MOODY'S
INVESTORS SERVICE

Access is everything™

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

Laurie Mayers, Associate Managing Director, EMEA Banking

July 2018

Agenda

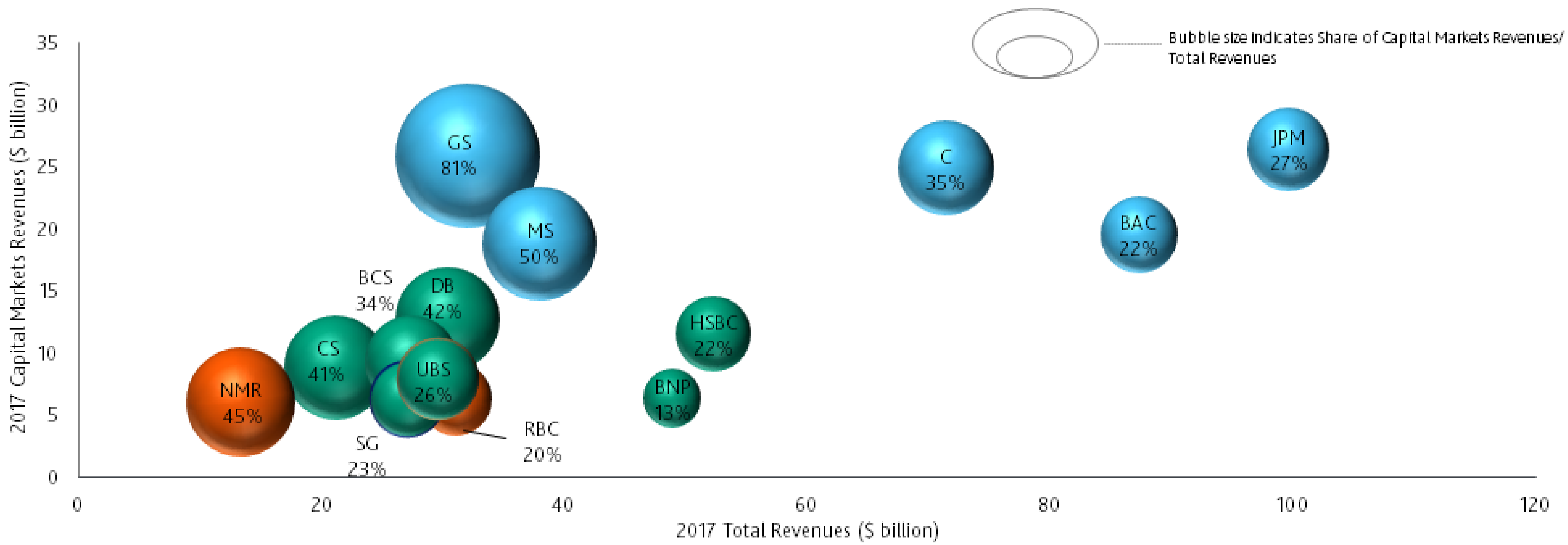
1. Outlook for Global Investment Banks (GIBs)
2. Impact of Post Crisis Regulation on GIB Business Models
3. Implications for Competition

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

NEGATIVE

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

STABLE

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

POSITIVE

- 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

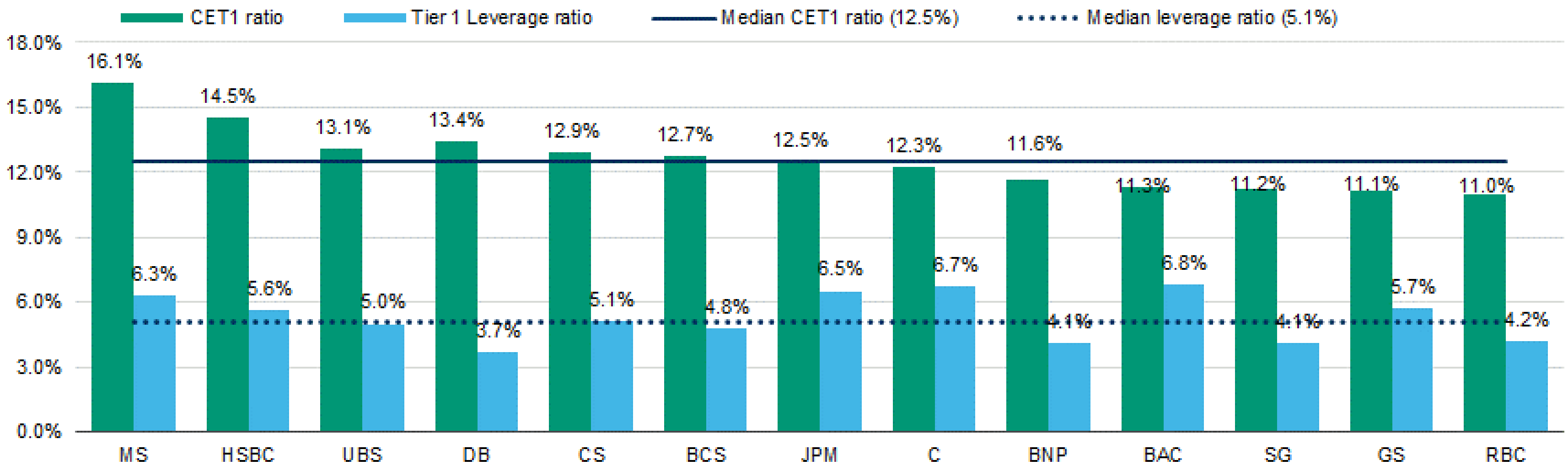
Key Messages

- 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

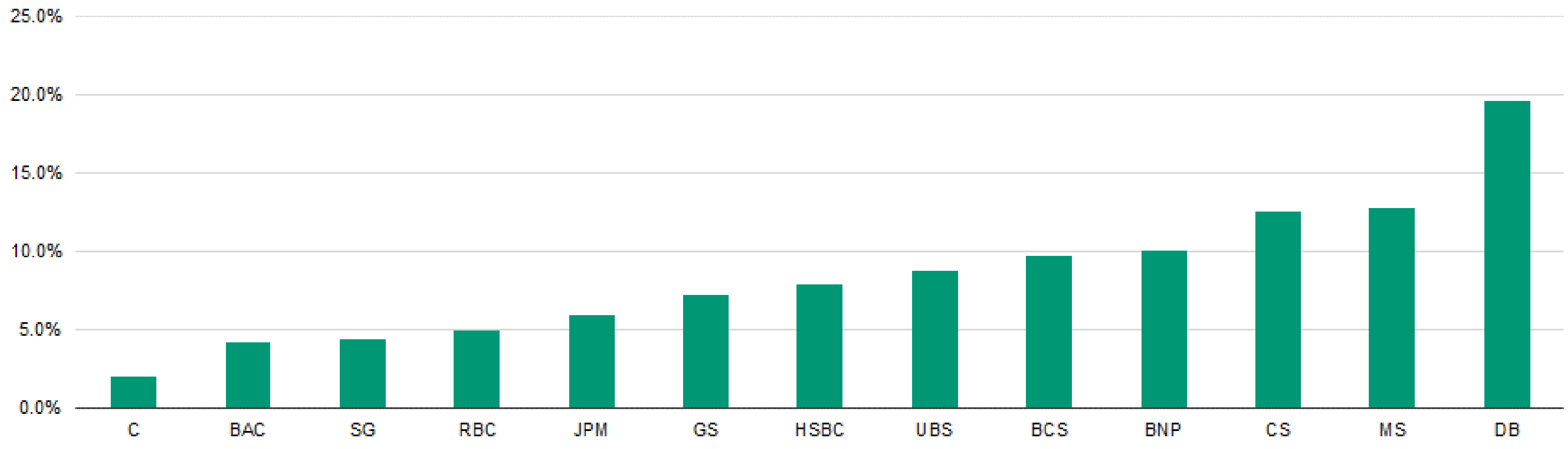


Source: Moody's Banking FM and company reports

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

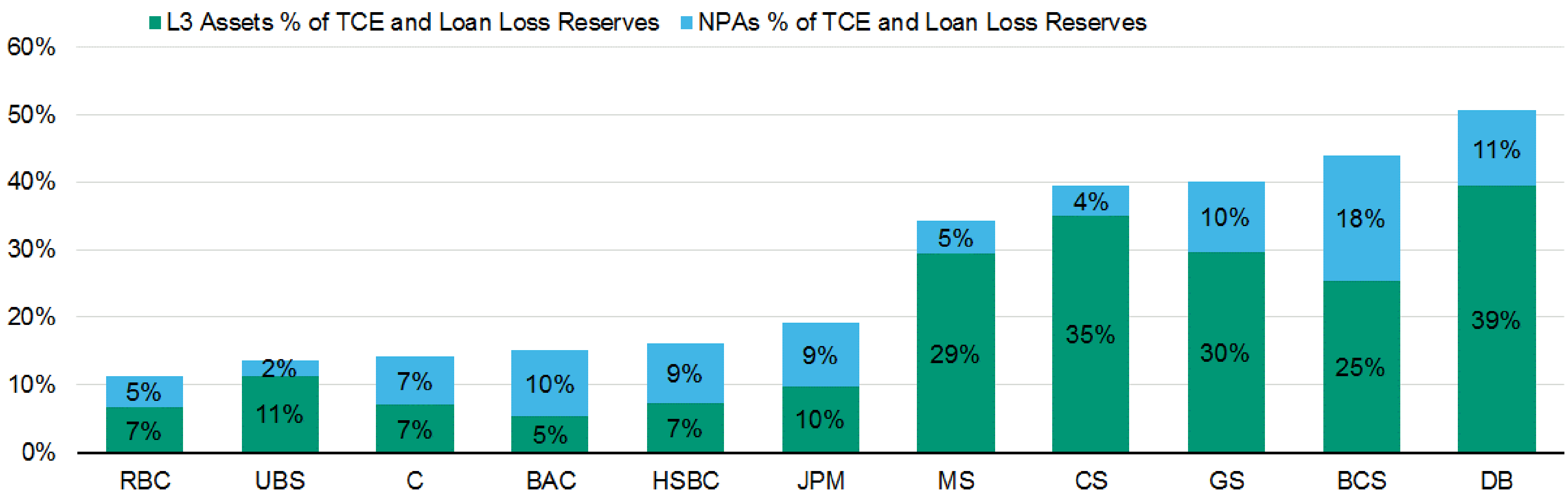


Note: CS capital market pretax earnings excludes legacy restructuring segment. Stressed VaR as reported in Pillar 3 and/or company financials, based on 99% 10-day intervals with the exception of RBC, which was adjusted. Source: Company reports and Moody's Investors Service

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

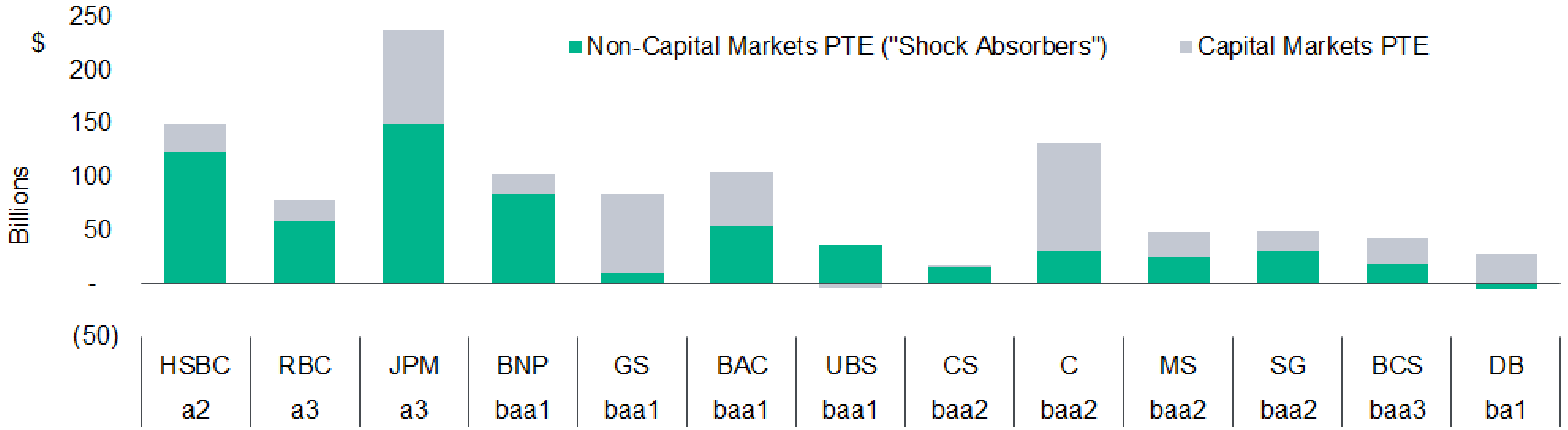


Note: BNP and SG excluded because their reported NPAs are not directly comparable to the rest of the group. Source: Moody's Banking FM and company reports

“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)

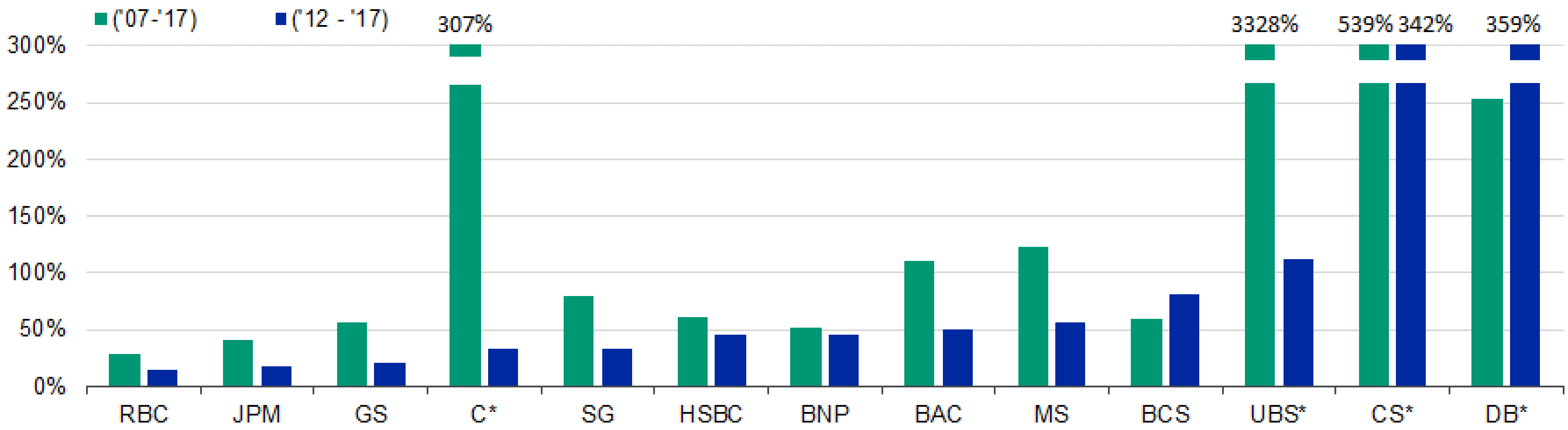


Note: In general we use reported line of business pretax earnings, less DVA where disclosed. Legacy and Corporate segments typically allocated to “shock absorbers” (i.e., non-capital markets earnings). Exceptions include: JPM, we estimate earnings from institutional operating services and allocate that 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)

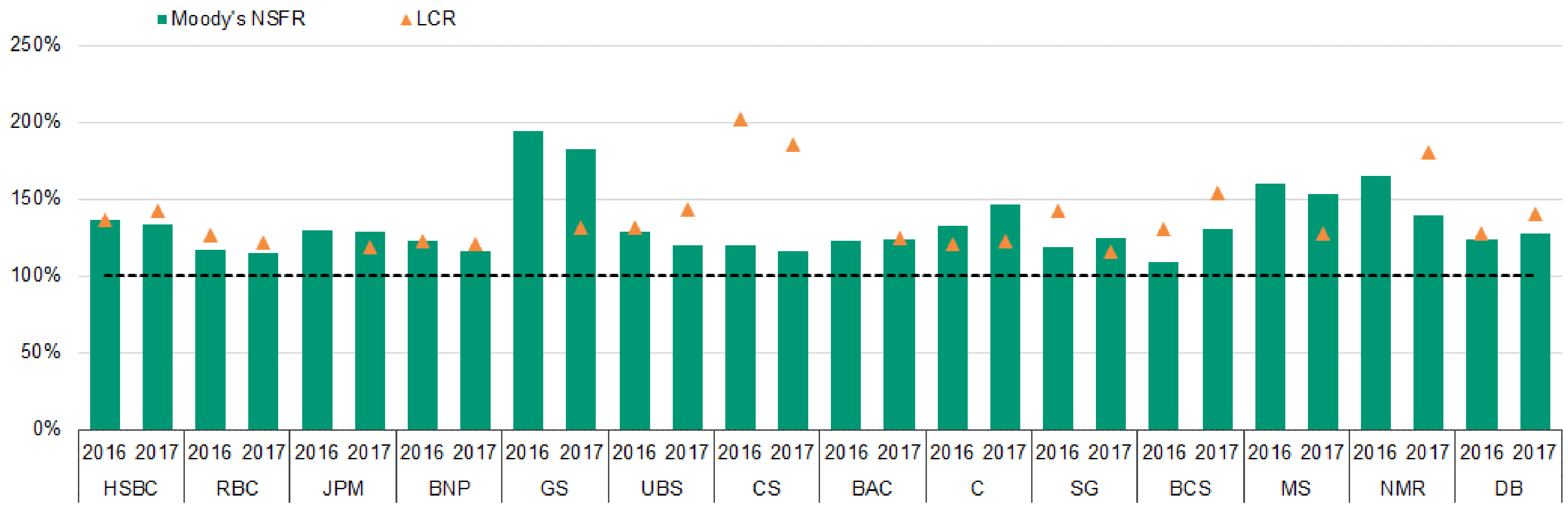


*Certain banks above have volatility above 300% for at least one of the periods displayed. Source: Company reports and Moody’s Investors Service

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

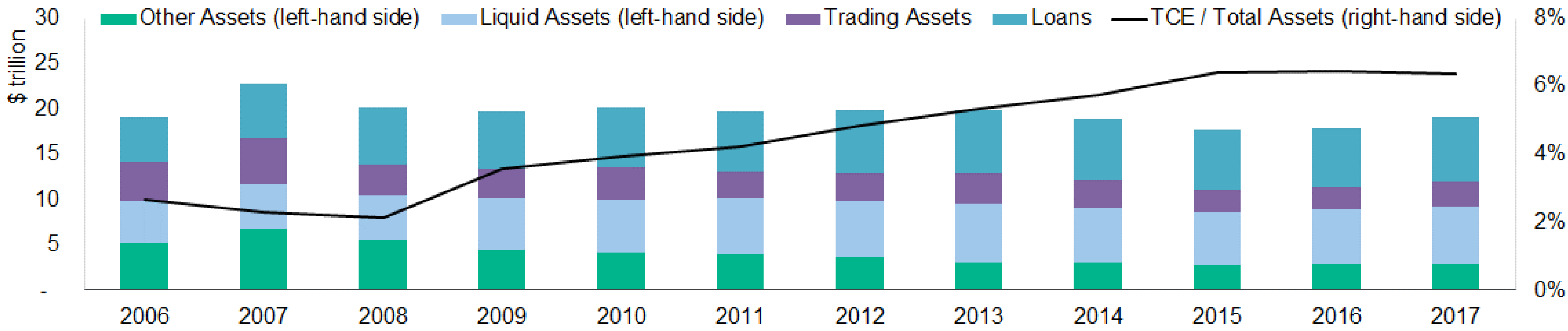


Note: Moody's NSFR compares sources of long-term funding including equity capital, long-term debt and more stable deposits to uses of long-term funding such as illiquid assets, loans and securities haircuts Source: Moody's Banking FM and company reports

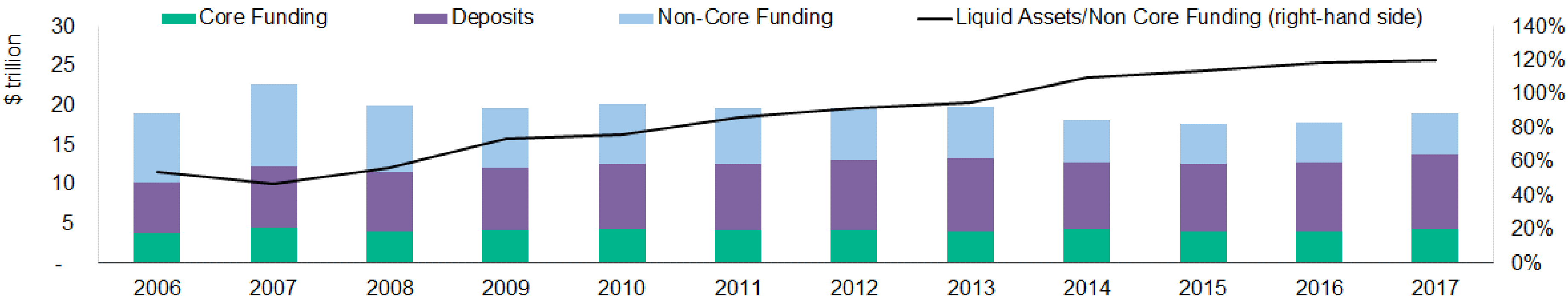
Balance sheet improvements plateau

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

Aggregate Industry assets



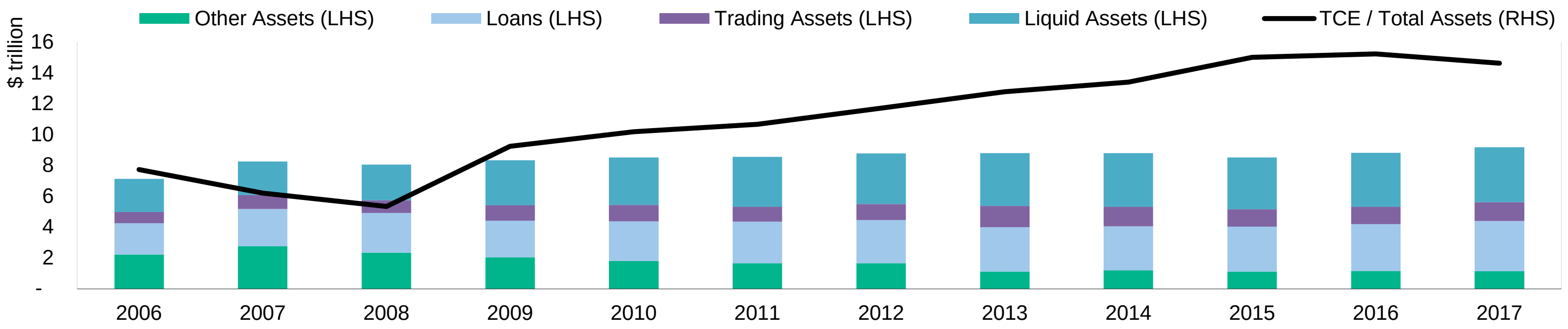
Aggregate Industry liabilities and shareholder's equity



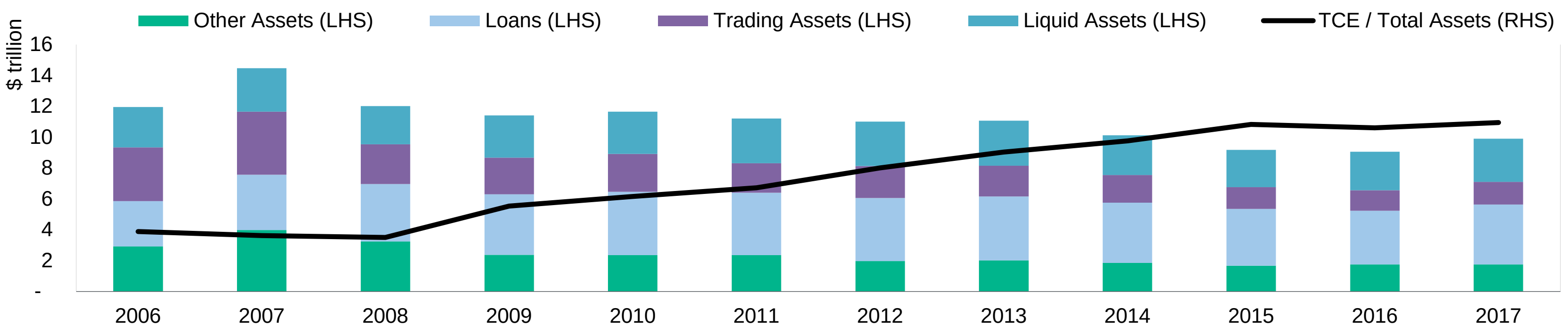
Note: Core funding includes equity and long-term debt. Source: Moody's Banking FM and company reports

However pace of change varies - Assets

NorAm GIBs



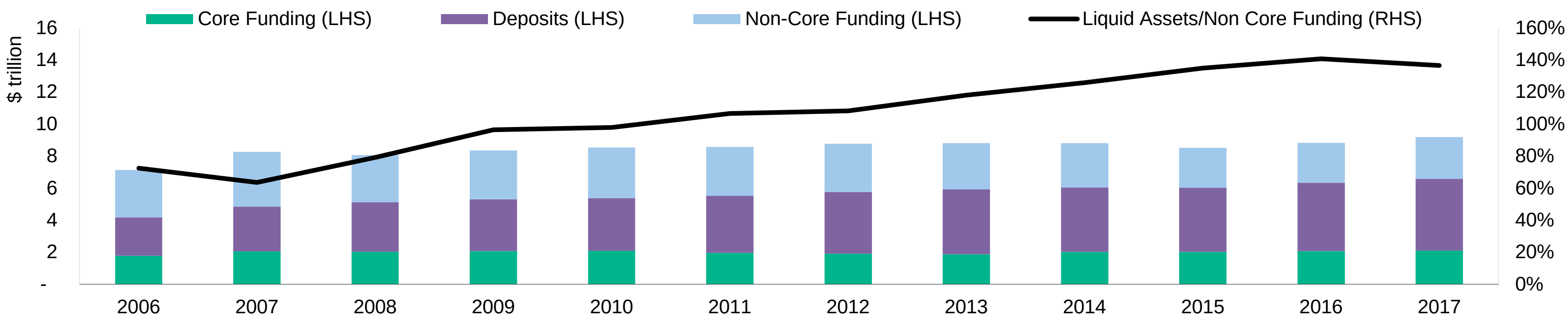
EU GIBs



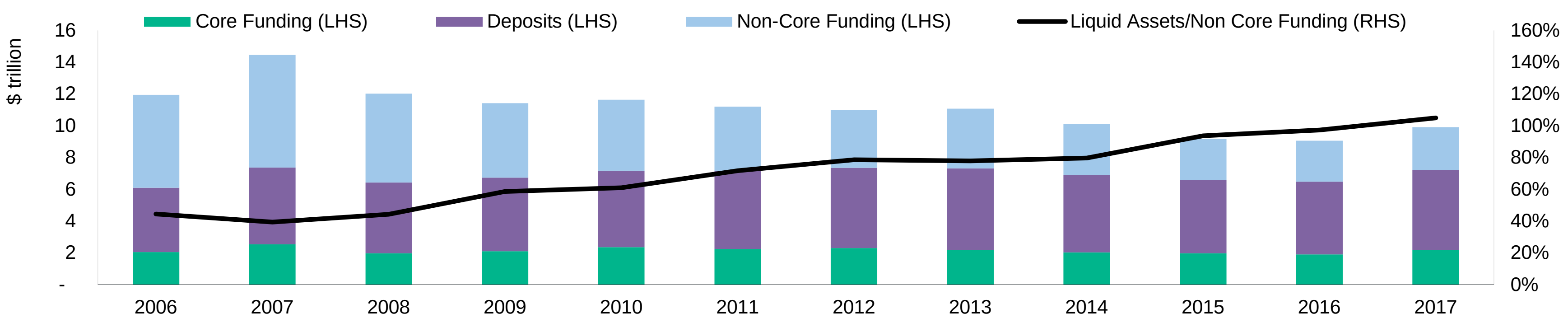
NorAM GIBs include: JPM, BAC, Citi, MS, GS and RBC
EU GIBs include: BCS, BNP, CS, DB, HSBC, SG and UBS
Source: Moody's Banking FM and company reports

However pace of change varies - Funding

NorAm GIBs



EU GIBs

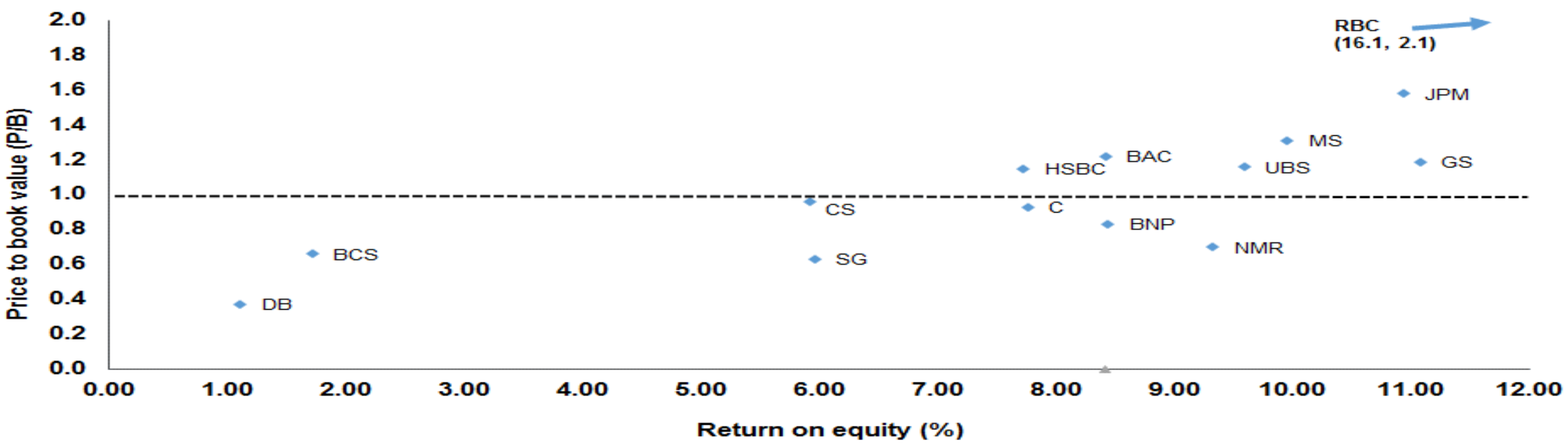


NorAM GIBs include: JPM, BAC, Citi, MS, GS and RBC
EU GIBs include: BCS, BNP, CS, DB, HSBC, SG and UBS
Source: Moody's Banking FM and company reports

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



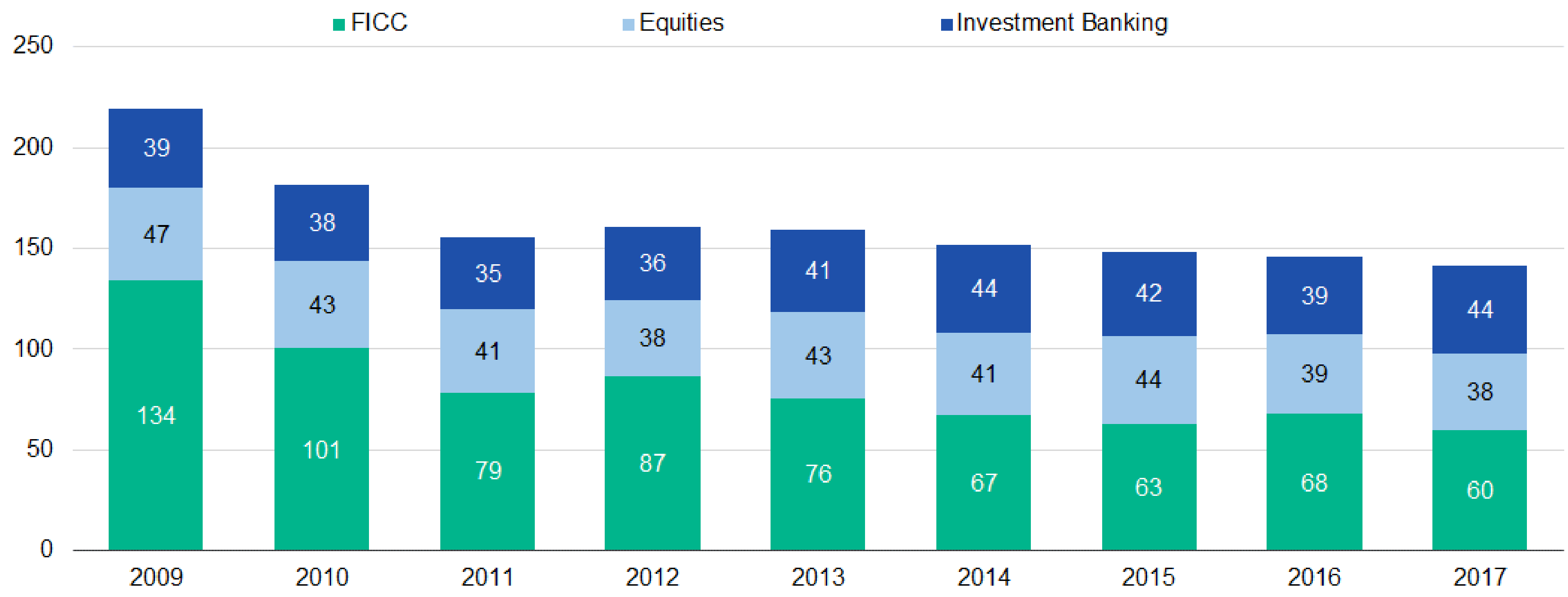
Note: Price to book as of May 23, 2018. NMR ROE is YTD annualized as of 12/31/2017. RBC ROE is as of year-ended 10/31/2017 Source: Factset and Moody's Investors Service

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)

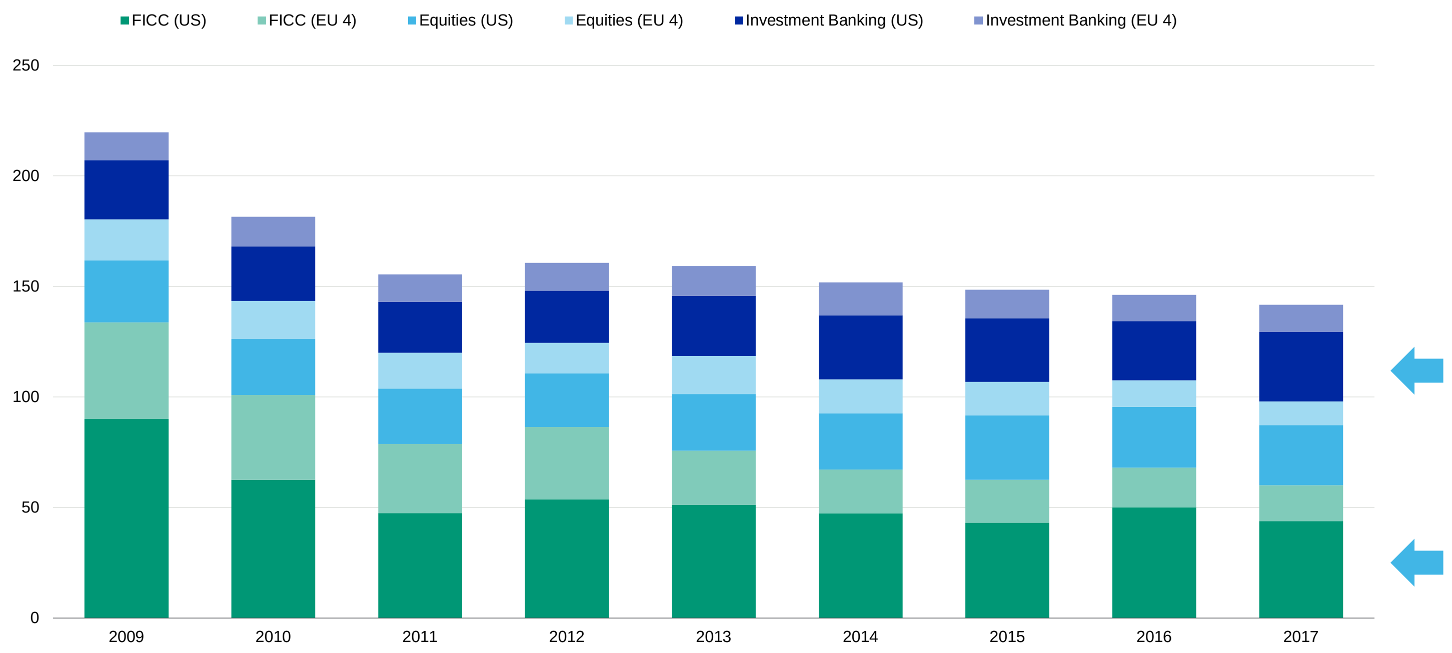


Note: Includes capital markets revenue of BAC, BCS, C, CS, DB, GS, JPM, MS and UBS. Data not available for others for the entire period Source: Company filings and Moody's Investors Service

Capital market wallet in decline

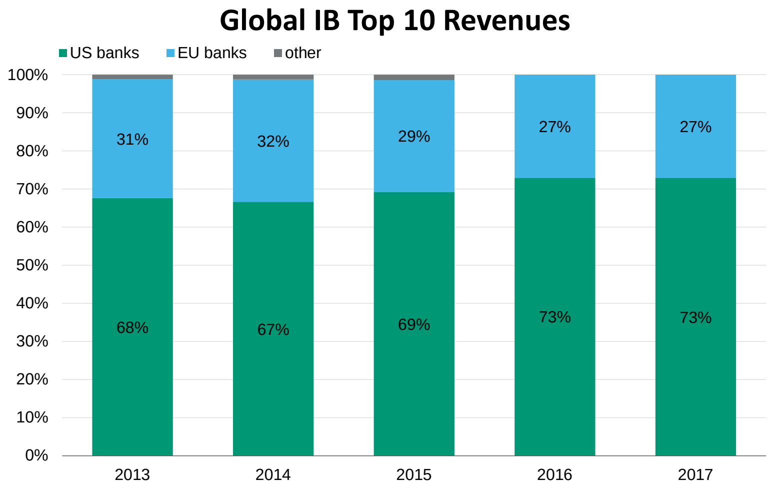
North America versus Europe

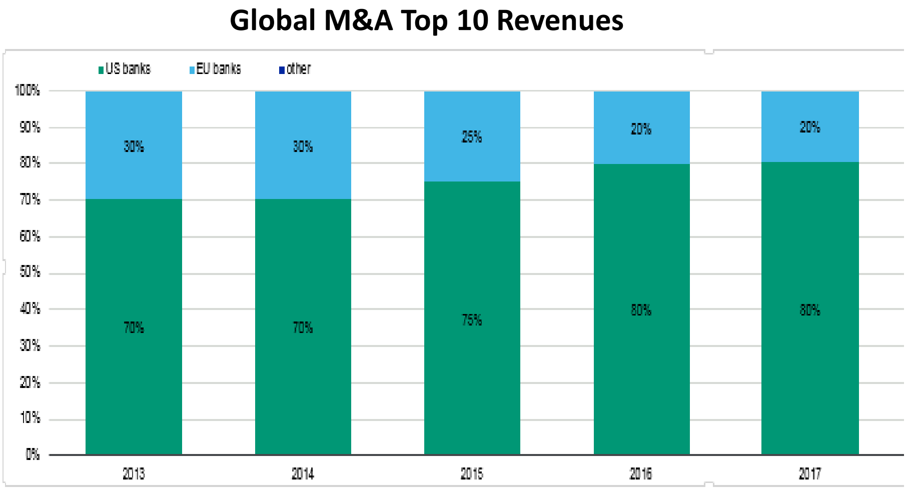
Capital markets and Investment Banking revenue 2009-17, (USD billions)

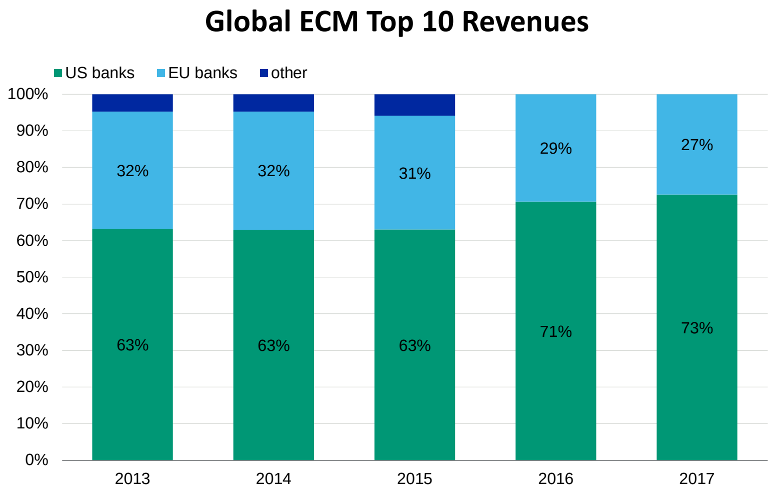


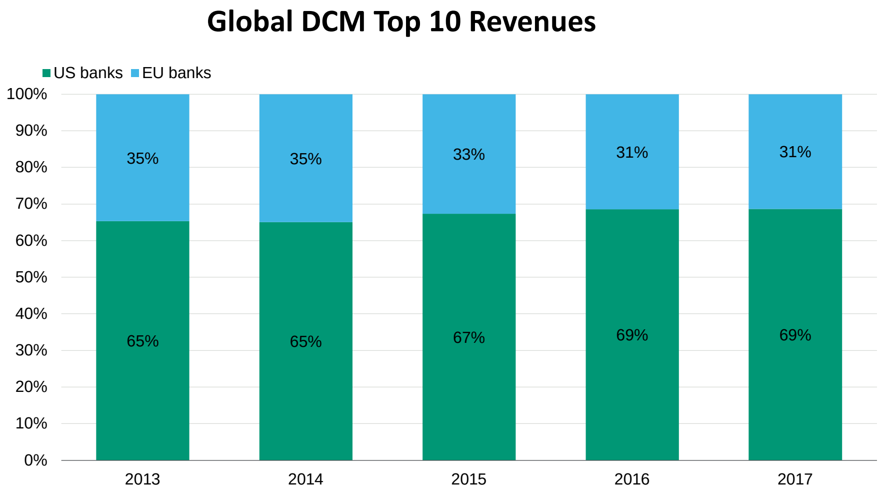
Note: Includes capital markets revenue of BAC, BCS, C, CS, DB, GS, JPM, MS and UBS. Data not available for others for the entire period Source: Company filings and Moody's Investors Service

IB Market Share: US versus EU







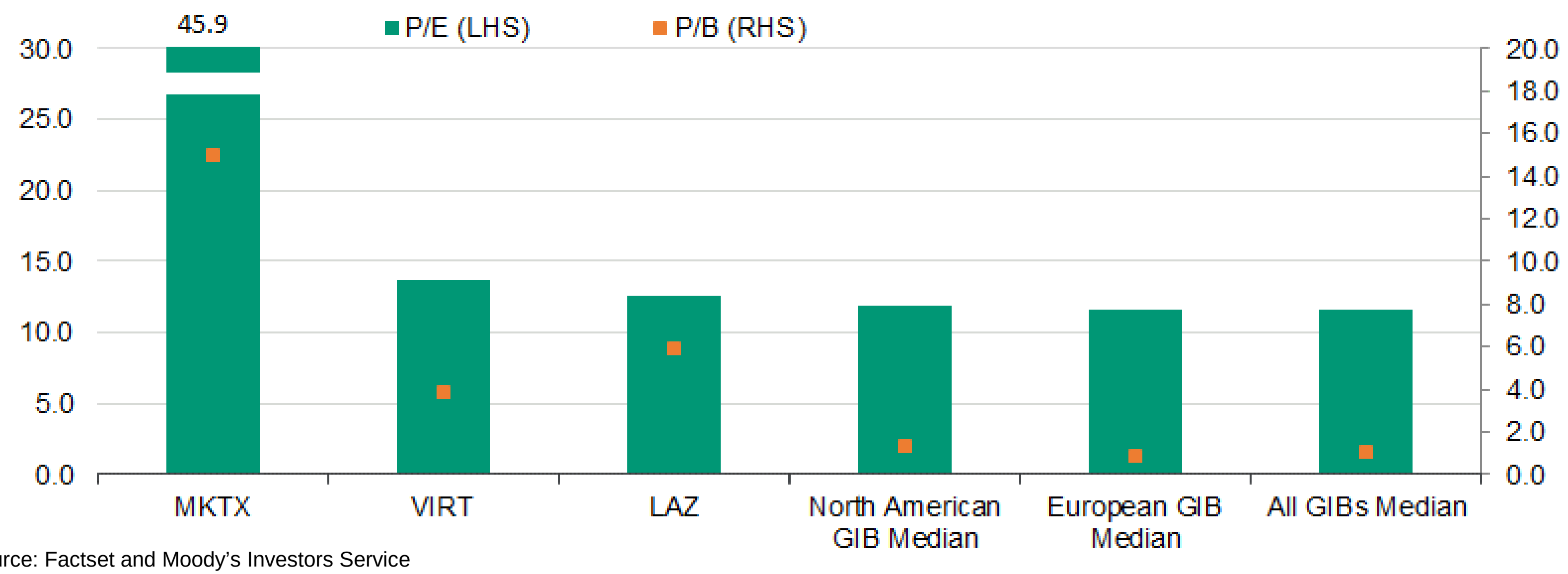


Source: Dealogic

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

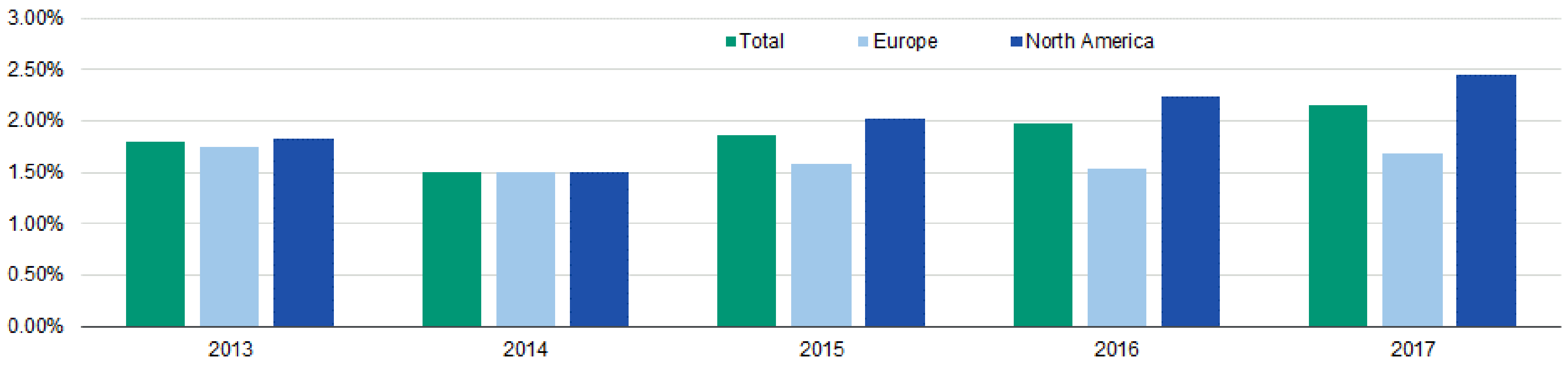


Source: Factset and Moody's Investors Service

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

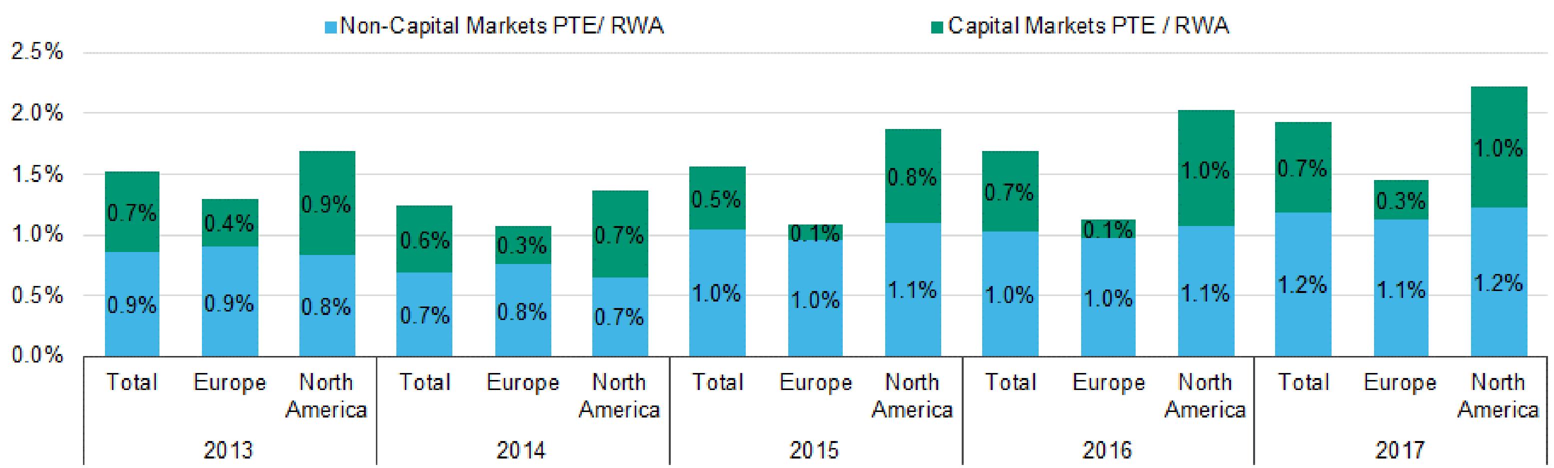


Source: Moody's Banking FM and company reports

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

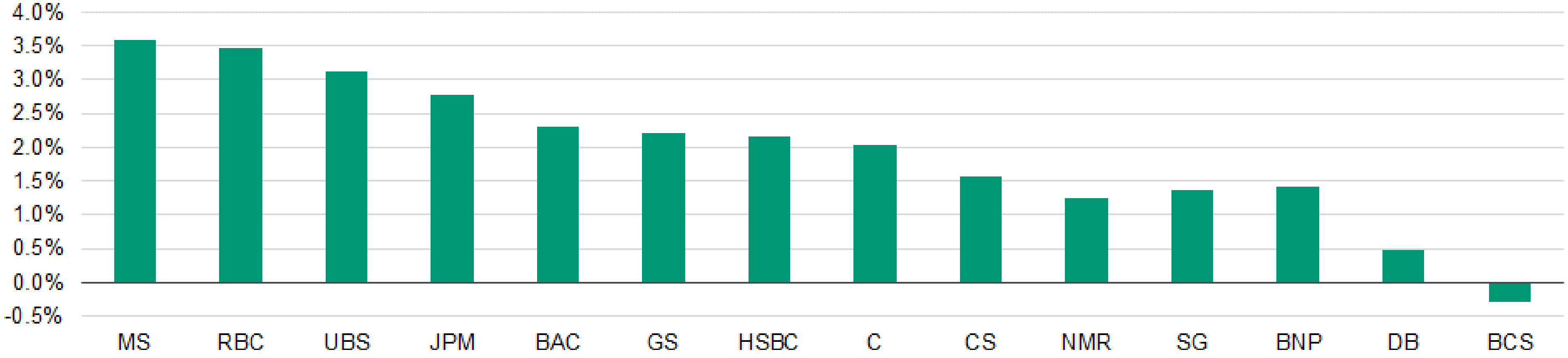


Source: Moody's Banking FM and company reports

North Americans among strongest performers again in Q1 2018

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

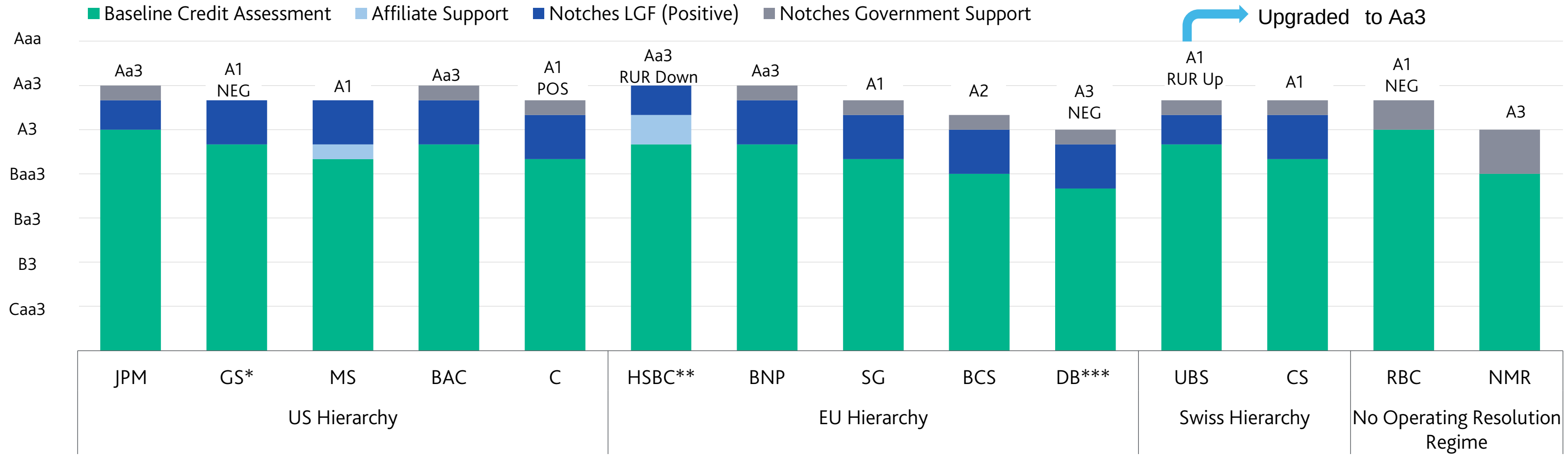
Reported pretax return on risk-weighted assets



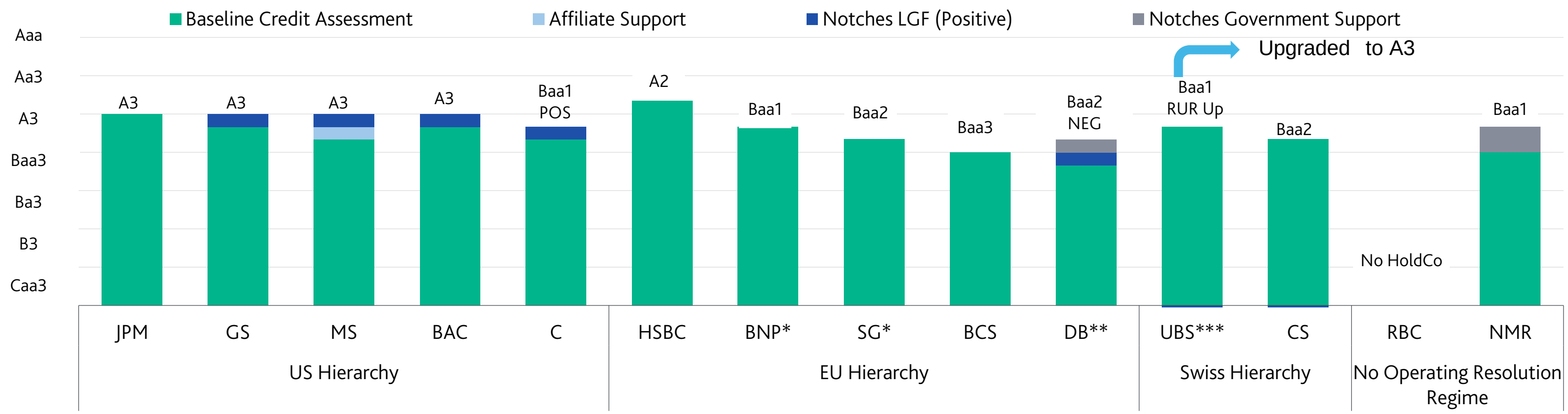
Source: Company reports and Moody's Investors Service

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