

A nighttime cityscape featuring numerous illuminated skyscrapers and a complex highway interchange with light trails from traffic. The scene is set against a dark blue sky with some clouds.

Global Investment Banks: Impact of Post Crisis Regulation on Business Models and Competitive Dynamics

Laurie Mayers, Associate Managing Director, EMEA Banking

July 2018

Agenda

1. Outlook for Global Investment Banks (GIBs)
2. Impact of Post Crisis Regulation on GIB Business Models
3. Implications for Competition

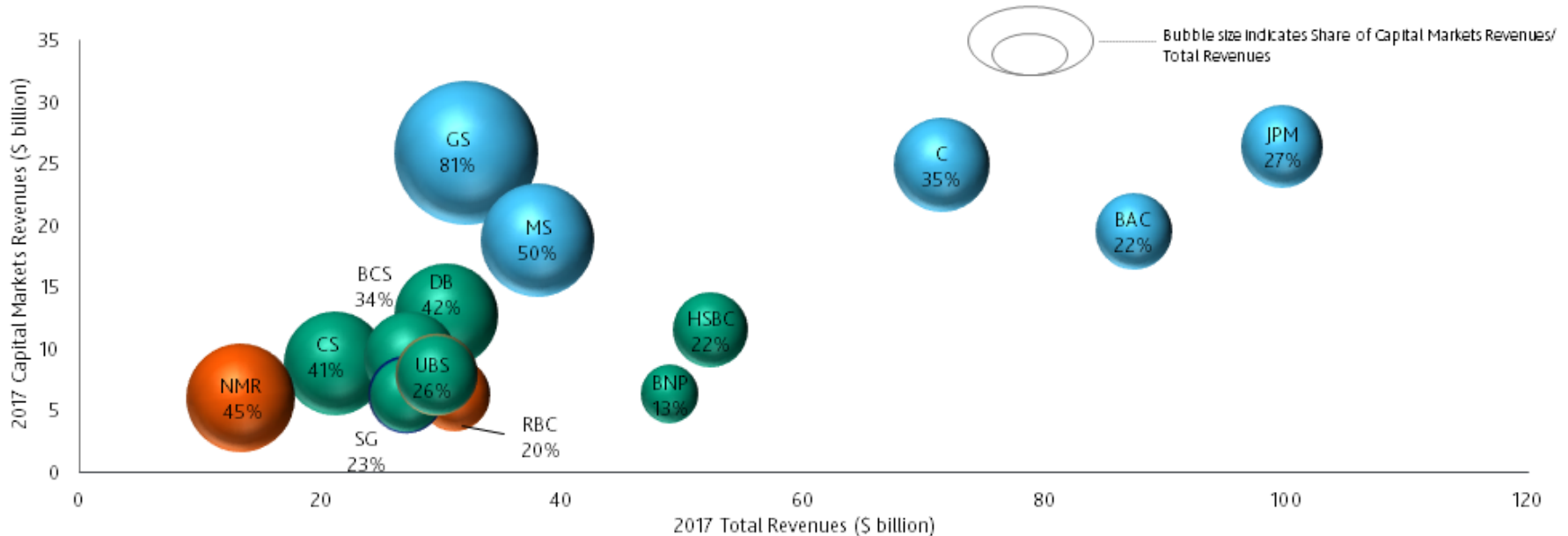


Outlook for Global Investment Banks

Global investment bank peer group

- » Underlying demand for core advisory and liquidity provision capabilities will endure
- » However margins are under pressure

Capital markets revenues relative to total revenues, 2017



Note: Nomura (NMR) data is for YTD December 2017 annualized. Capital markets revenues based on firm LOB disclosures including sales/trading and investment banking (origination and advisory) but excluding other corporate banking activities where possible. Source: Moody's Investors Service

Outlook is positive for global investment banks

Supportive conditions expected over the next 12 months

NEGATIVE

STABLE

POSITIVE

What could change outlook to negative

- » Substantial loosening of regulations, especially on capital, leverage or liquidity, or restrictions on principal risk taking
- » Intensified shareholder pressure for higher returns, leading to greater risk taking or allowing even greater shareholder payouts
- » Increased competition from new entrants and less regulated non-banks
- » Unexpected changes in monetary policy that fuel market disruptions or asset price shocks

What could change outlook to stable

- » Slower global economic growth or an inverted yield curve, especially if it leads to elevated credit costs
- » Continuation of depressed client activity levels not offset by cost reductions
- » Re-escalation of compliance, litigation, restructuring and conduct costs
- » Insufficient improvement in fundamentals from re-engineering and restructuring efforts

- » Broadening global growth and divergent central bank policies will drive greater client activity
- » Profitability will improve, especially in US, and to a lesser extent in UK and Europe, as interest rates rise and legacy and restructuring costs subside
- » Business model reengineering and investments in technology will boost efficiency
- » Tail risks will decline as non-core portfolios wind down and legacy litigation is settled
- » Capital and liquidity will remain strong, notwithstanding rising shareholder payouts

The Industry Outlook (positive, stable or negative) indicates our forward-looking assessment of fundamental credit conditions that will affect the creditworthiness of global investment banks over the next 12-18 months. As such, the outlook provides our view of how the operating environment for global investment banks, including macroeconomic, competitive and regulatory trends, will affect, among other things, asset quality, capital, funding, liquidity and profitability. Since outlooks represent our forward-looking view on credit conditions that factor into our ratings, a negative (positive) outlook suggests that negative (positive) rating actions are more likely on average. However, the outlook does not represent a sum of upgrades, downgrades or ratings under review, or an average of the rating outlooks of all global investment banks, but rather our assessment of the direction of credit fundamentals overall within the industry broadly.



Impact of Post Crisis Regulation on GIB Business Models

Impact of Post Crisis Regulation

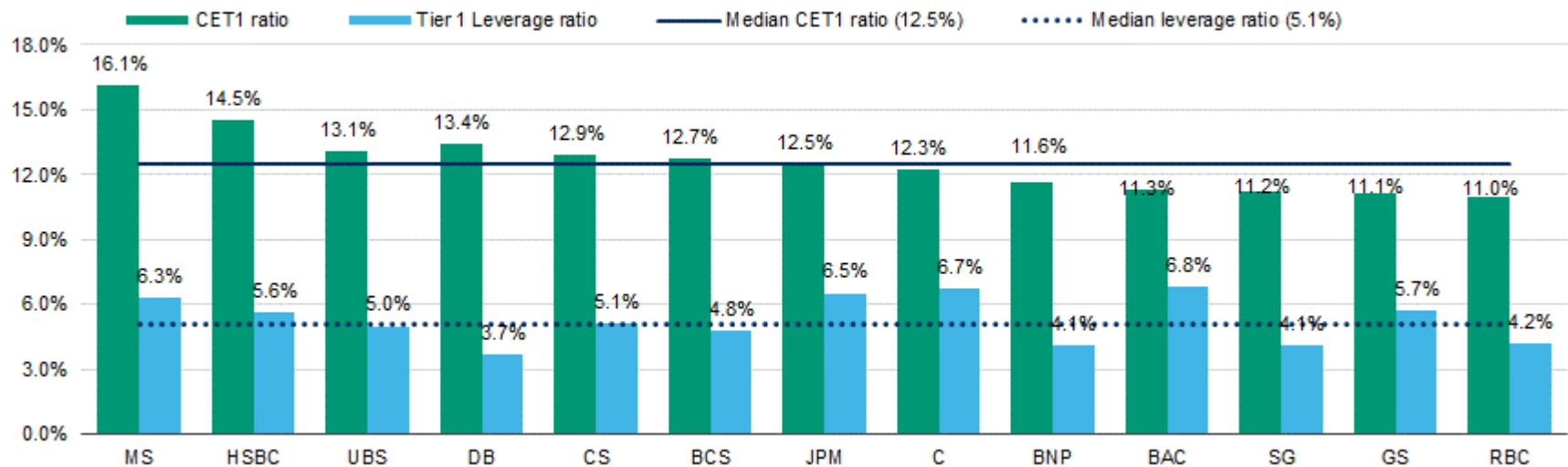
Key Messages

- Post crisis regulation has materially reshaped GIB business models in terms of :
 - Risk profiles, capitalisation, leverage and funding and liquidity profiles
 - Asset liability management processes
 - Business planning and capital management processes
 - Measurement of and setting of return targets
- Adapting to the new regulatory landscape has been easier for some than for others
 - A more supportive operating environment has provided an advantage for the US GIBs
 - For some European GIBs, the adjustment process continues

Capital remains supported by prudent regulation

- » US-based firms have greater leverage capacity for prime finance and repo business

Q1 2018 capital and SLR ratios

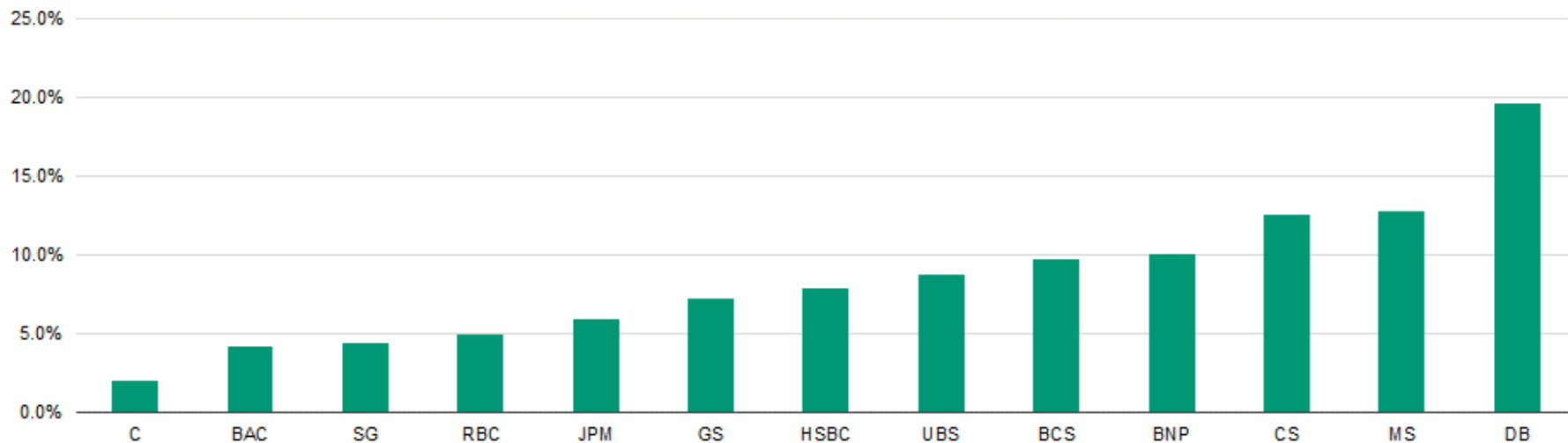


Source: Moody's Banking FM and company reports

Varying capacity to absorb stress

- » Asset risk has declined for all of the GIBs
- » However firms with stronger capital markets segment earnings have greater capacity to absorb market risk

Stressed VaR % of 2017 reported capital market pre-tax earnings

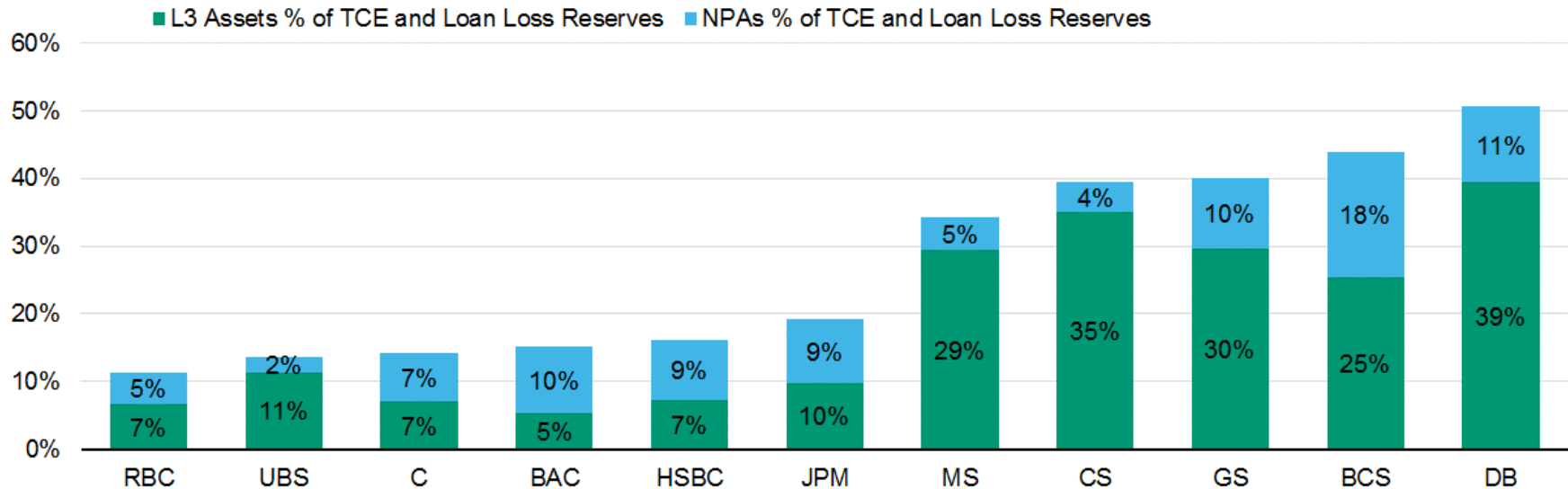


Note: CS capital market pretax earnings excludes legacy restructuring segment. Stressed VaR as reported in Pillar 3 and/or company financials, based on 99% 10-day intervals with the exception of RBC, which was adjusted. Source: Company reports and Moody's Investors Service

More granular risk at universal banks

- » Banks with the most diversified business models (RBC, UBS, C, BAC, HSBC and JPM) fare better on this measure

Gross Level 3 and non-performing assets to TCE and reserves

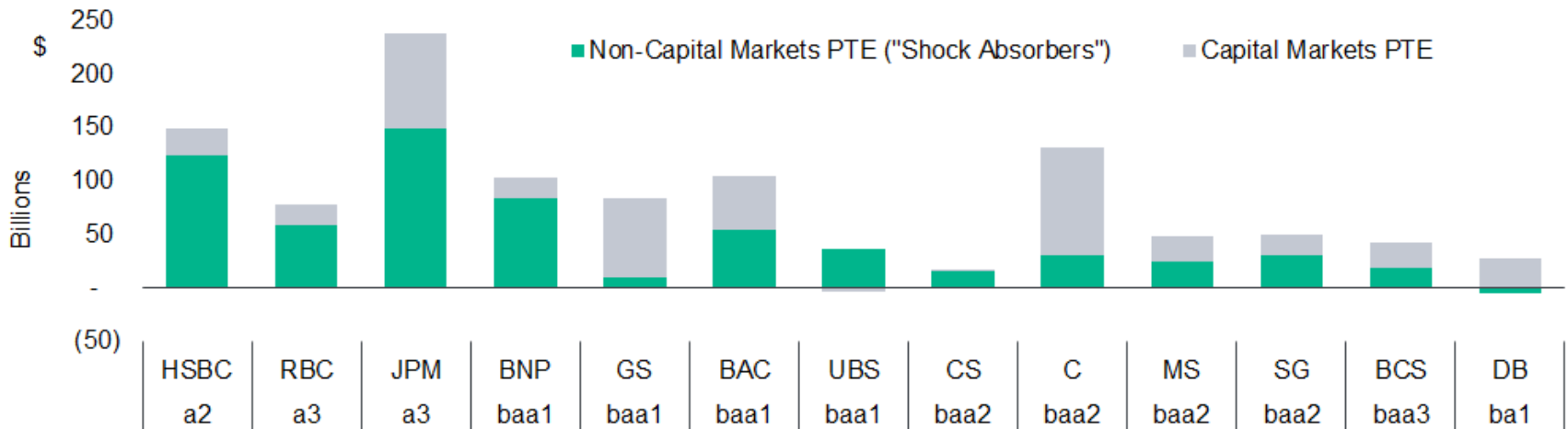


Note: BNP and SG excluded because their reported NPAs are not directly comparable to the rest of the group. Source: Moody's Banking FM and company reports

“Shock-absorption” capacity varies

- » Firms with the most diversified franchises and prudently scaled capital markets businesses have greatest flexibility

Total cumulative pre-tax earnings (2010-17)

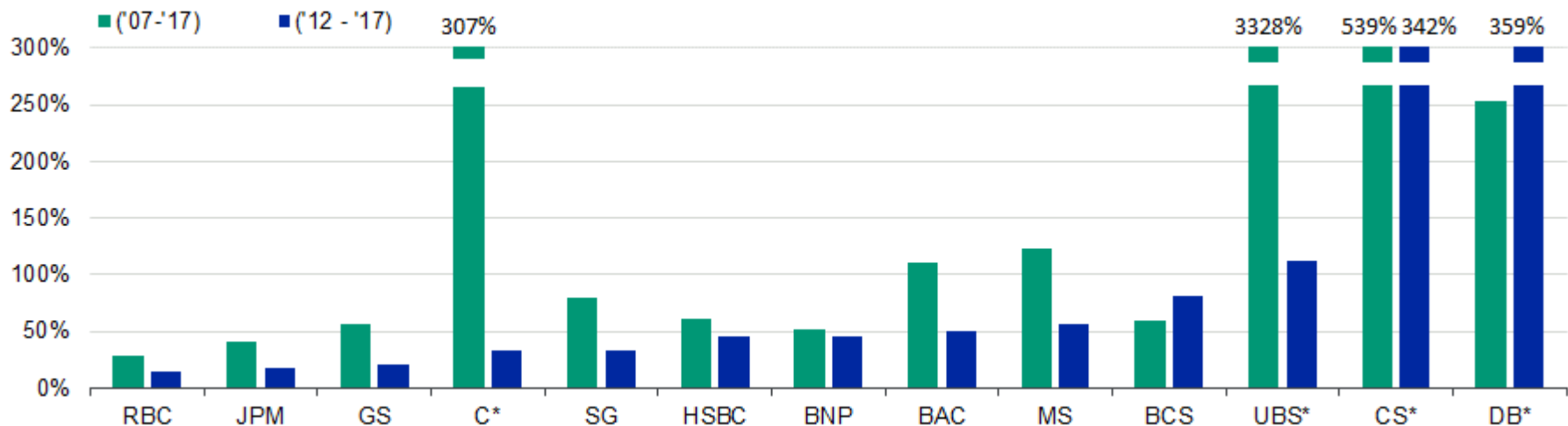


Note: In general we use reported line of business pretax earnings, less DVA where disclosed. Legacy and Corporate segments typically allocated to “shock absorbers” (i.e., non-capital markets earnings). Exceptions include: JPM, we estimate earnings from institutional operating services and allocate that portion to the shock absorbers; BCS, we exclude transactional banking and corporate lending and allocate that portion to the shock absorbers; UBS, Capital Markets PTE includes both 'Investment Bank' segment and the 'Corporate Center - Non-core and Legacy Portfolio'; CS, Capital Markets PTE includes combined income before taxes of the 'APAC Markets', 'Global Markets', 'Investment Banking & Capital Markets', and 'Strategic Resolution Unit' (excluding non-controlling interests without SEI, Private Banking & Wealth Management and Corporate Center nonstrategic SRU contribution) segments. Prior years' earnings have not been restated following reorganizations. Source: Moody's Banking FM and company reports

Volatility is a “report card” on execution

- » US firms have reduced volatility following the financial crisis by cutting costs, settling litigation and running down legacy portfolios
- » Some European firms have seen their volatility increase post crisis – due to elevated legacy, litigation and restructuring costs

Semiannual pre-tax earnings volatility adjusted only for DVAs (2007-2017)

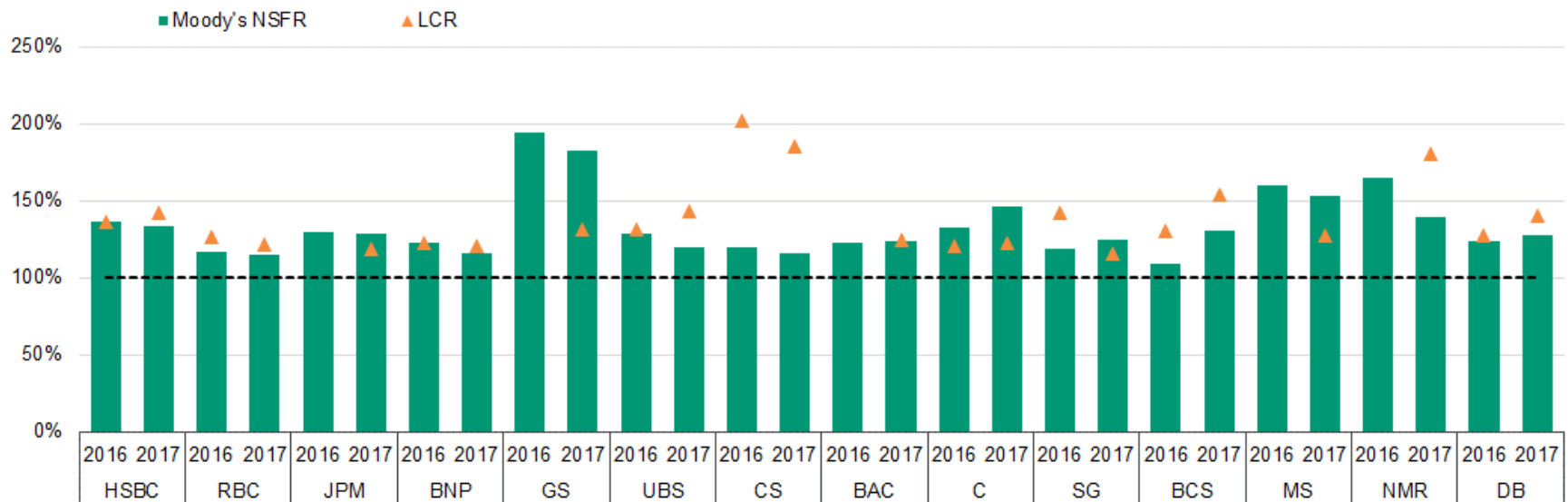


*Certain banks above have volatility above 300% for at least one of the periods displayed. Source: Company reports and Moody's Investors Service

Liquidity provides resilience against market shocks

- » GIBs now fully compliant with the liquidity coverage ratio (LCR), a positive
- » But Total Loss Absorbing Capacity compliance may increase wholesale funding stock of some European GIBs

Moody's NSFR and Reported LCRs

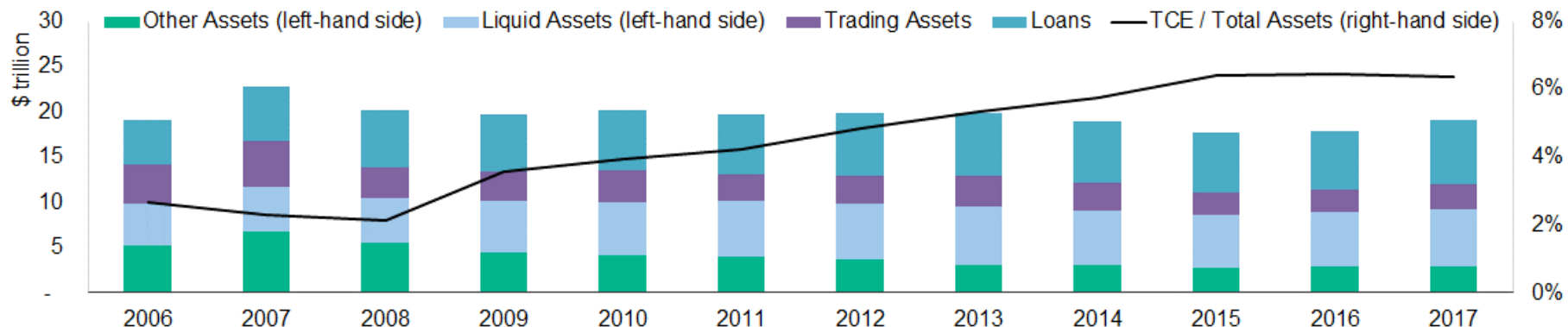


Note: Moody's NSFR compares sources of long-term funding including equity capital, long-term debt and more stable deposits to uses of long-term funding such as illiquid assets, loans and securities haircuts Source: Moody's Banking FM and company reports

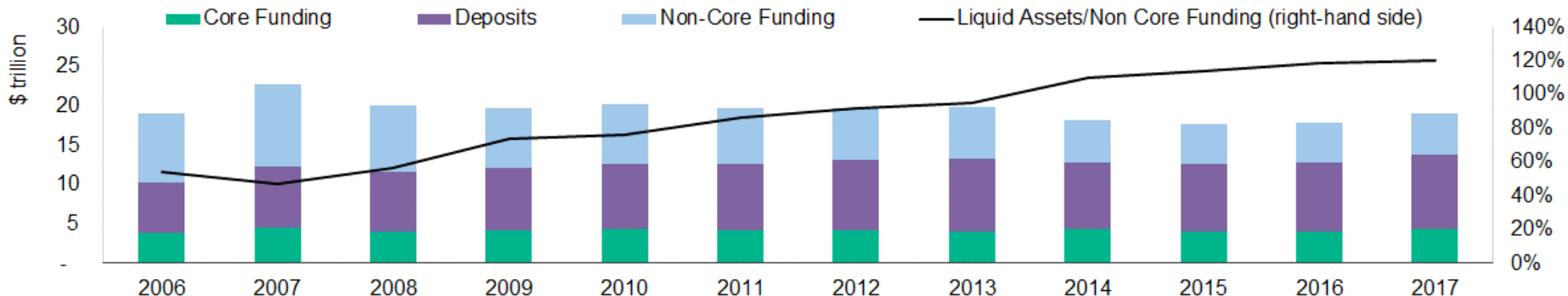
Balance sheet improvements plateau

- » Leverage and trading inventory have declined and funding stability has increased

Aggregate Industry assets



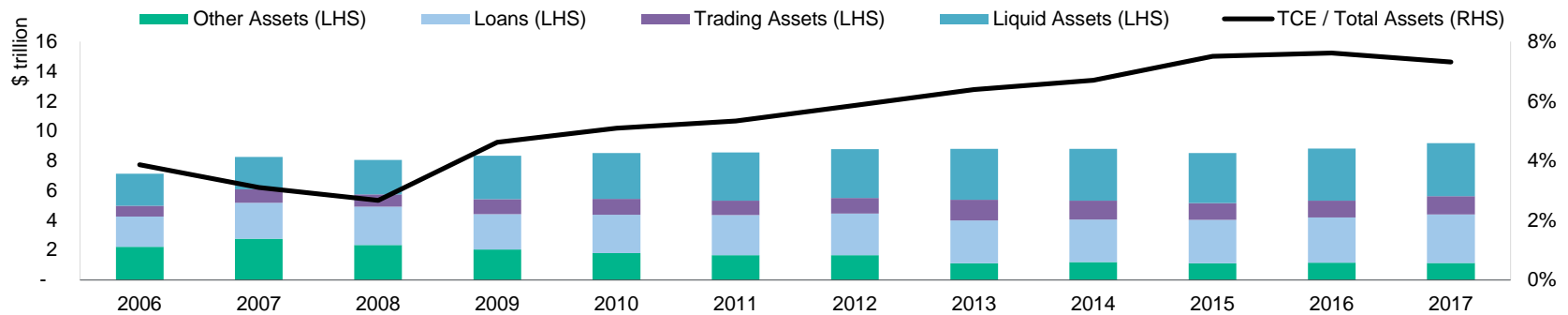
Aggregate Industry liabilities and shareholder's equity



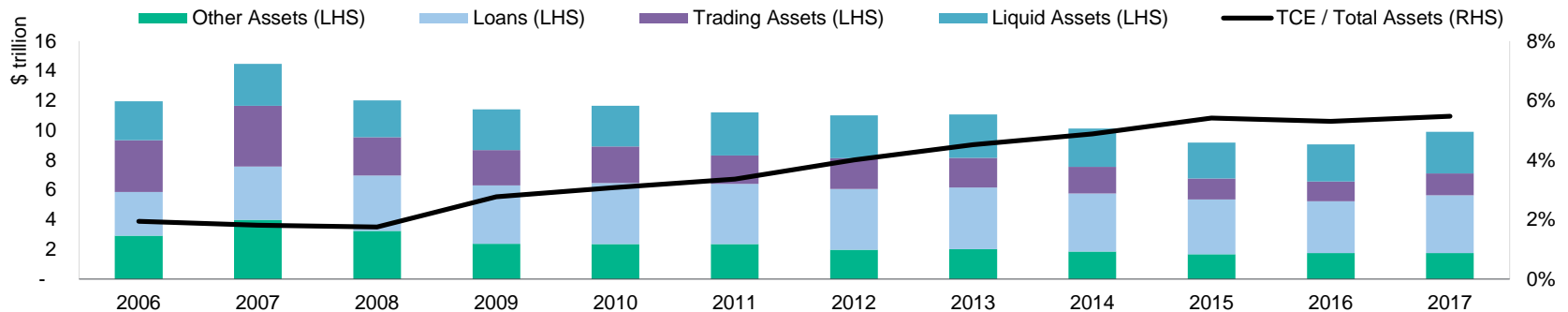
Note: Core funding includes equity and long-term debt. Source: Moody's Banking FM and company reports

However pace of change varies - Assets

NorAm GIBs



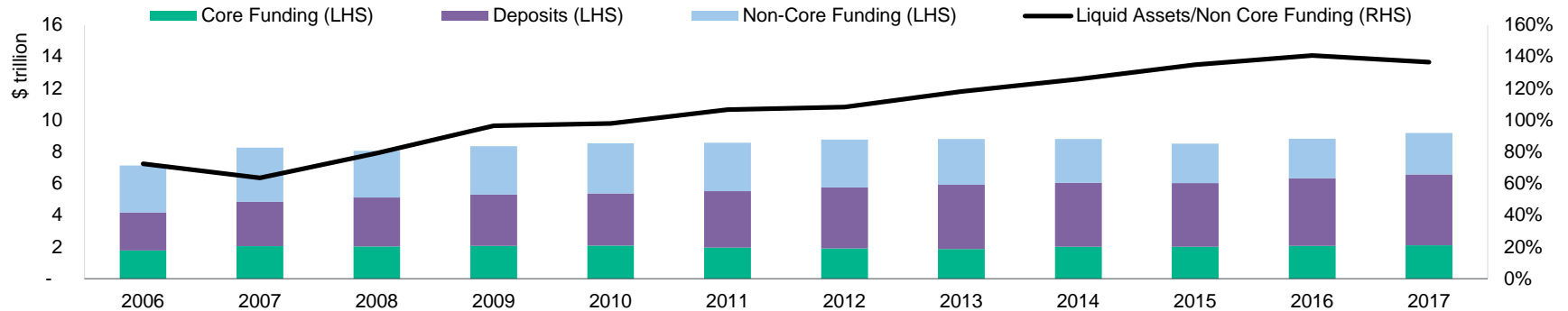
EU GIBs



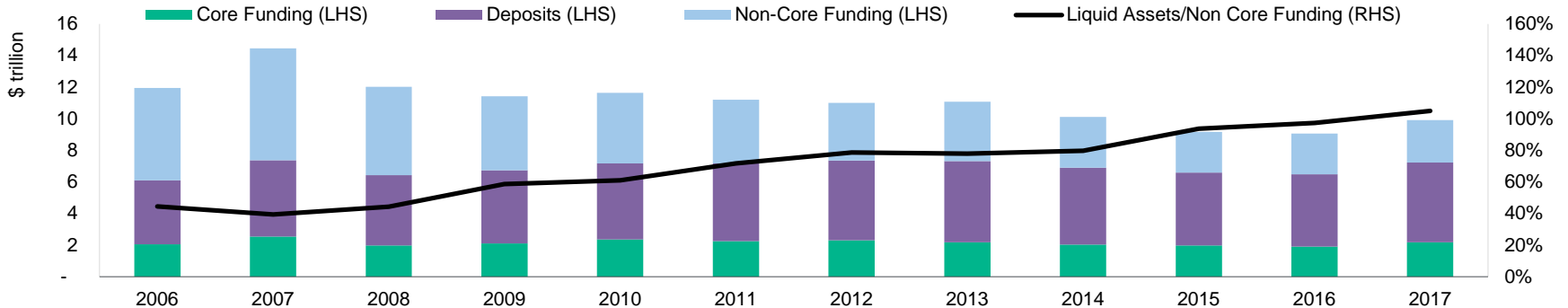
NorAM GIBs include: JPM, BAC, Citi, MS, GS and RBC
 EU GIBs include: BCS, BNP, CS, DB, HSBC, SG and UBS
 Source: Moody's Banking FM and company reports

However pace of change varies - Funding

NorAm GIBs



EU GIBs

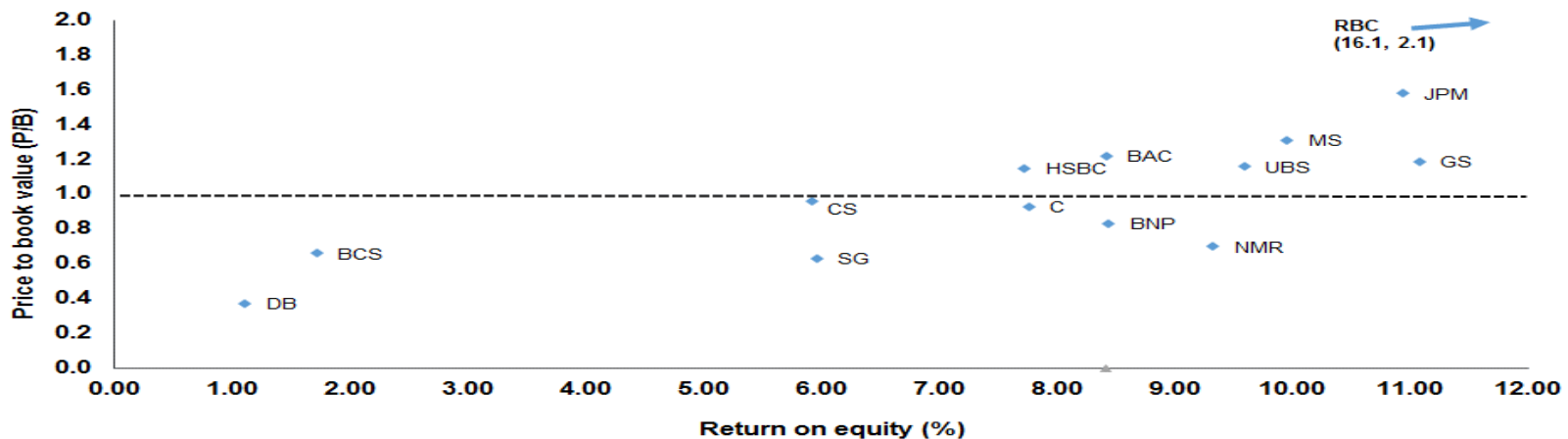


NorAM GIBs include: JPM, BAC, Citi, MS, GS and RBC
 EU GIBs include: BCS, BNP, CS, DB, HSBC, SG and UBS
 Source: Moody's Banking FM and company reports

Some GIBs struggle to earn cost of capital

- » Many, mostly EU GIBs, still trade below book value, adding pressure on management to boost returns
- » Increasing use of the balance sheet to boost returns not an option for the leverage constrained firms
- » Efforts to boost returns through cost reduction, disposal of non core assets and more recently NPLs

Price to book/FYE 2017 ROE excluding Q4 tax charges



Note: Price to book as of May 23, 2018. NMR ROE is YTD annualized as of 12/31/2017. RBC ROE is as of year-ended 10/31/2017 Source: Factset and Moody's Investors Service

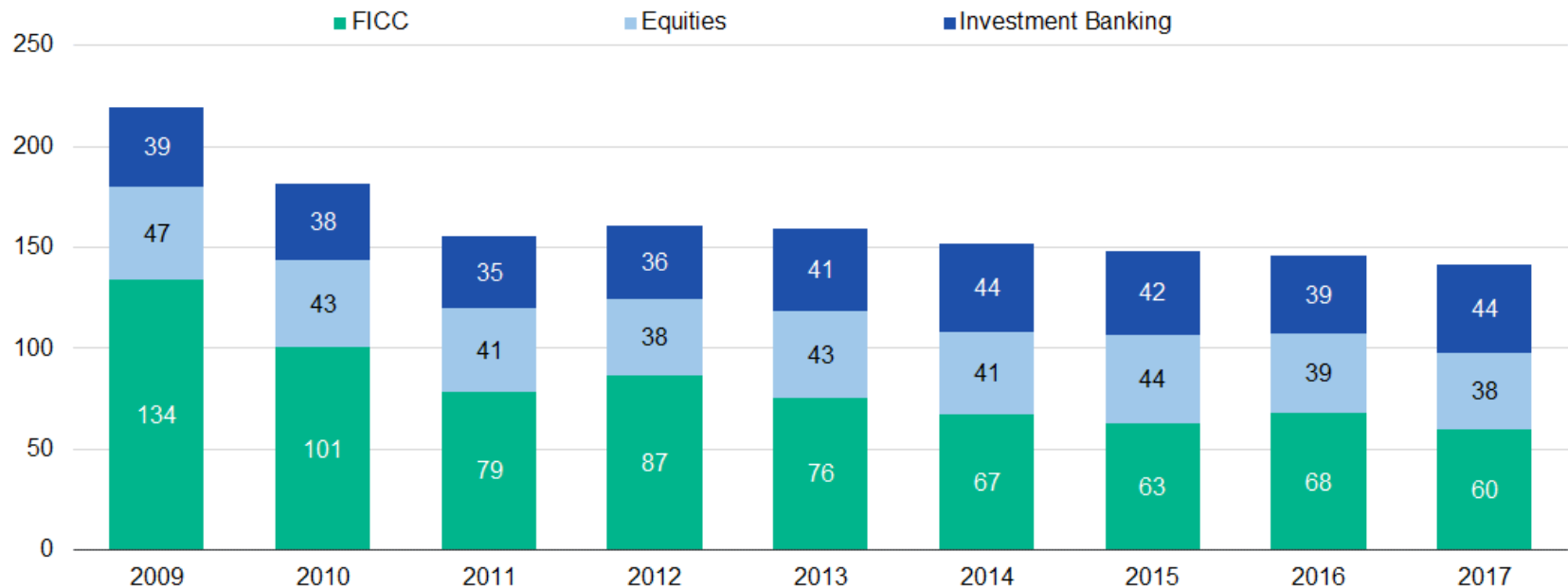


Implications for Competition

Capital market wallet in decline

- » The shrinking capital markets wallet is feeding competitive pressure
- » Scale, earnings diversity, and nimble cost management are essential

Capital markets and Investment Banking revenue 2009-17, (USD billions)

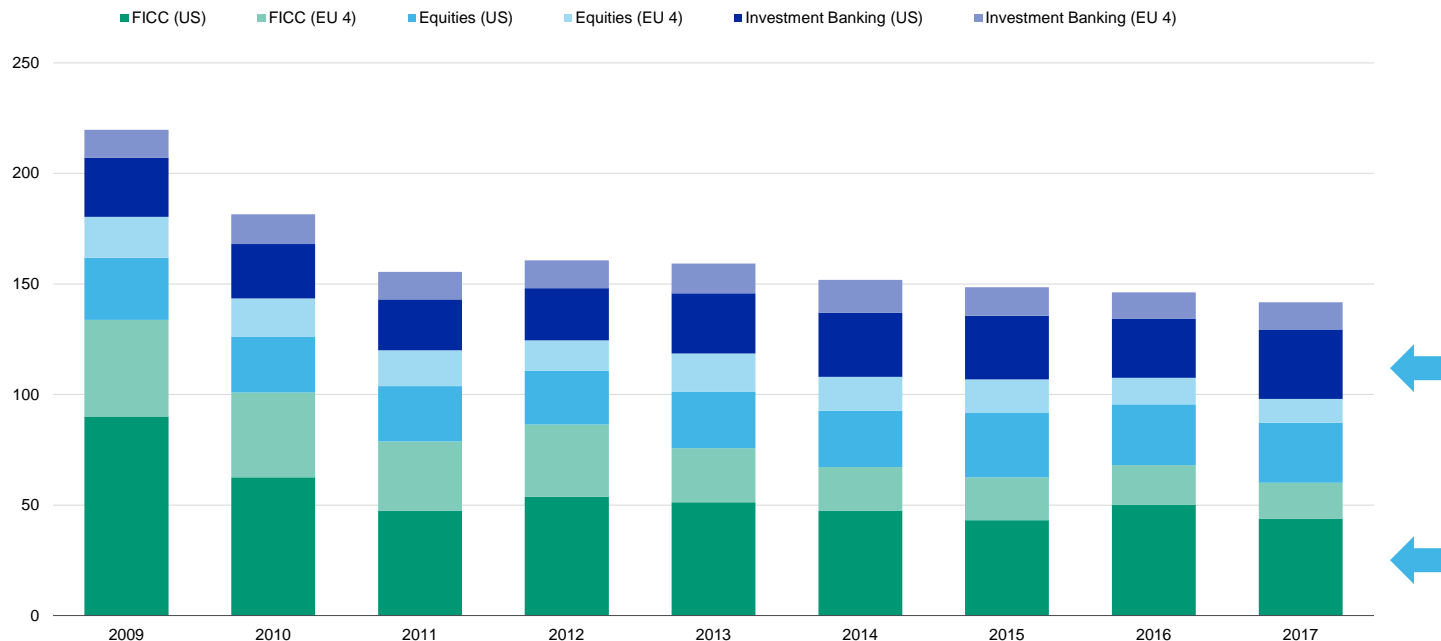


Note: Includes capital markets revenue of BAC, BCS, C, CS, DB, GS, JPM, MS and UBS. Data not available for others for the entire period Source: Company filings and Moody's Investors Service

Capital market wallet in decline

North America versus Europe

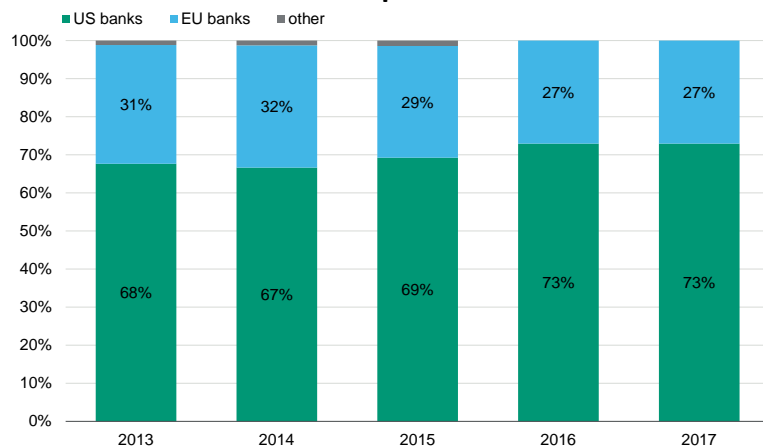
Capital markets and Investment Banking revenue 2009-17, (USD billions)



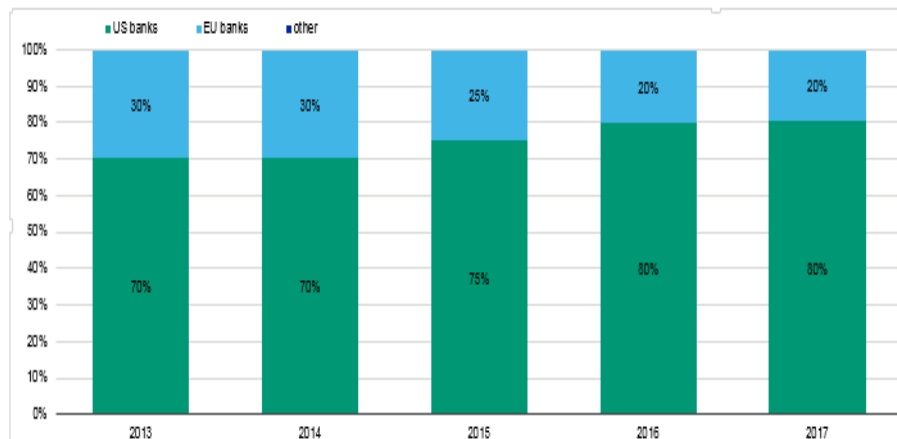
Note: Includes capital markets revenue of BAC, BCS, C, CS, DB, GS, JPM, MS and UBS. Data not available for others for the entire period Source: Company filings and Moody's Investors Service

IB Market Share: US versus EU

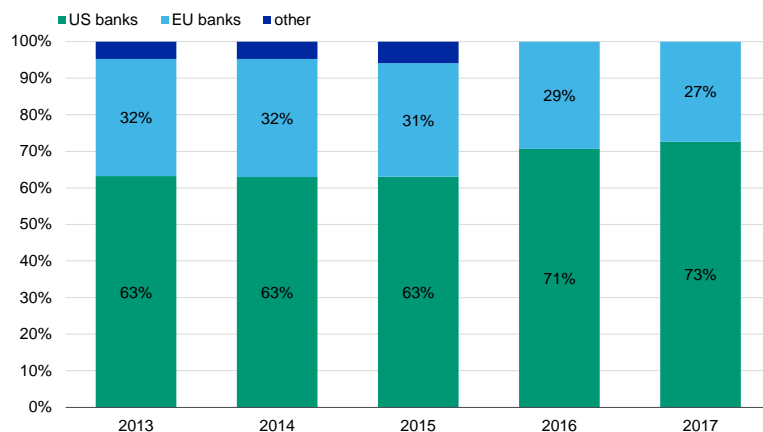
Global IB Top 10 Revenues



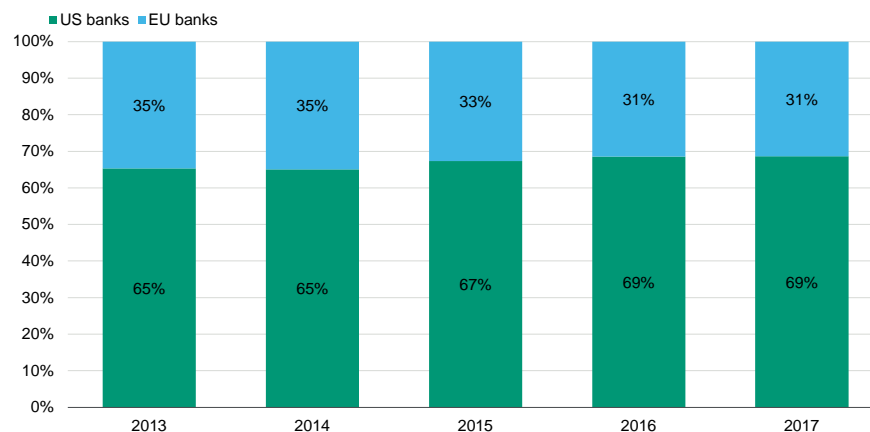
Global M&A Top 10 Revenues



Global ECM Top 10 Revenues



Global DCM Top 10 Revenues

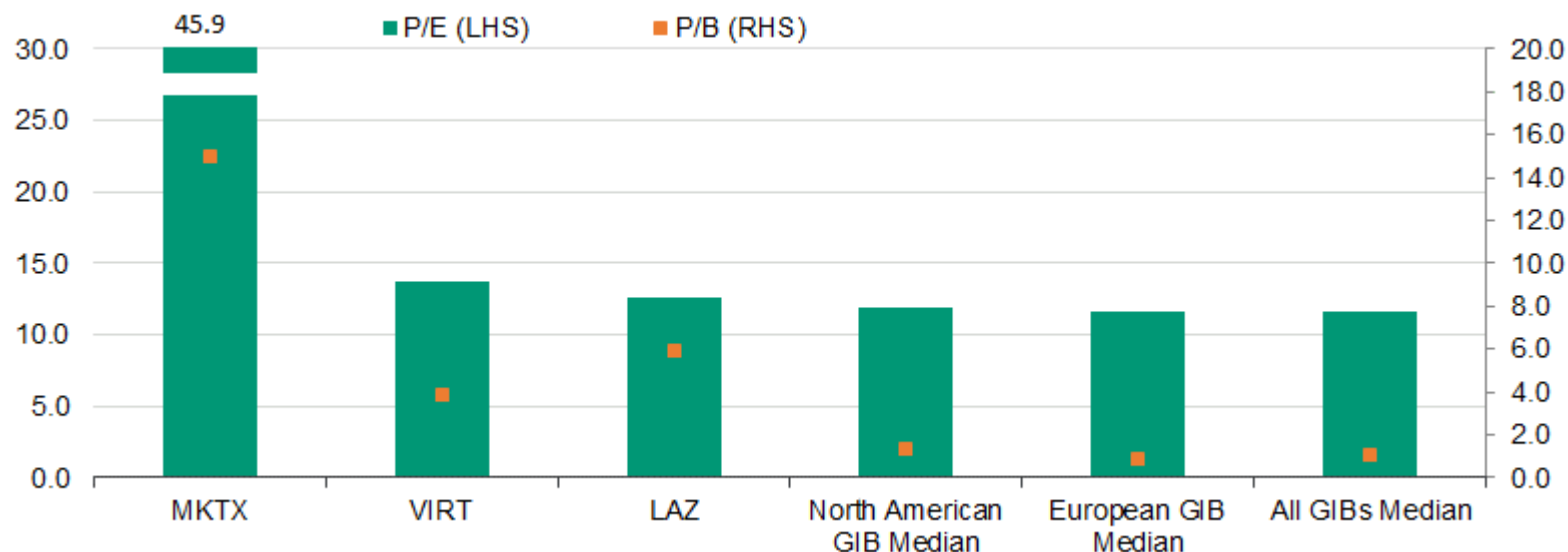


Source: Dealogic

Boutiques are disrupting market niches

- » GIBs face intense competition from lean, focused boutiques
- » Boutiques are more lightly regulated, slimmer, flexible cost bases, unburdened by illiquid inventory.
- » Boutiques have a team-oriented, less bureaucratic culture, built on stock-based compensation

Price to book/2017 ROE excluding Q4 tax charges

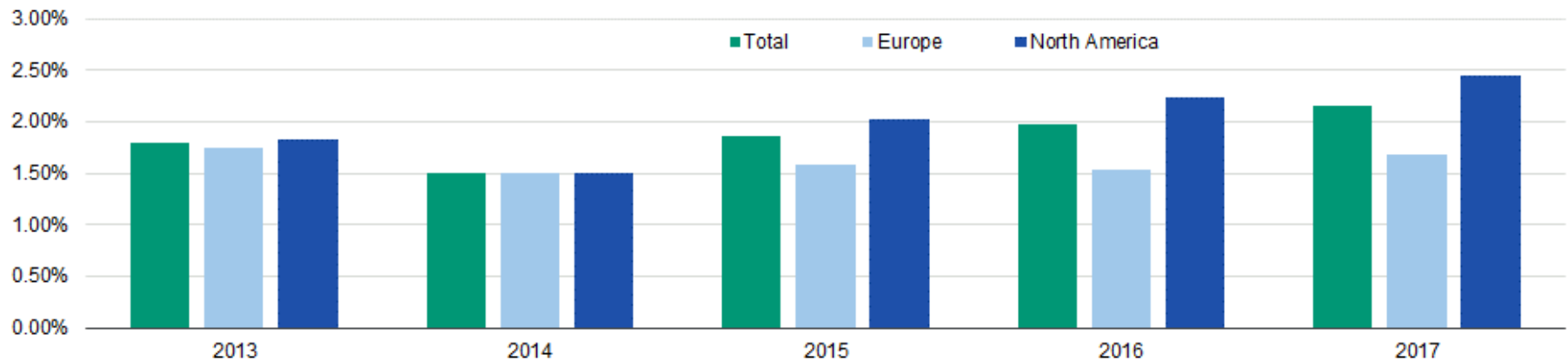


Source: Factset and Moody's Investors Service

North Americans extend profitability lead

- » European firms are adjusting to SLR, “Basel IV” and continued compliance and regulatory costs
- » US GIBs benefit from share gains in capital markets and interest rate normalization

Industry Pre-provision income to RWA 2013 to 2017

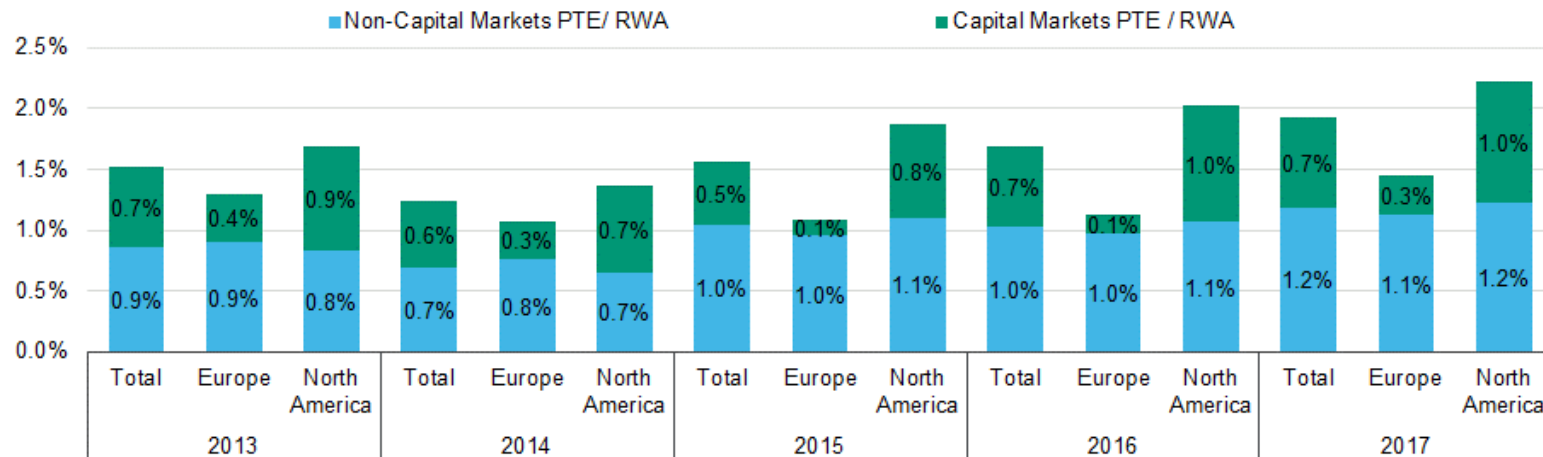


Source: Moody's Banking FM and company reports

North Americans benefit from stronger capital markets results

- » North American firms' advantage also derives from the stronger performance of their capital markets LOBs than European peers
- » European firms' non-capital markets segments have performed comparatively well despite a difficult interest rate environment.

Contribution of capital markets LOB and other LOB earnings to pre-tax return on RWA



Source: Moody's Banking FM and company reports

North Americans among strongest performers again in Q1 2018

- » Many firms benefitting from seasonally strong underlying customer flows and improved volatility.

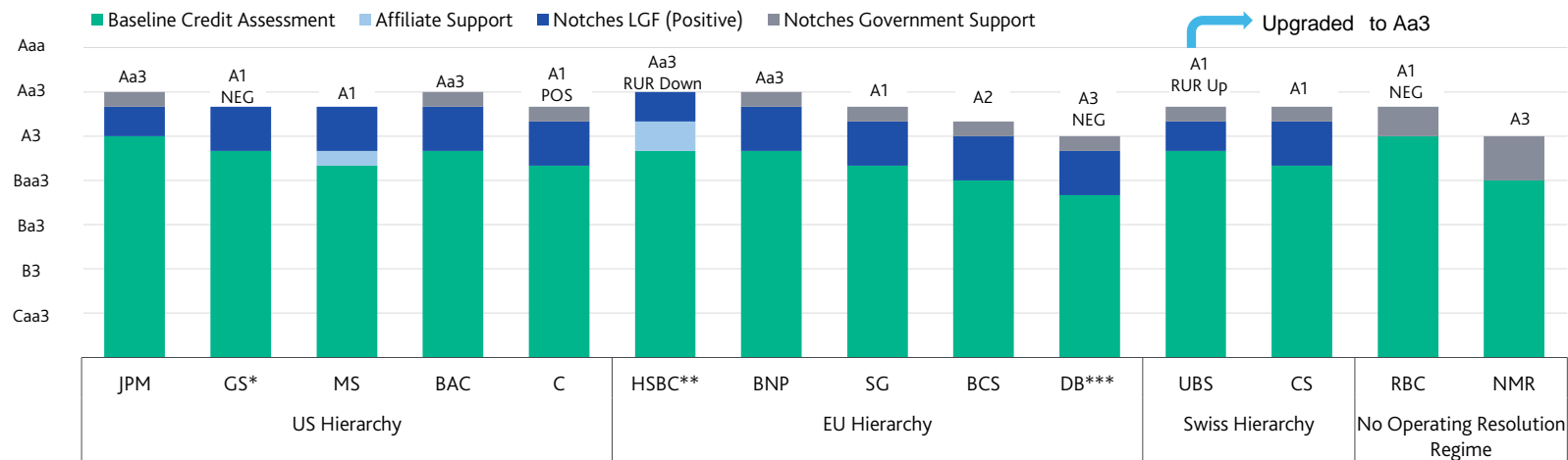
Reported pretax return on risk-weighted assets



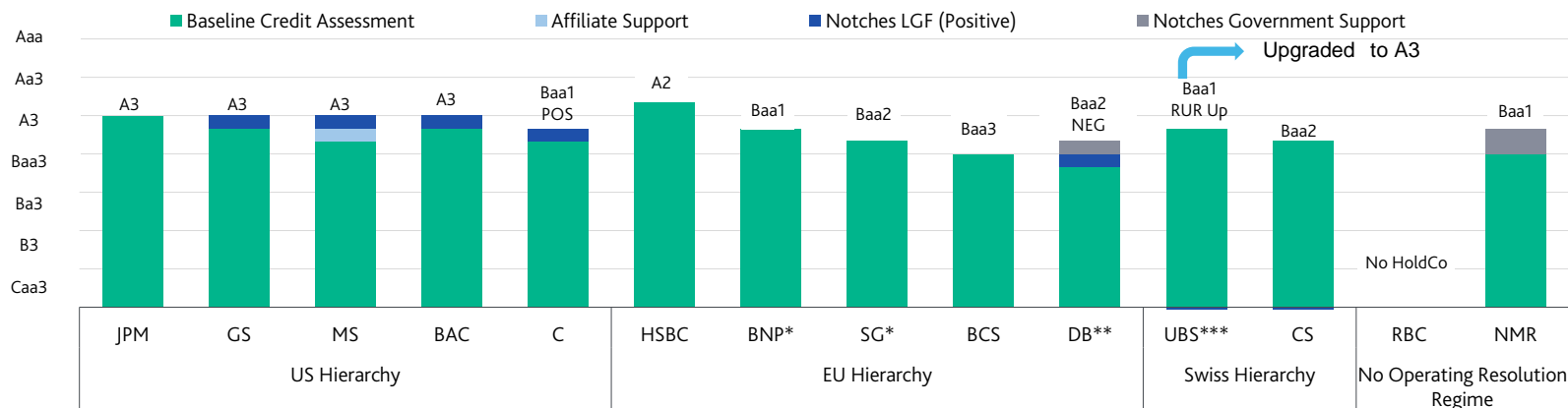
Source: Company reports and Moody's Investors Service

Global investment bank ratings

Senior unsecured debt ratings – operating company (bank)



Senior unsecured debt ratings – holding company or equivalent level



Upper chart: *Refers to issuer rating in absence of senior unsecured debt rating; **Refers to HSBC Bank plc, the main European operating entity of the broader HSBC group. ***Refers to senior senior unsecured debt rating Lower chart: *For BNP and SG this is the junior senior unsecured bank rating since they do not have HoldCos. ***For DB this is the Senior unsecured bank rating since it does not have a holdco ***For UBS we show the rating of long-term senior unsecured debt issued by UBS Group Funding (Switzerland) AG which is guaranteed by holding company, UBS Group AG. UBS AG's senior unsecured debt ratings were upgraded on 18 June to Aa3 and its holding company senior unsecured ratings were upgraded to A3. RBC has neither a HoldCo nor a bank junior senior unsecured rating Source: Moody's Investors Service as of July 9, 2018.

Key Messages

- » Economic growth supports capital markets revenues and asset risk is now more contained
- » Regulation has had a material impact on GIB business models and changed competitive dynamics
- » Margins are under pressure due to increased cost of business and competition
- » European firms are still adjusting to the new operating dynamics
- » Agile deployment of people, capital and technology will drive competition and risk
- » Those with greater diversification and scale and financial flexibility will be best positioned to mitigate margin pressure

MOODY'S
INVESTORS SERVICE

Access is everything™

Laurie Mayers
Associate Managing Director
Laurie.Mayers@moodys.com
+44 (207) 772-5582

moodys.com

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.

© 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 for 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.moodys.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 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. 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.