OR 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.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND 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 its 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 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 fees ranging from \$1,000 to approximately \$2,700,000. 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 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.

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 credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

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