

FIRM OVERVIEW

February 25, 2020

► FIRM OVERVIEW

CORPORATE & INVESTMENT BANK

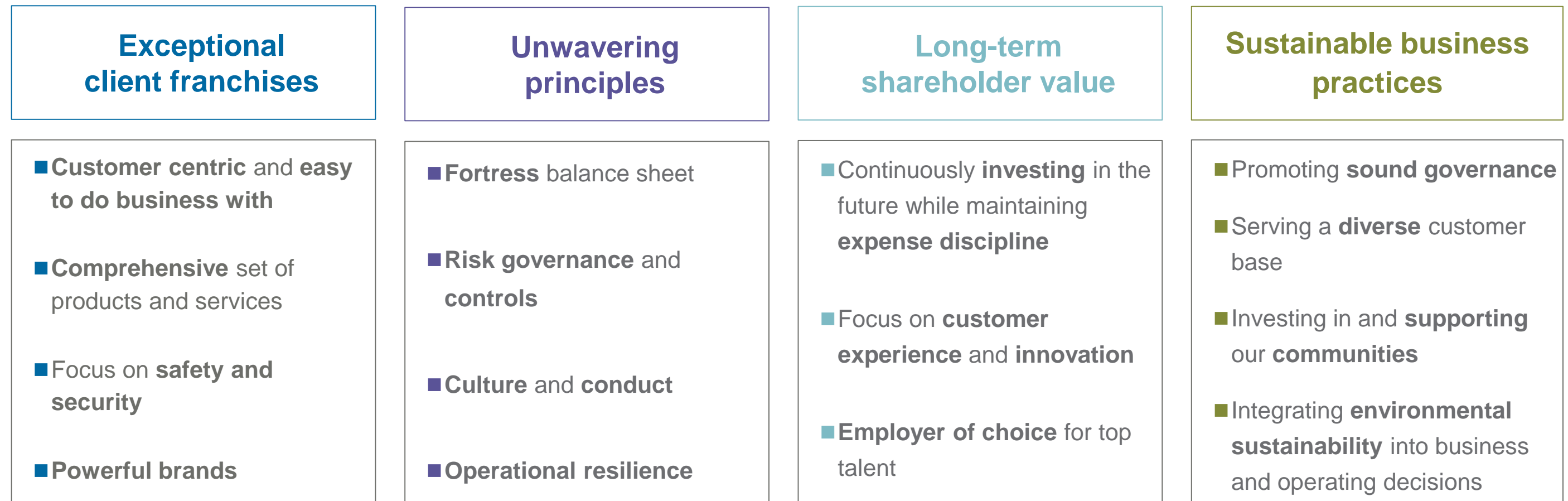
CONSUMER & COMMUNITY BANKING

ASSET & WEALTH MANAGEMENT

COMMERCIAL BANKING

JPMORGAN CHASE & Co.

We have built a Complete, Global, Diversified franchise that is At Scale – positioned to outperform in any environment



Proven operating model – positioned to outperform in any environment

Our comprehensive approach to sustainable development integrates business, community and environmental objectives and leverages our global capabilities




Existing commitments (announced in 2017¹)

- Multi-year, cumulative commitment to **facilitate \$200B in green financing**
- Source **renewable energy** for **100% of global power** needs

Expect to **achieve both** by end of 2020

New commitment – increasing our impact on sustainable development

Three areas of focus:

-  **Green:** supporting climate action, clean water and waste management
-  **Social:** increasing access to housing, education and healthcare
-  **Economic development:** advancing infrastructure, innovation and growth

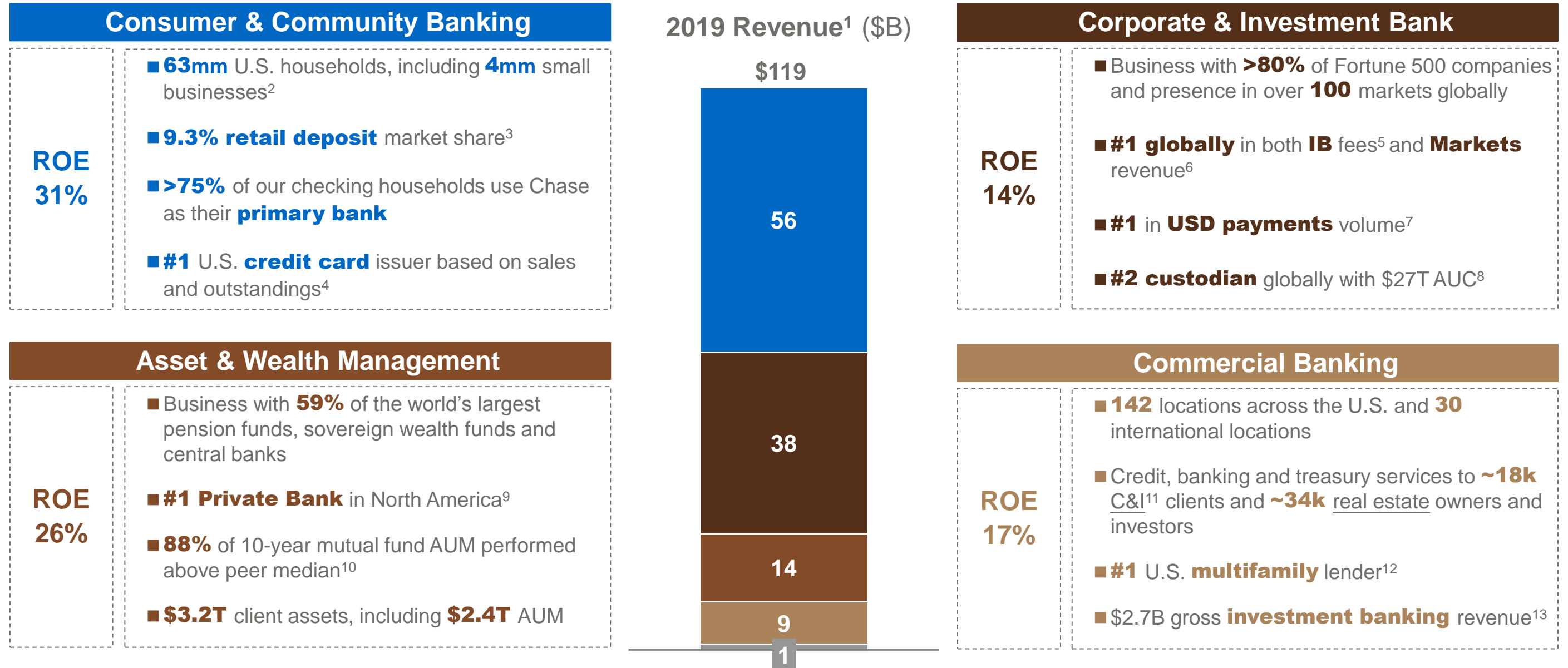
Predominantly in **developing markets**

Facilitate **\$200B in financing** across these areas in 2020
(up from ~\$175B in 2019)

Sustainable business practices

- Promoting **sound governance**
- Serving a **diverse** customer base
- Investing in and **supporting** our **communities**
- Integrating **environmental sustainability** into business and operating decisions

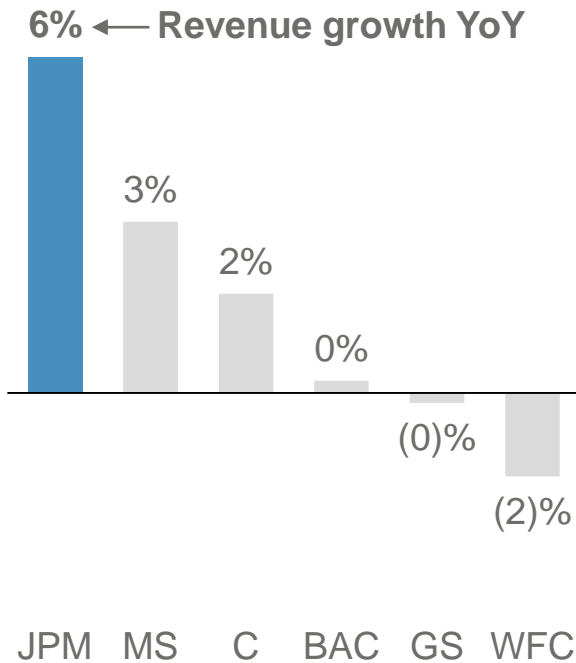
Our client franchises are exceptional – with leadership positions across each business



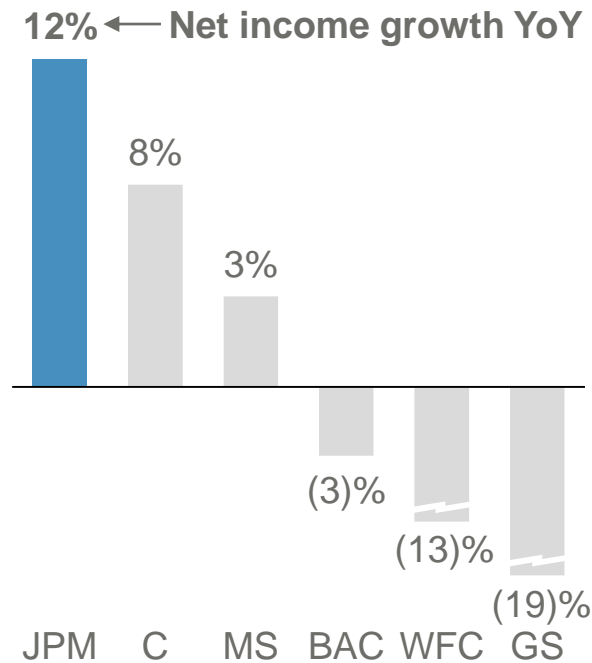
Note: Totals may not sum due to rounding. For footnoted information, refer to slides 28-29

2019 was another year of record revenue and net income

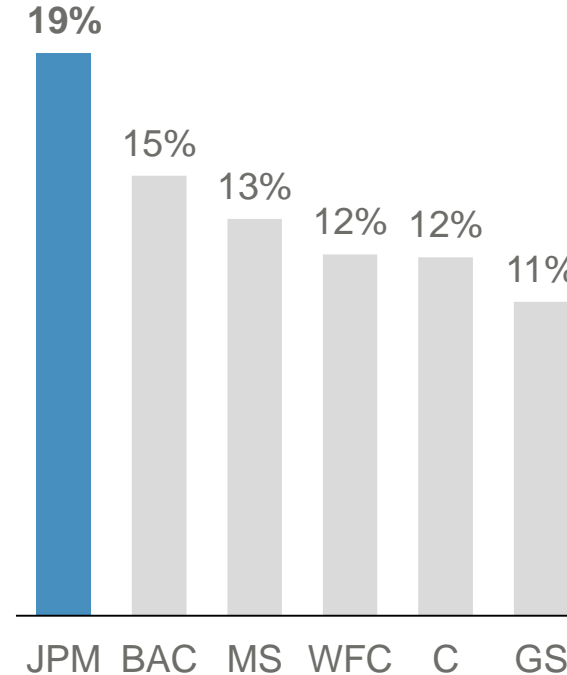
\$118.7B ▲
revenue^{1,2}



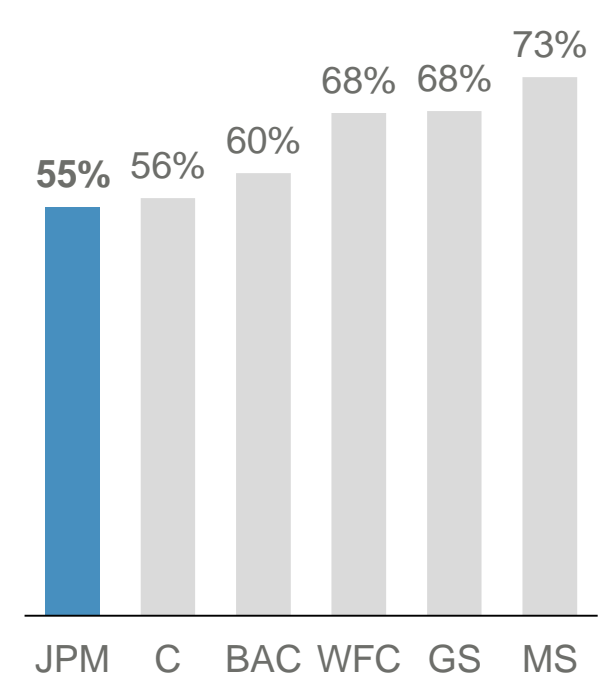
\$36.4B ▲
net income



19% ▲
ROTCE³



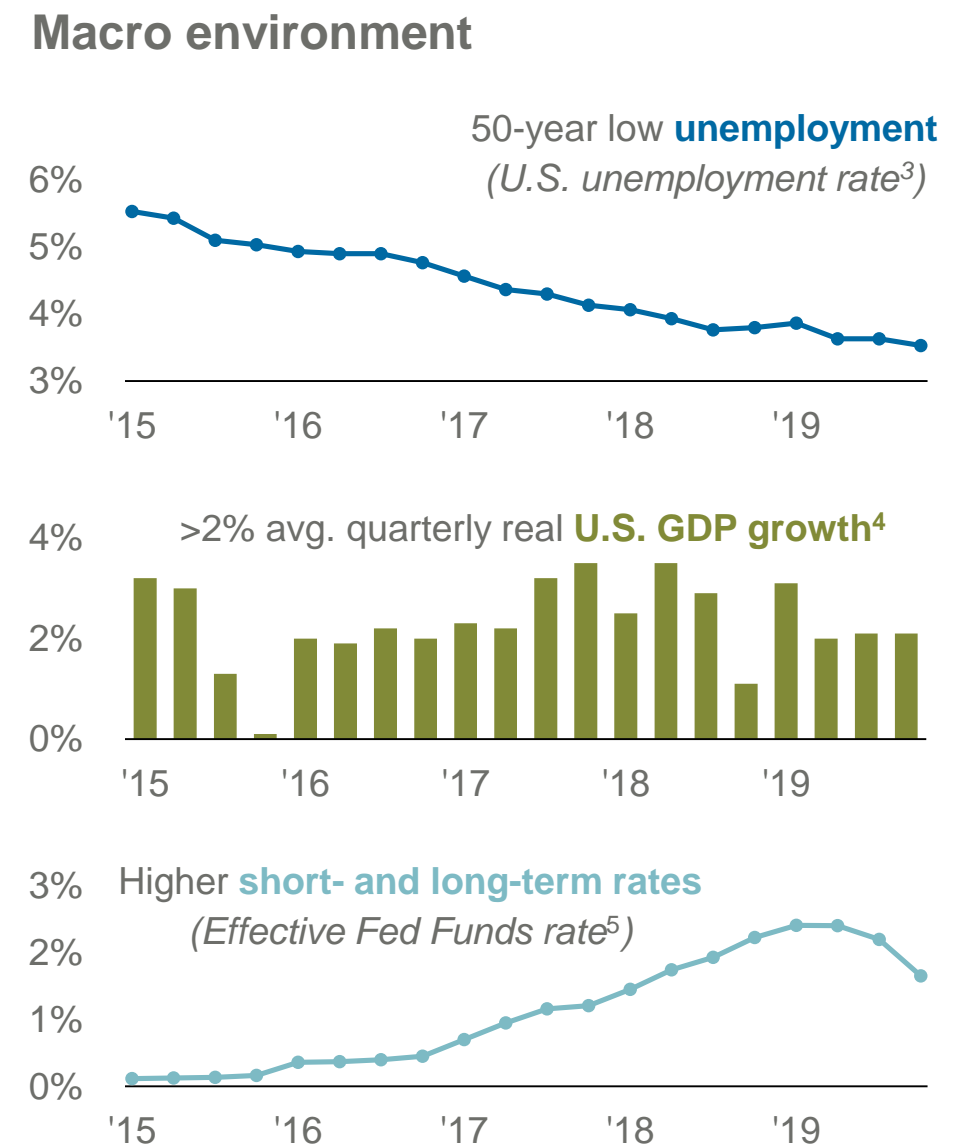
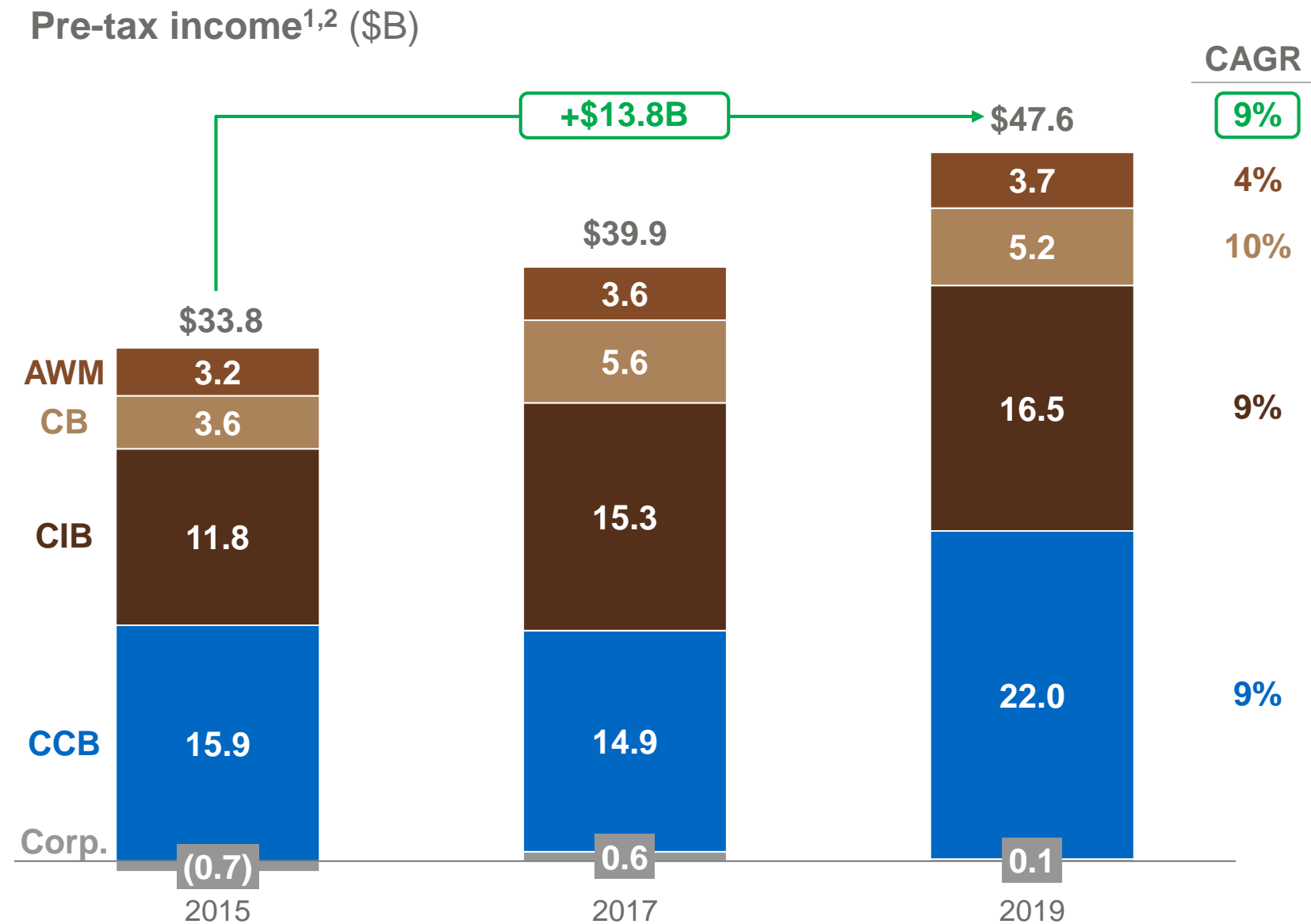
55% ▼
OH ratio^{1,4}



Strong financial performance on an absolute and relative basis

Note: For footnoted information, refer to slide 30

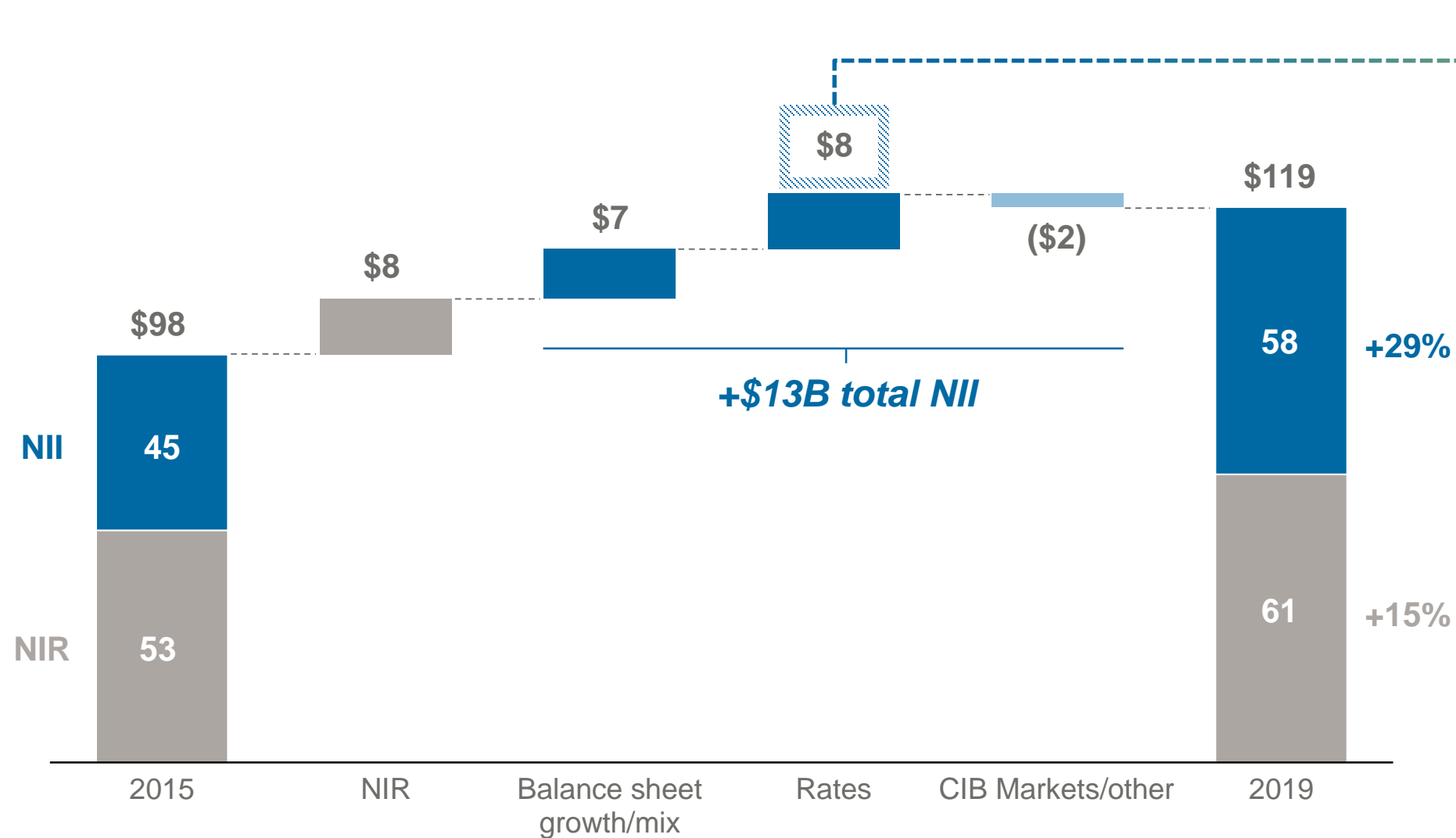
We have grown pre-tax income across each of our businesses – while capitalizing on a favorable economic environment



Note: Totals may not sum due to rounding. For footnoted information, refer to slide 31

We have benefited from the rate environment since 2015 –
and we have reinvested the majority of that benefit back into the business

Revenue¹ (\$B)

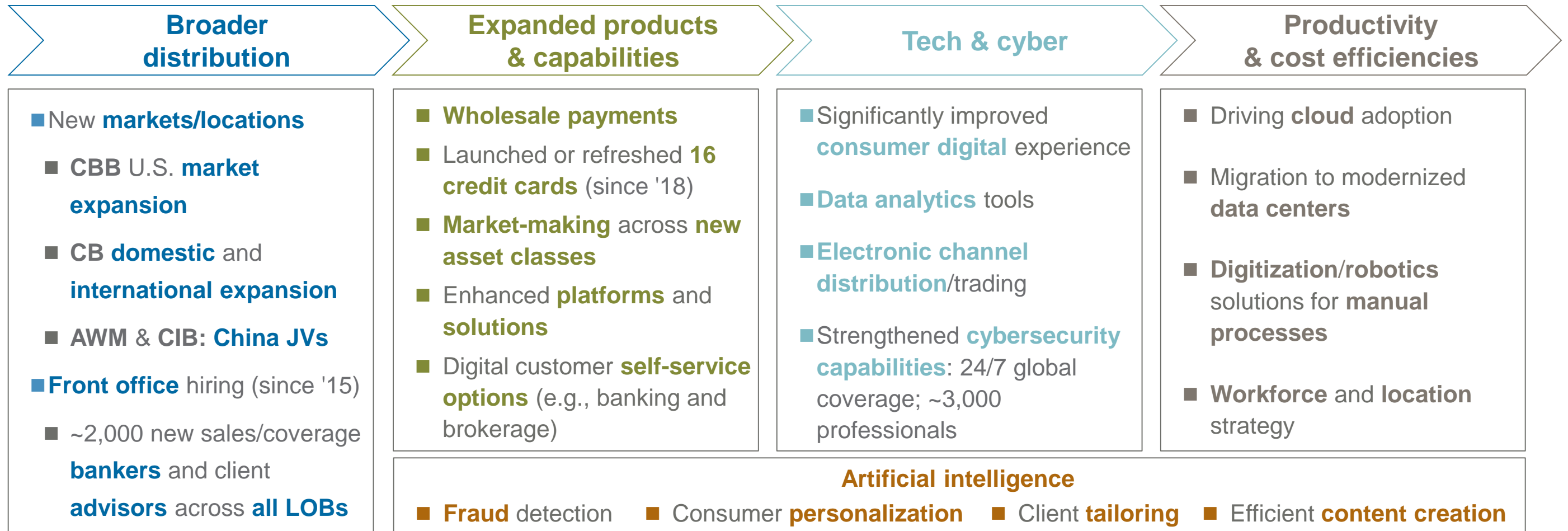


Annual investment expense (\$B)



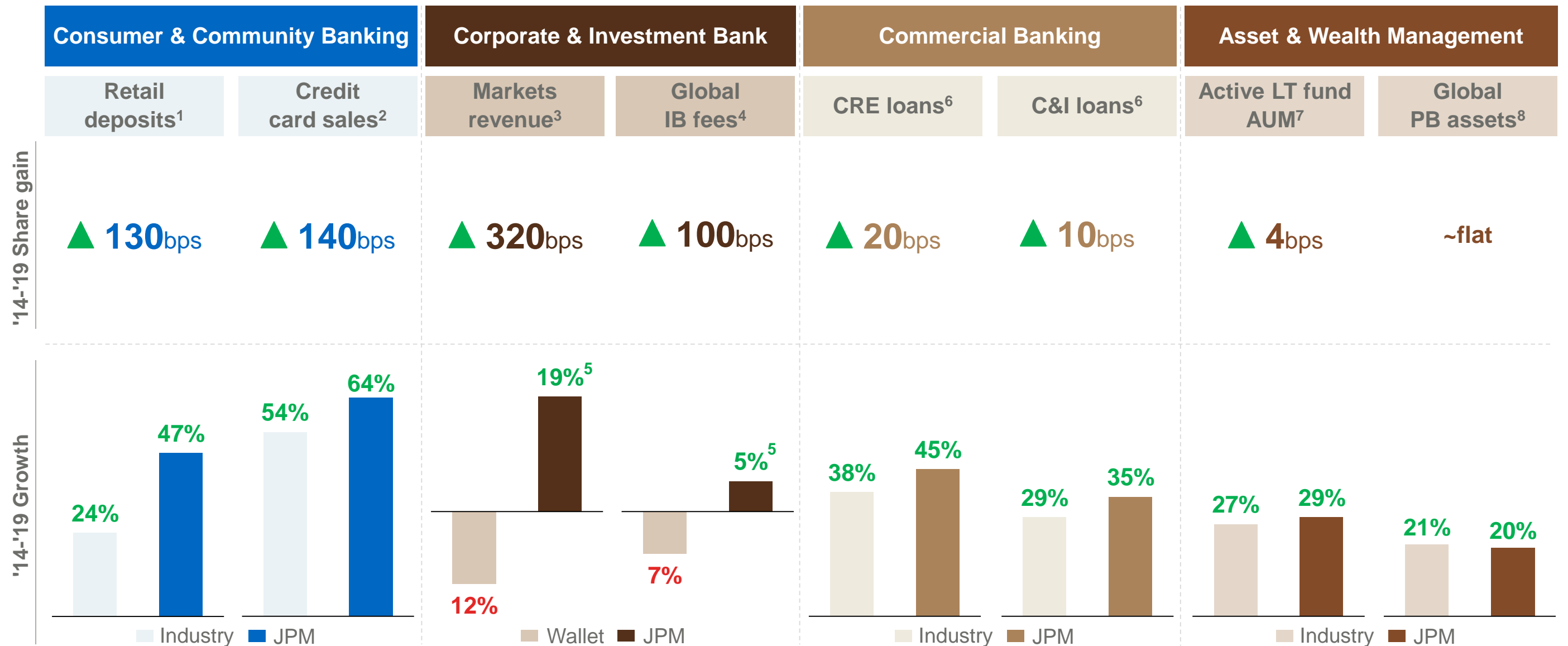
Note: For footnoted information, refer to slide 32

Investments have strengthened our franchise and resiliency in a more challenging environment



Enhanced our competitive advantages – *More Complete, Global, Diversified and At Scale*

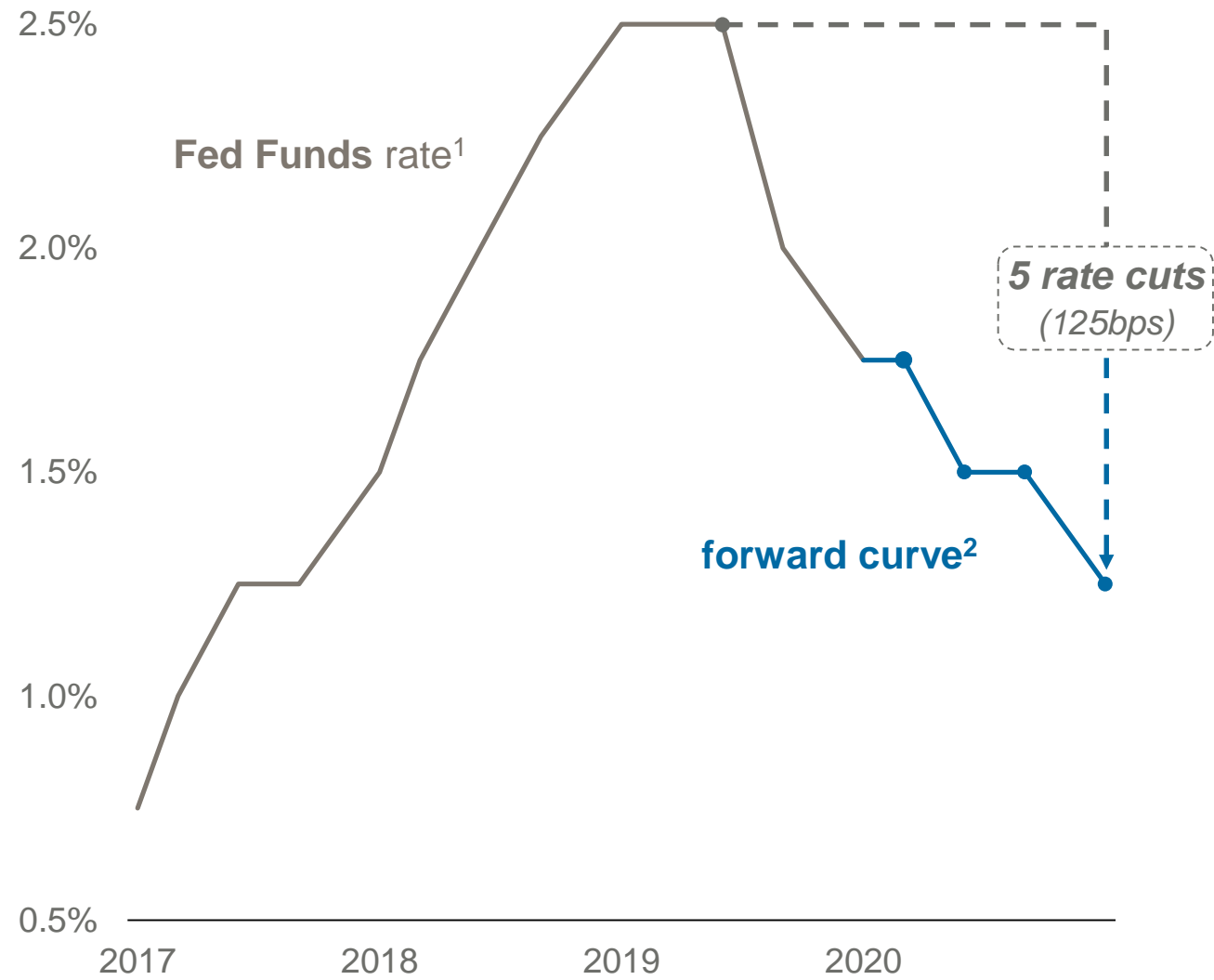
We have captured share across businesses by investing consistently and leveraging our competitive advantages



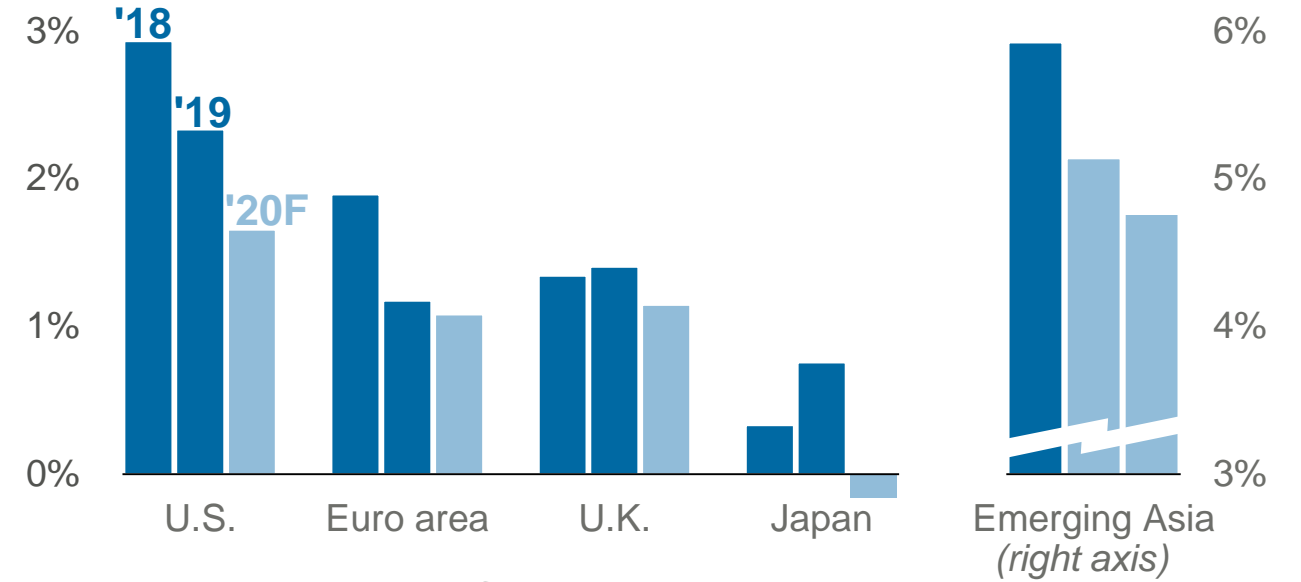
Note: For footnoted information, refer to slide 33

The environment remains strong, but presents us with potential cyclical headwinds...

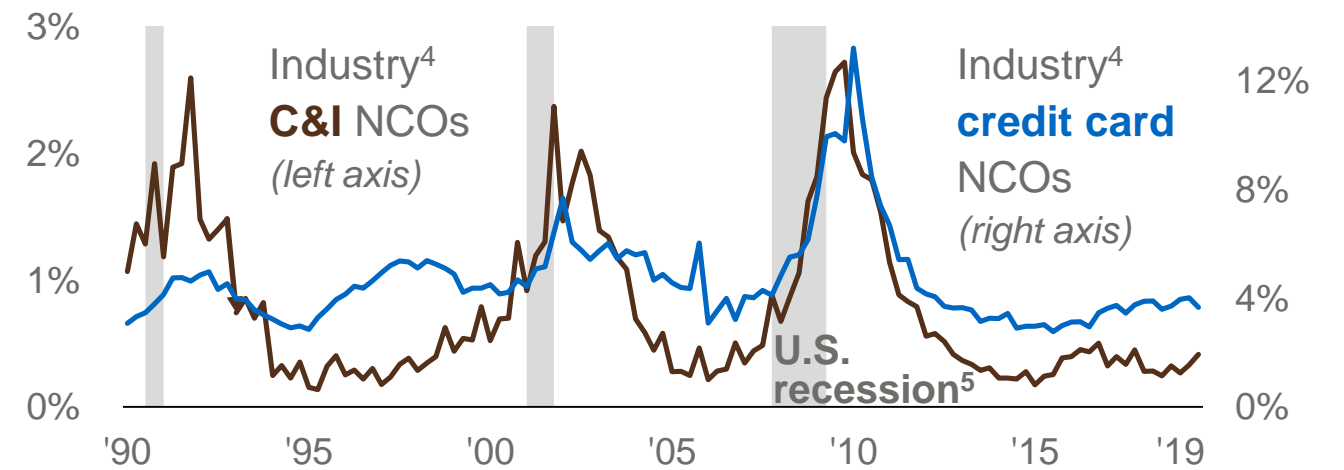
Declining rate environment challenging deposit margins



Positive, but slowing, economic growth³...



...raising specter of next credit cycle



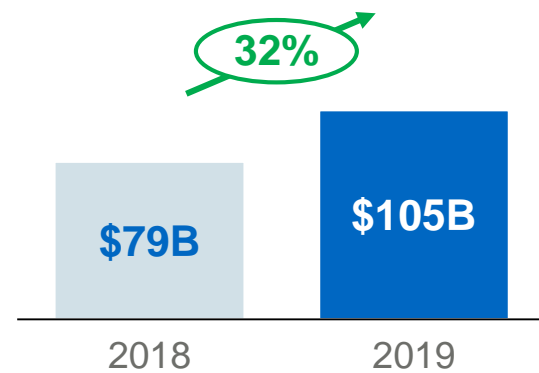
Note: For footnoted information, refer to slide 34

...but our broad diversification benefits us in a more cyclically challenged environment

Lower rates have **offsets** across all our businesses...

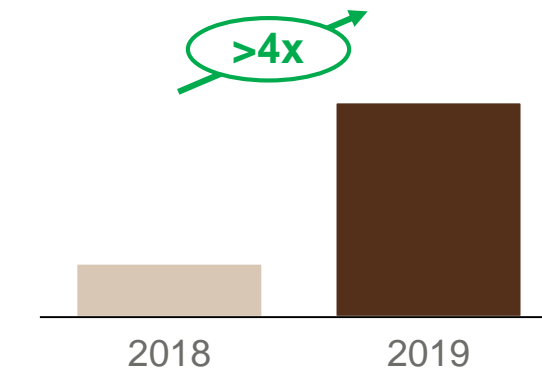
CCB: Mortgage origination

Total mortgage origination volume¹



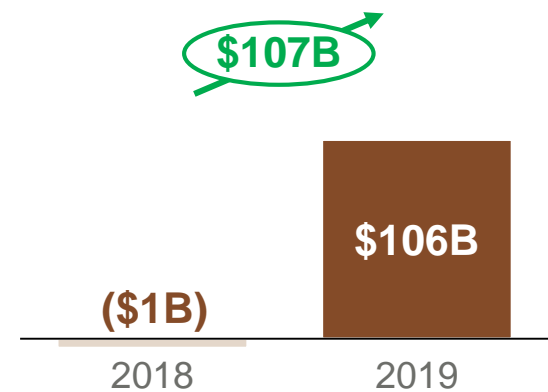
CIB: Mortgage trading

Agency trading revenue²



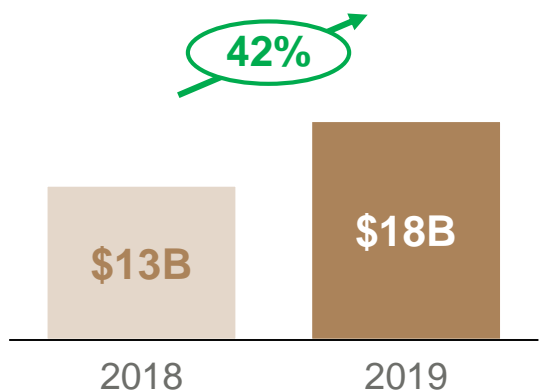
AWM: Demand for yield

Fixed income net flows



CB: CTL origination

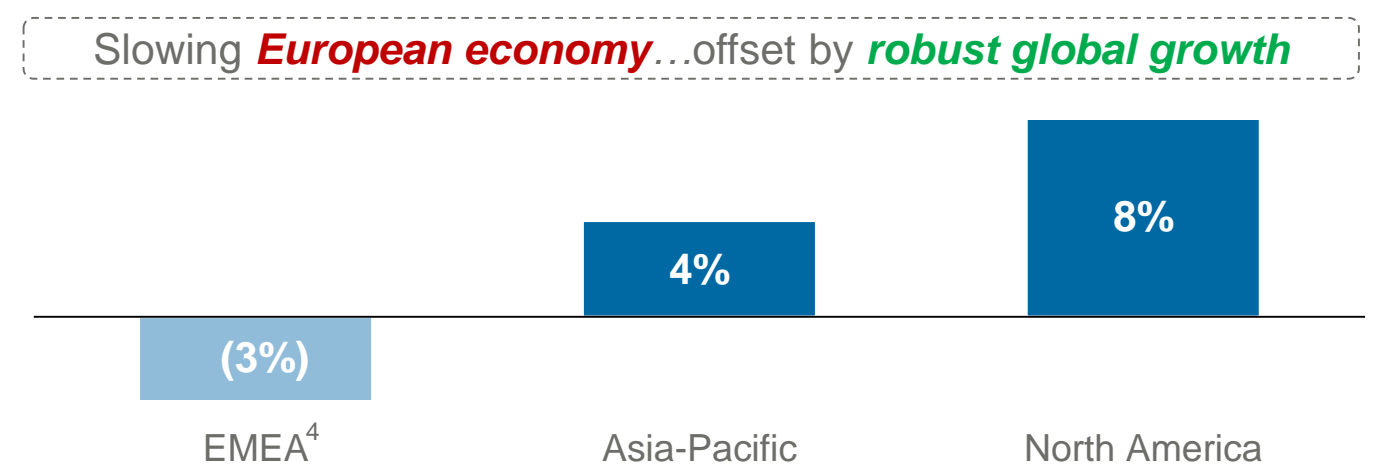
CTL origination volume³



...and we benefit from a **diverse** set of **clients** and **geographies**

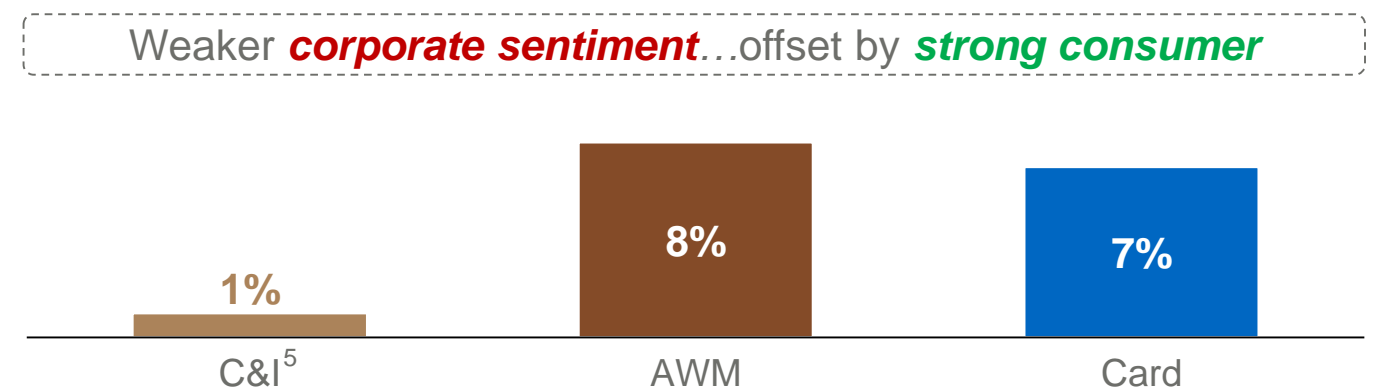
Diversity of geographies

2019 YoY Firm revenue growth



Diversity of clients

2019 avg. loan growth

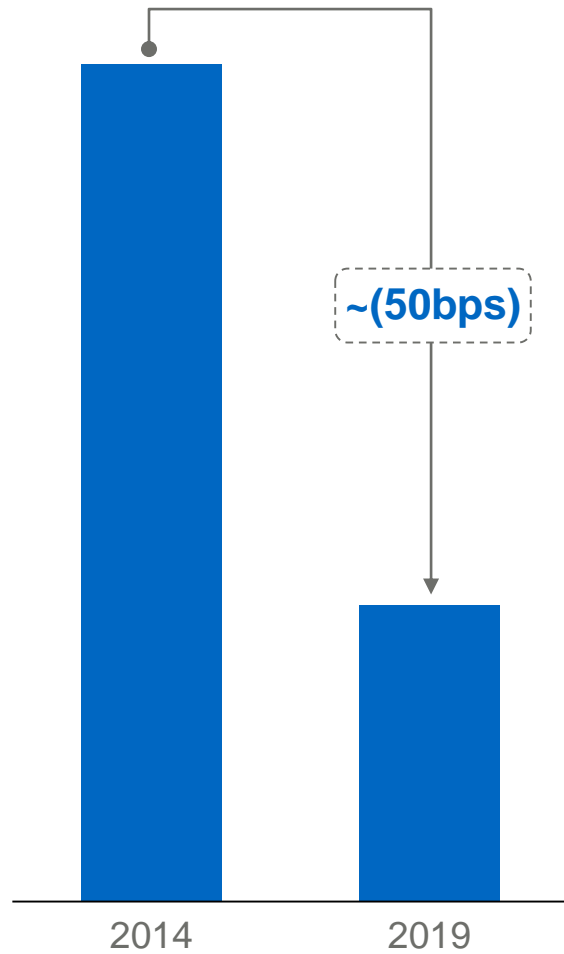


Note: Totals may not sum due to rounding. For footnoted information, refer to slide 35

In addition to cyclical headwinds, we also face more secular challenges...

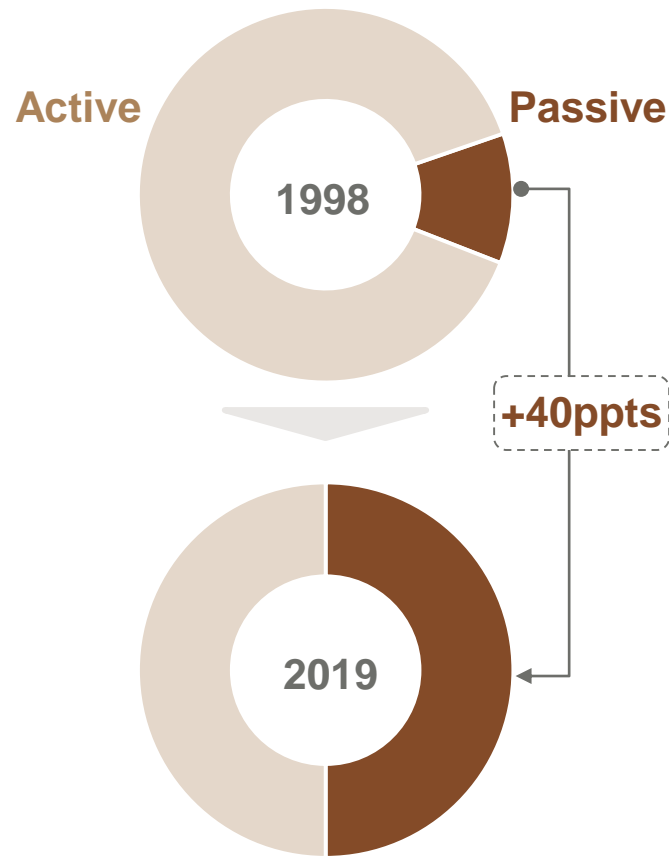
Pressure on interchange fees

Card net interchange margin¹ (%)



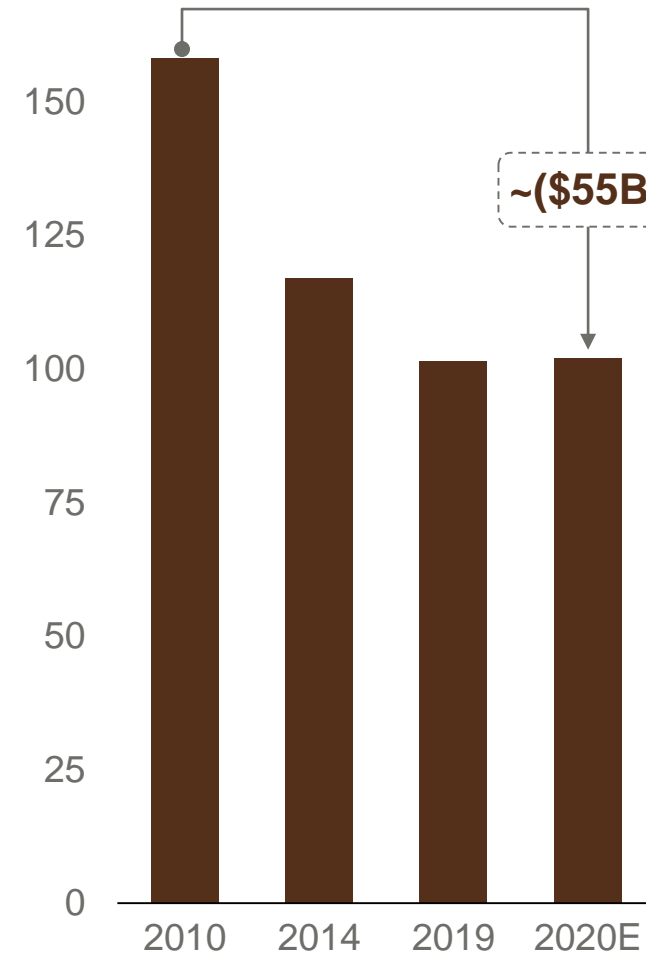
Active to passive shift

U.S. equity funds by type² (%)



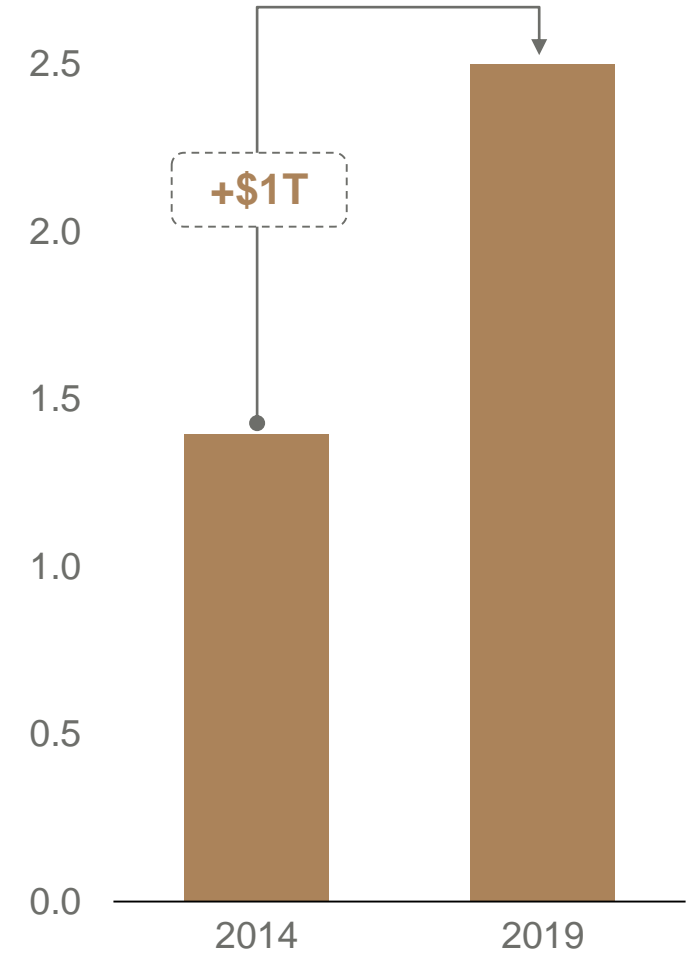
Smaller wallets & overcapacity

FICC global revenue pool³ (\$B)



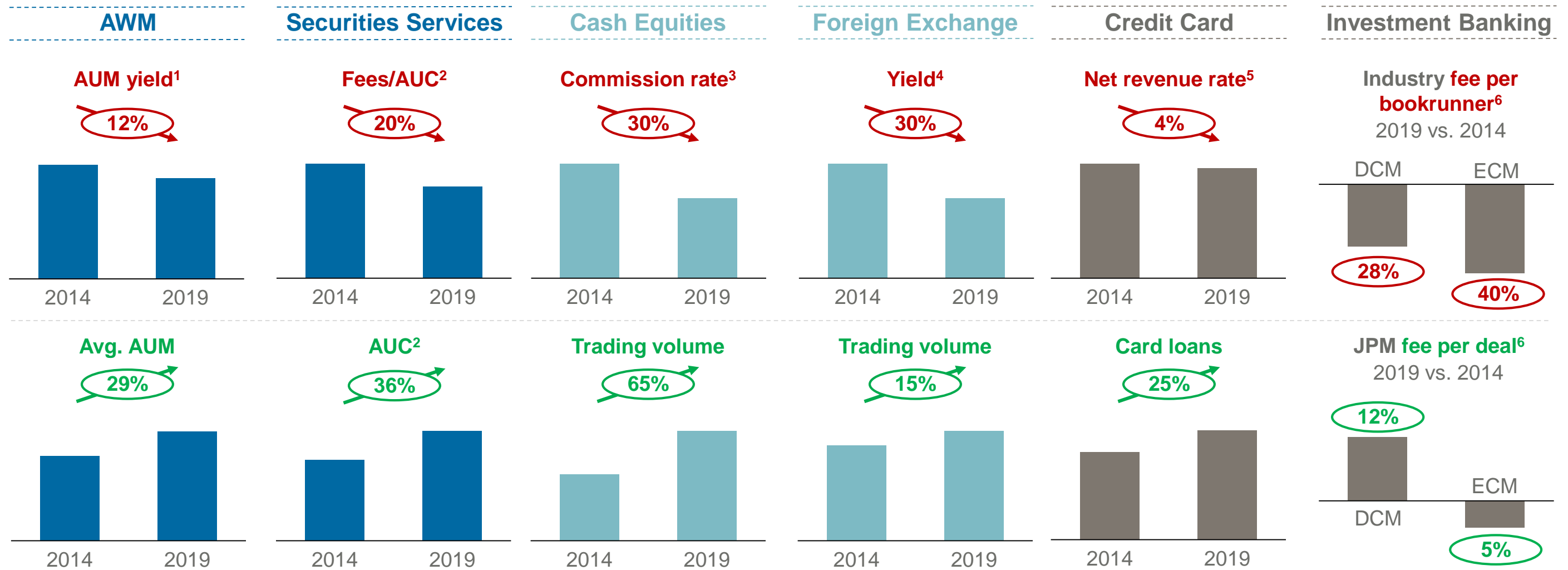
Growth in alternative pools of capital

Global private capital dry powder⁴ (\$T)



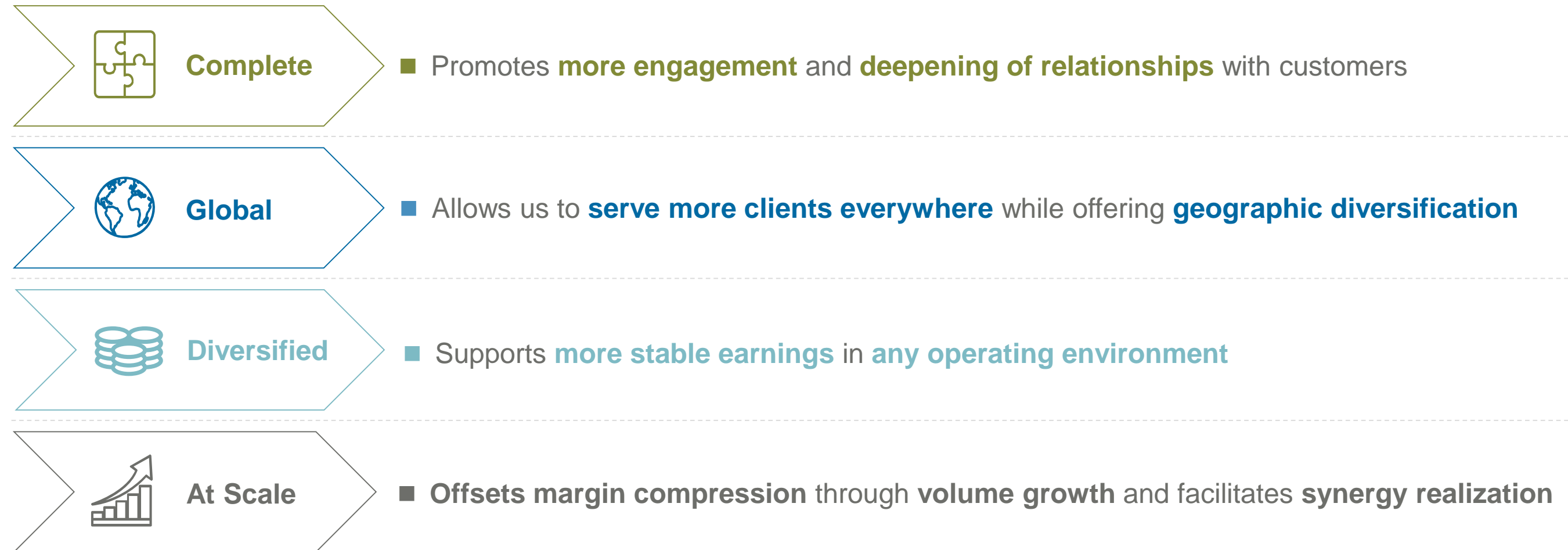
Note: For footnoted information, refer to slide 36

...but our scale, completeness and global franchises allow us to address broad-based margin pressure across the industry caused by these secular headwinds



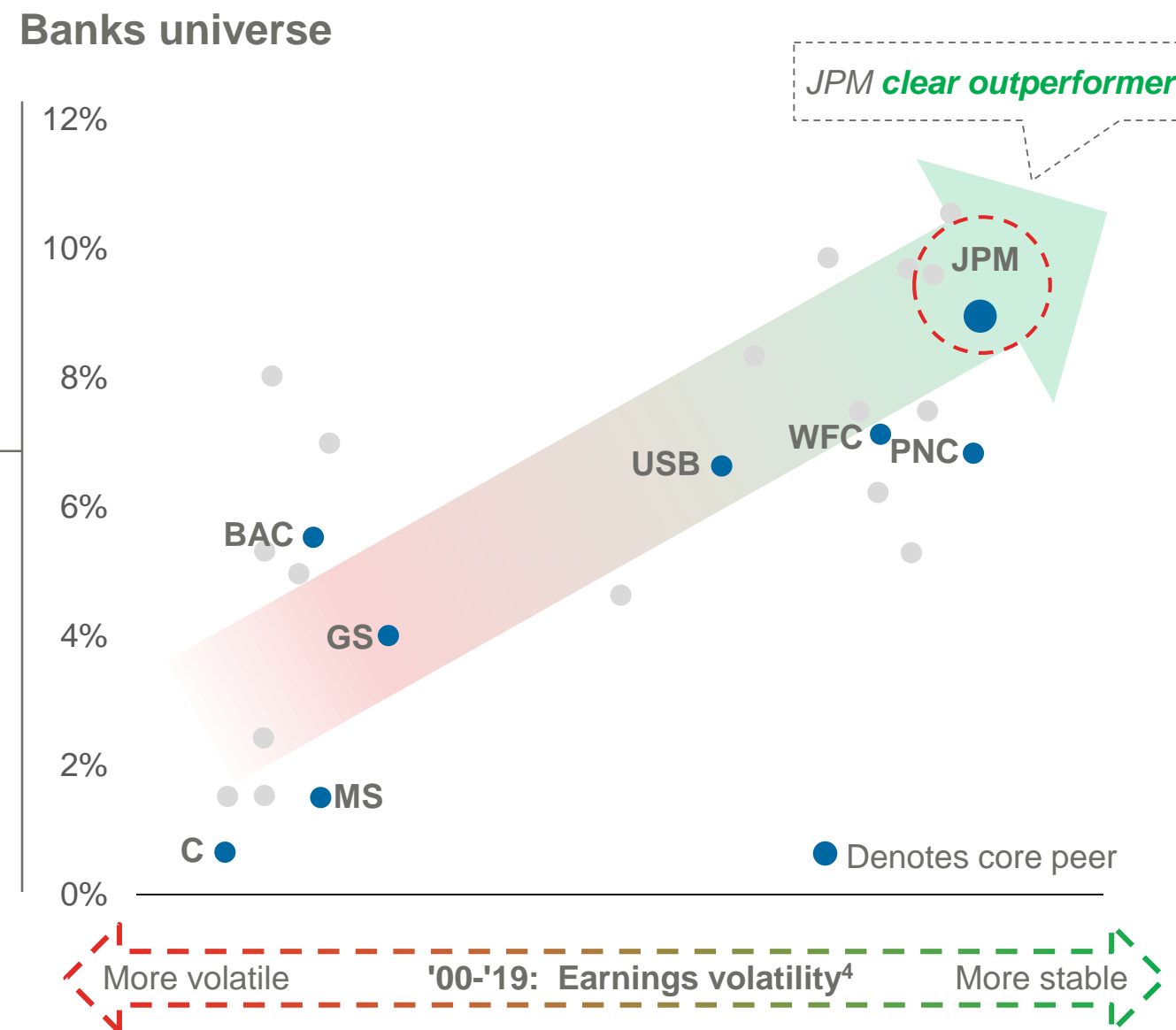
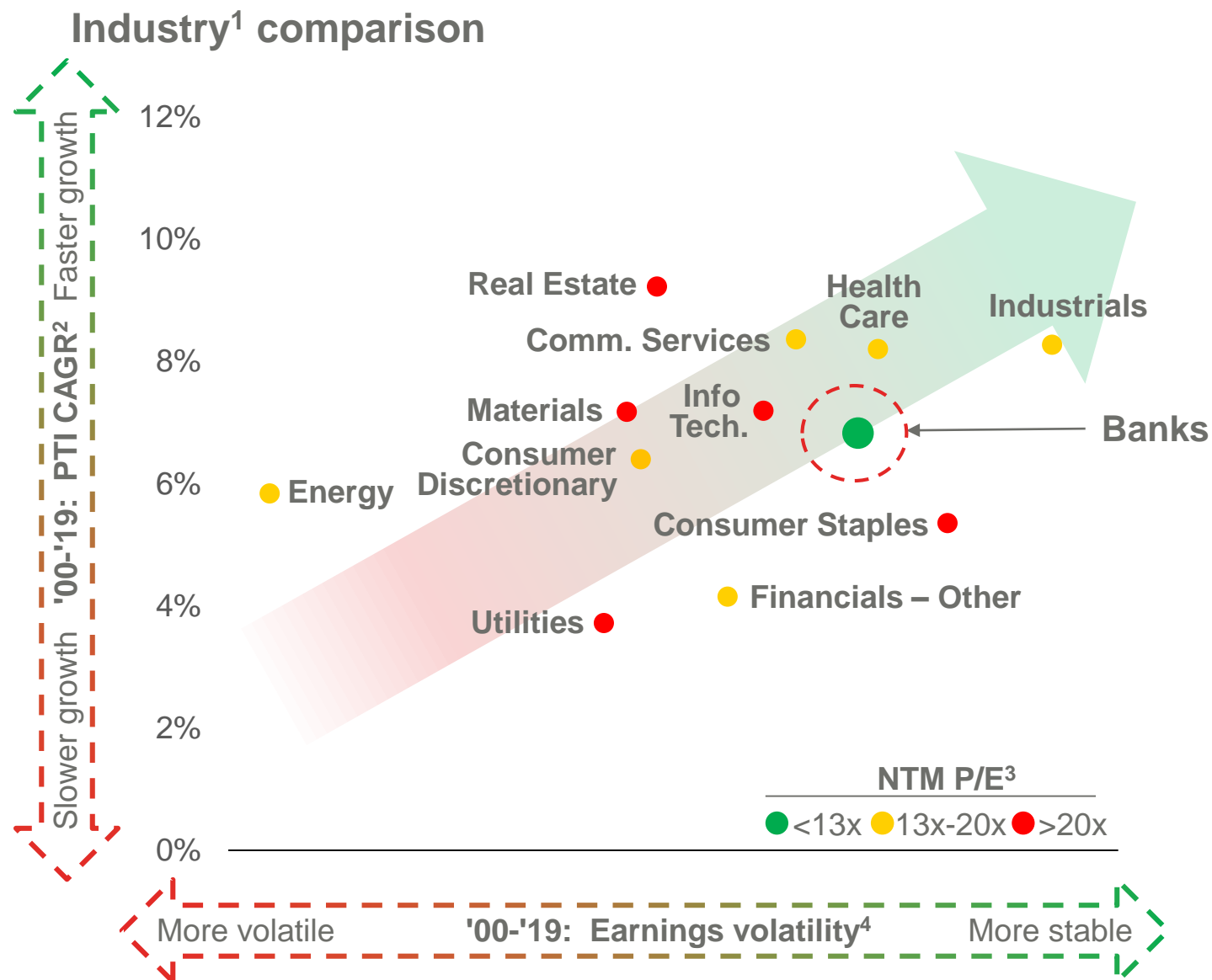
Note: For footnoted information, refer to slide 37

Being Complete, Global, Diversified and At Scale are our competitive advantages...



...and they are key to outperforming when faced with cyclical or secular headwinds

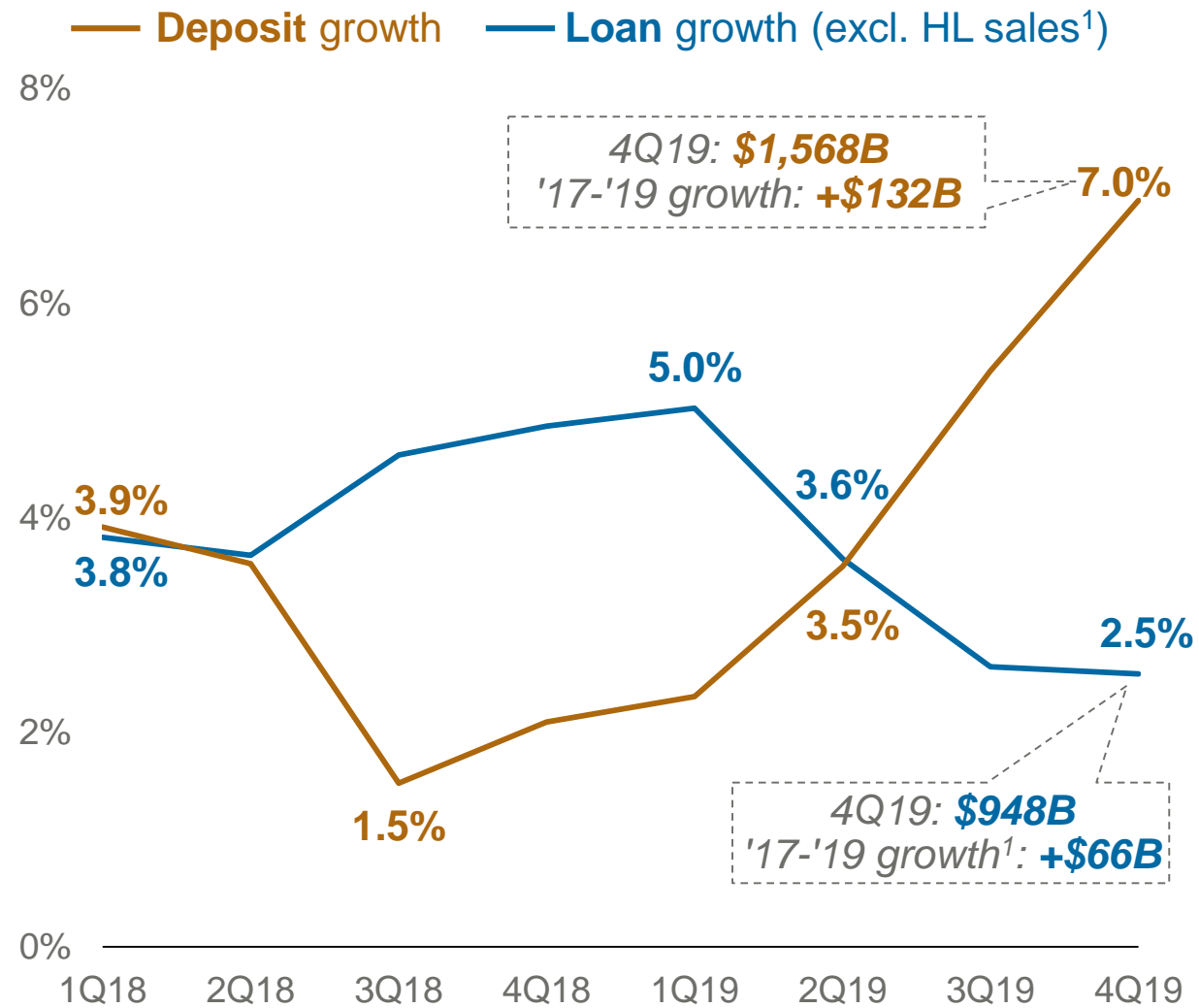
Banks have offered earnings growth and stability over the long-term – and among banks we have outperformed



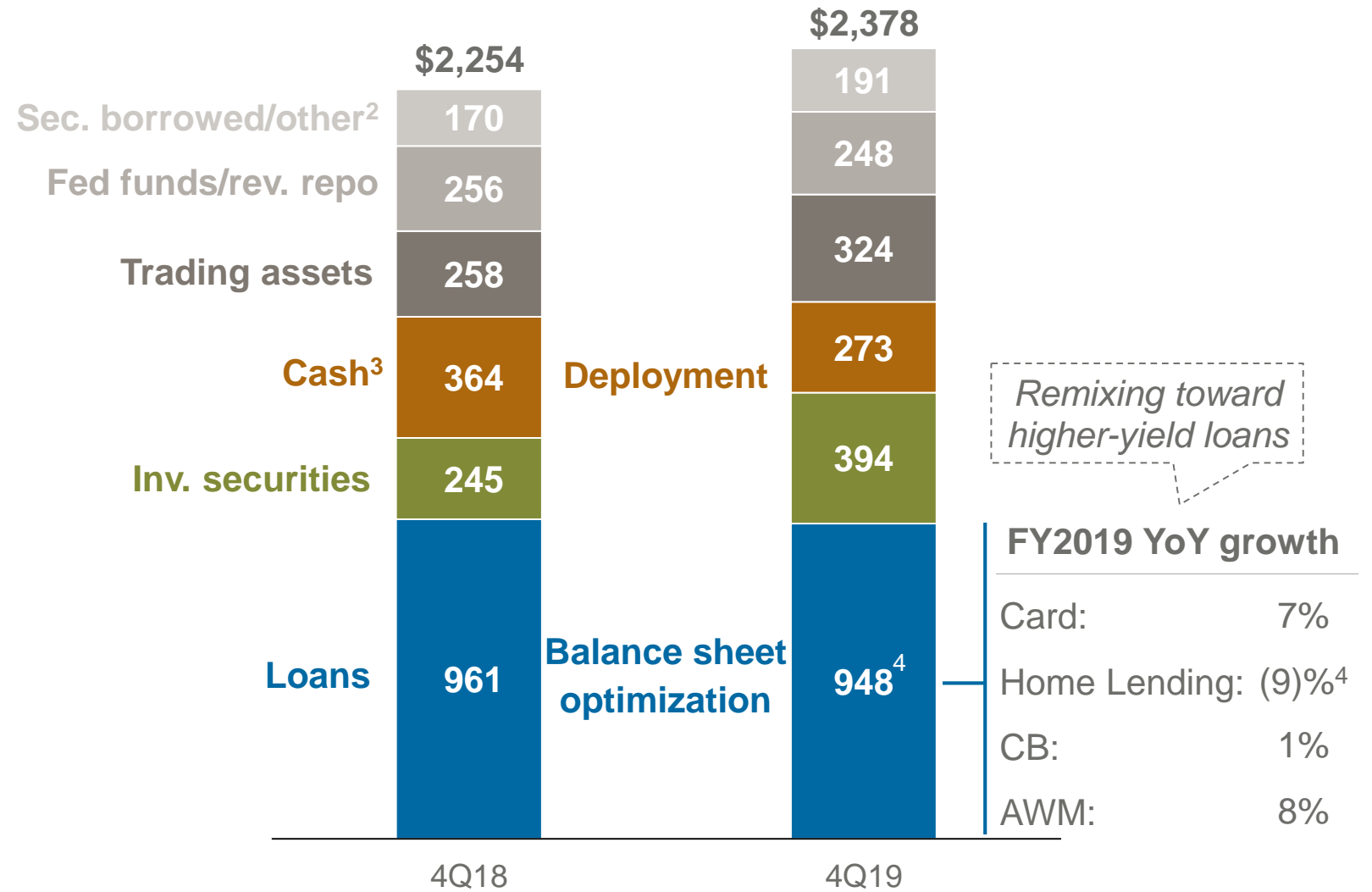
Note: For footnoted information, refer to slide 38

Balance sheet – accelerating deposit growth and remixing of interest-earning assets

YoY loan and deposit growth, quarterly avg. (%)



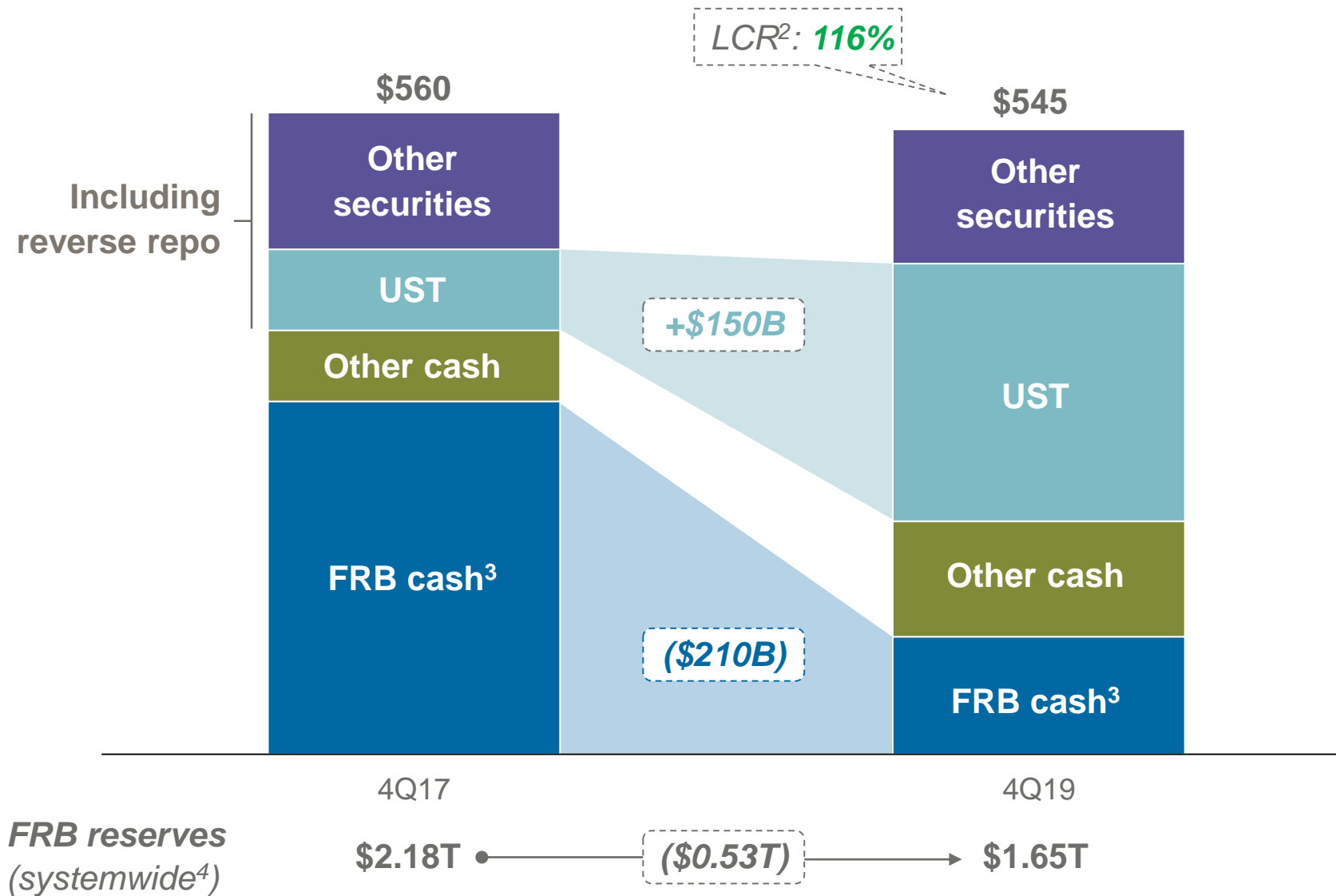
Interest earning-assets, quarterly avg. (\$B)



Note: For footnoted information, refer to slide 39

Liquidity – level of HQLA has remained stable, while composition has changed

HQLA¹ composition, quarterly avg. (\$B)



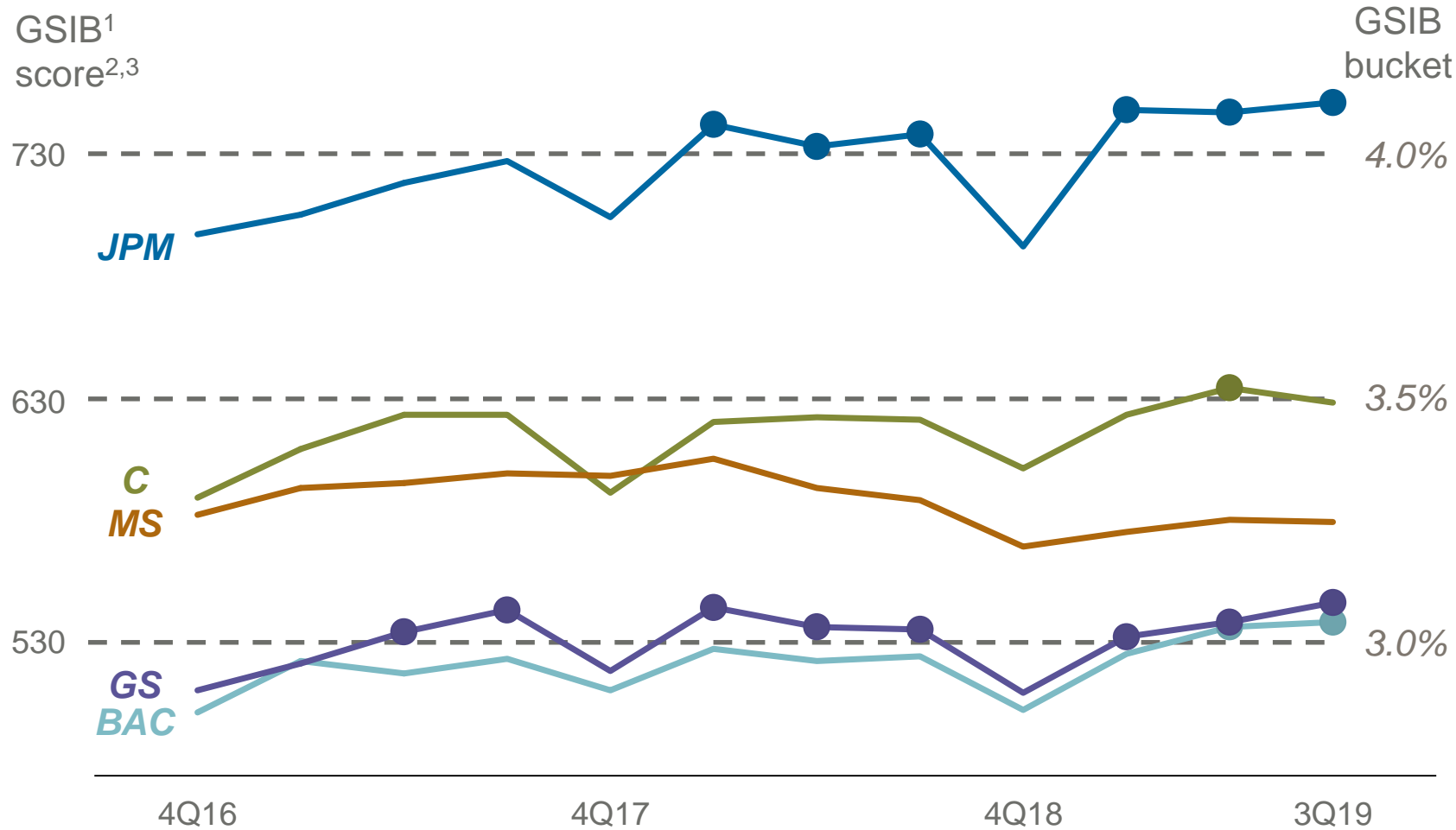
■ In addition to our HQLA, we have ~\$600B of other liquidity sources

- ~\$300B of FHLB & FRB borrowing capacity⁵
- ~\$300B of unencumbered marketable securities⁶

Note: For footnoted information, refer to slide 40

GSIB framework requires timely short-term recalibration

There is increasing pressure to remain in current buckets...



... but there is a simple solution

A **capital-neutral** package of revisions will **expand capacity**

- 1 Index GSIB-coefficients to **GDP**
- 2 Decrease size of GSIB buckets to **remove problematic cliff effects**
- 3 Move measurement period to quarterly **average**

A simple capital-neutral solution expands capacity and ensures confidence in the markets

Note: For footnoted information, refer to slide 41

Capital targets remain consistent as we await SCB & GSIB updates

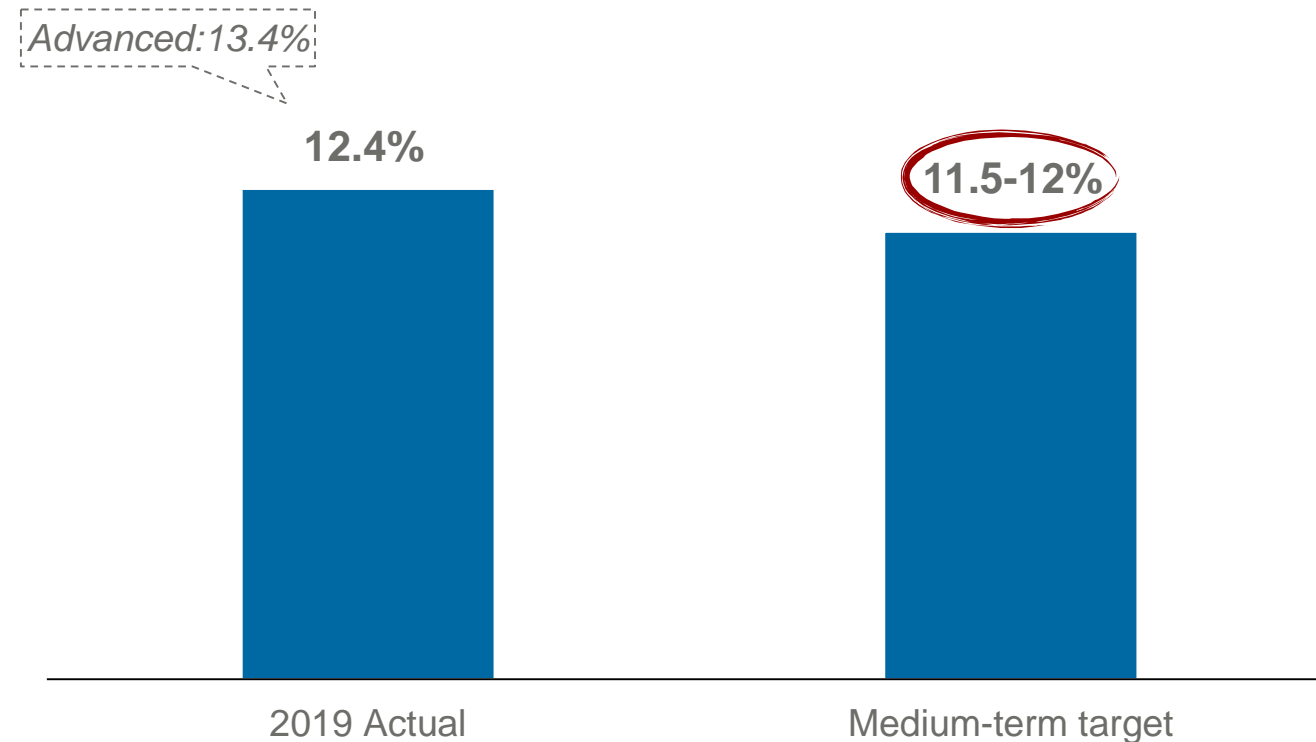
Targets – largely unchanged in absence of SCB¹/GSIB update...

- Returned ~\$34B to shareholders² in 2019
 - Net payout of ~100%

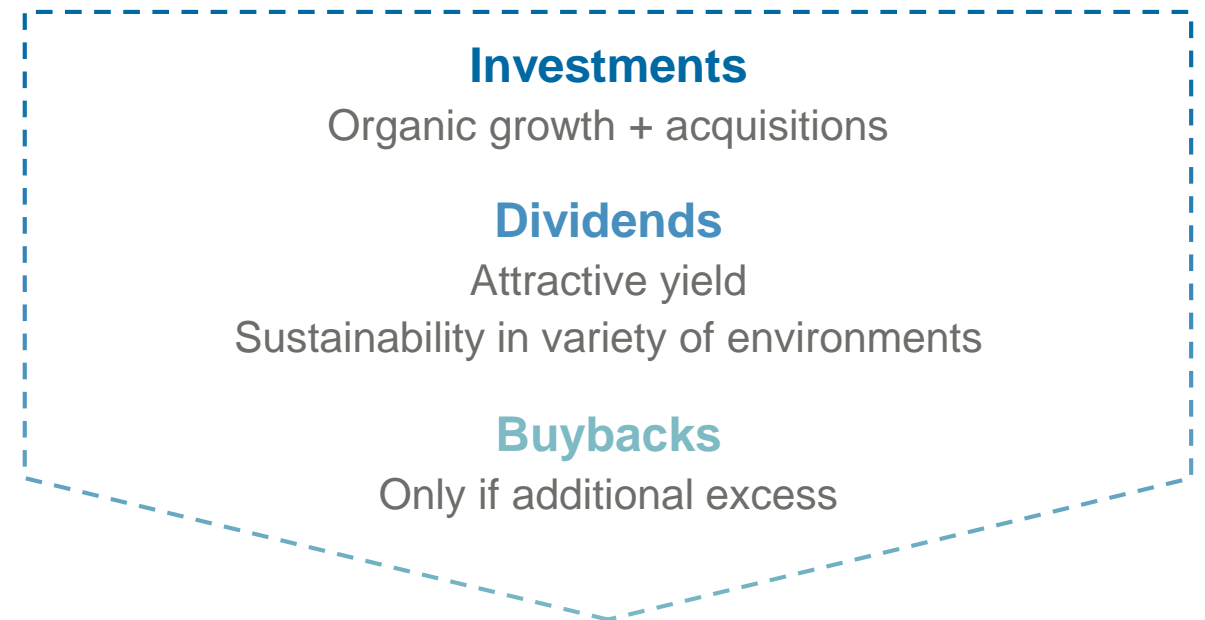
... and our priorities remain the same

- LOB capital allocation³ philosophy and dollars unchanged
- Hierarchy of capital use unchanged

CET1 capital ratio – Standardized



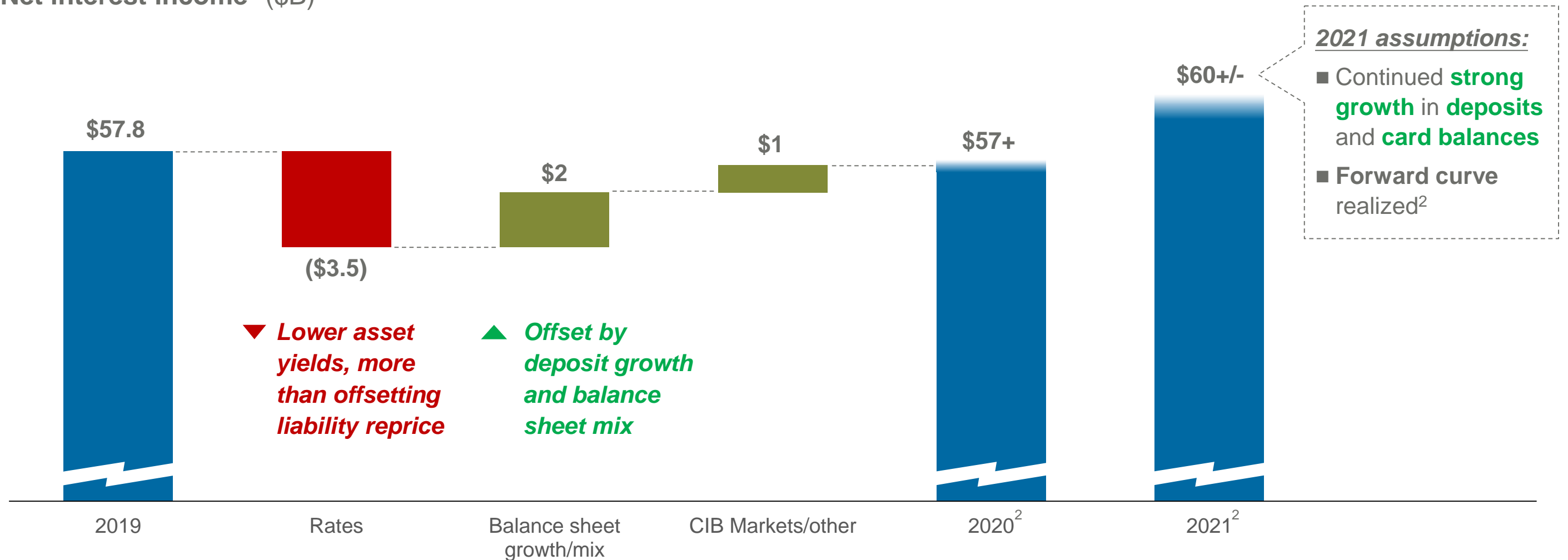
How we deploy capital



Note: For footnoted information, refer to slide 42

Net interest income – we are not immune to the rate environment, but growth and mix will support NII in 2020 and beyond

Net interest income¹ (\$B)

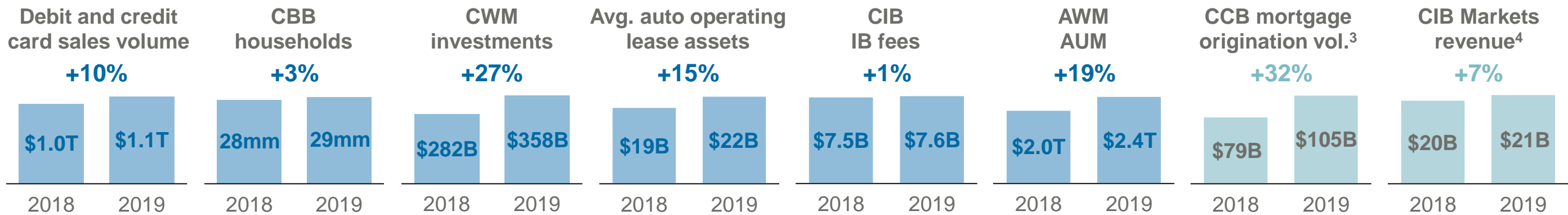
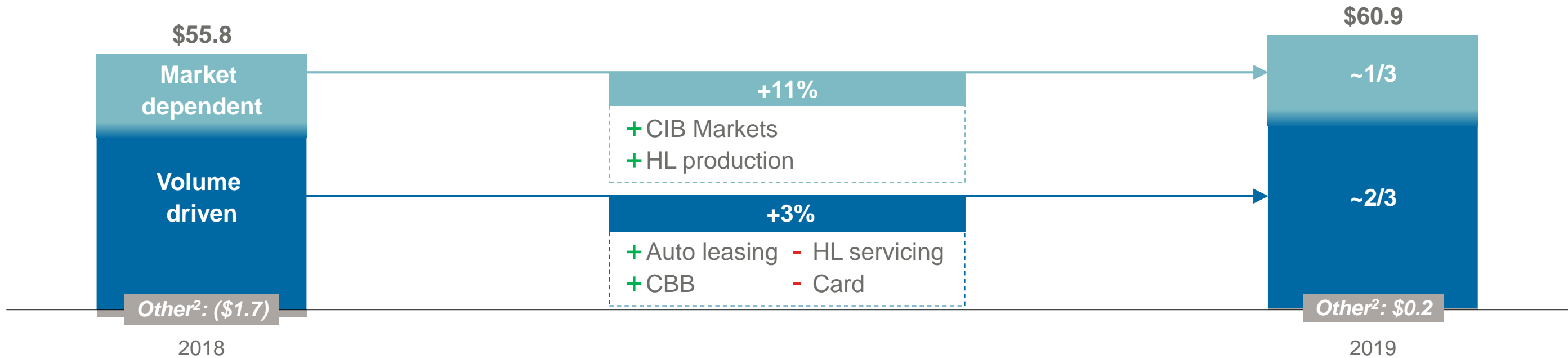


Expect growth and mix to offset the majority of rate pressure in 2020

Note: Totals may not sum due to rounding. For footnoted information, refer to slide 43

Noninterest revenue – steady growth in volume-driven NIR

Noninterest revenue¹ (\$B)

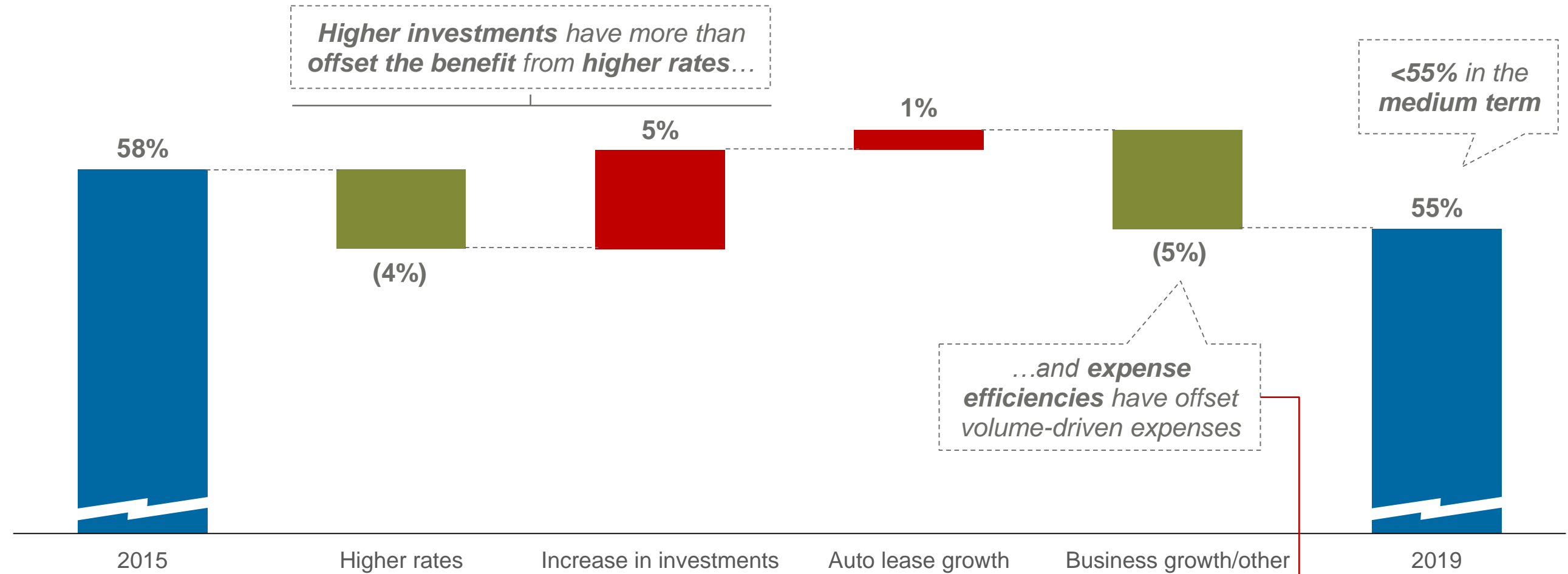


Volume-driven NIR: ~3% CAGR in the medium term

Note: Totals may not sum due to rounding. For footnoted information, refer to slide 44

Overhead ratio – significant improvement driven by revenue growth and expense efficiencies

Adjusted overhead ratio^{1,2} (%)

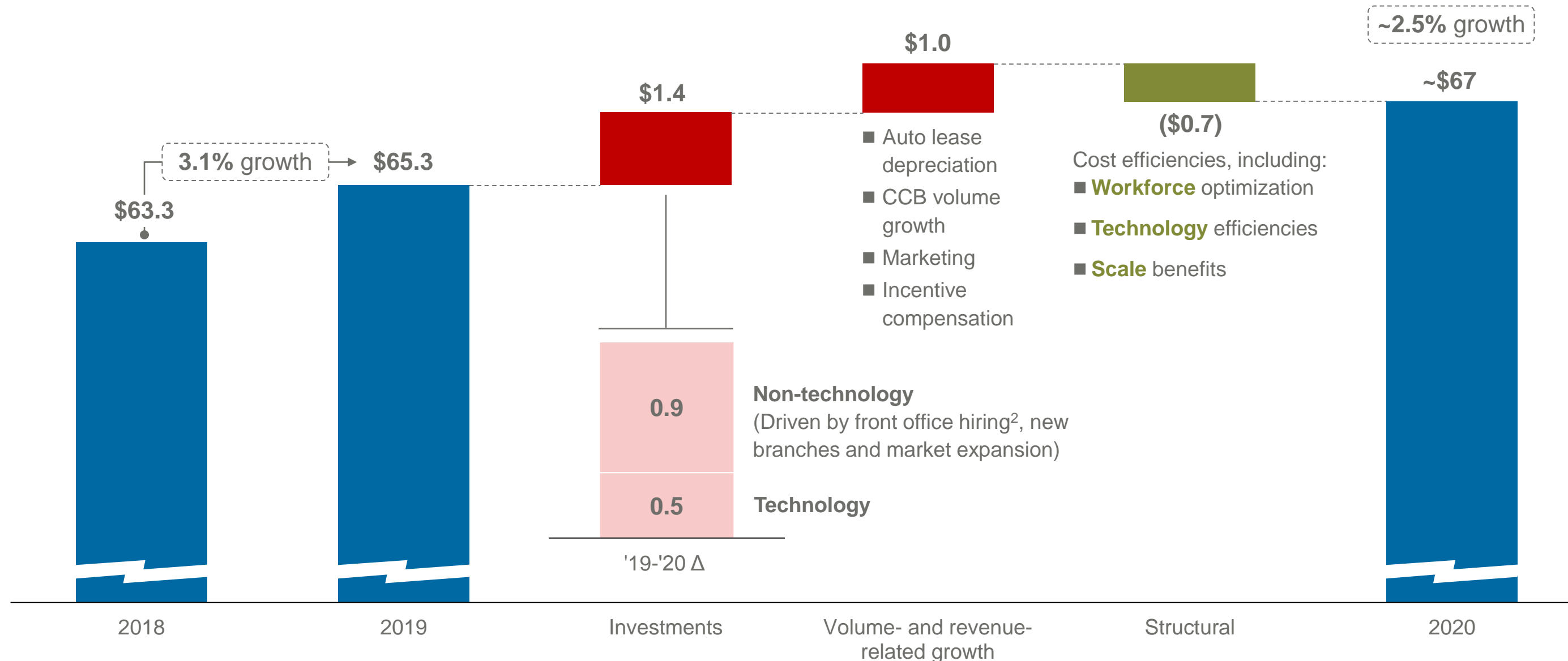


	2015	Higher rates	Increase in investments	Auto lease growth	Business growth/other	2019	
Noninterest expense ² :	\$57B	-	>\$5B	\$2.7B	~\$0B	\$65B	+\$8B
Revenue ¹ :	\$98B	~\$8B	-	\$2.9B	~\$10B	\$119B	+\$21B

Note: Totals may not sum due to rounding. For footnoted information, refer to slide 45

Noninterest expense – we expect a reduction in structural expenses to help fund our investment growth

Adjusted noninterest expense¹ (\$B)



Note: For footnoted information, refer to slide 46

Credit – we remain vigilant despite a benign environment

Net charge-offs

		2019		2020 outlook	
		NCO rate	NCOs (\$B)	NCO rate	
CCB	Home Lending ¹	(0.05)%	\$(0.1)	↔	
	Card	3.10%	4.8	→	Modestly higher on mix
	Auto	0.33%	0.2	→	
	Business Banking ²	0.58%	0.1	→	
CIB		0.15%	0.2	↔	
CB		0.08%	0.2	↔	
AWM		0.02%	0.0	↔	
Firmwide ¹		0.61%	\$5.6	↔	\$6B+ Higher on growth and mix

Allowance for credit losses

2019

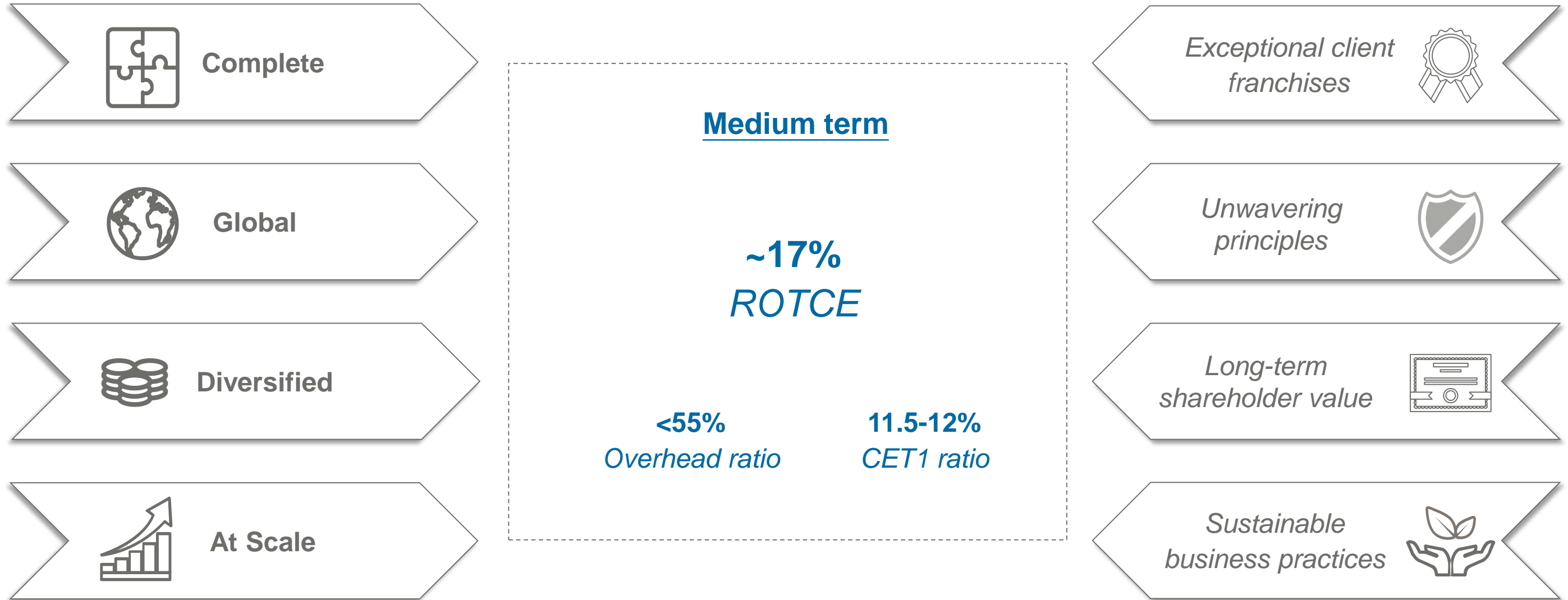
- No Firmwide net reserve build
 - \$500mm reserve build in Card
 - \$750mm reserve release in Home Lending, predominantly related to PCI loans

2020 outlook

- Expect net reserve build in 2020
 - Predominantly driven by Card on growth

Note: Totals may not sum due to rounding. For footnoted information, refer to slide 47

The strength of our franchise supports continued leading financial performance



Agenda

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2020 LOB capital allocation and ROE

	Avg. CET1 (\$B)		Medium-term ROE
	2019	2020	
CCB	\$52	\$52	25%+
CIB	80	80	~16%
CB	22	22	~18%
AWM	10.5	10.5	25%+
Corporate	23.5	20.5	NM
Firm	~\$188	~\$185 ¹	~17% ROTCE

LOB capital allocation and ROE remain unchanged

¹ Reflects average CET1 capital. Total Firm for 2020 is based on analyst estimates

Agenda

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Notes on non-GAAP financial measures

1. In addition to analyzing the Firm's results on a reported basis, management reviews Firmwide results, including the overhead ratio, on a "managed" basis; these Firmwide managed basis results are non-GAAP financial measures. The Firm also reviews the results of the lines of business on a managed basis. The Firm's definition of managed basis starts, in each case, with the reported U.S. GAAP results and includes certain reclassifications to present total net revenue for the Firm and each of the reportable business segments on a fully taxable-equivalent ("FTE") basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in the managed results on a basis comparable to taxable investments and securities. These financial measures allow management to assess the comparability of revenue arising from both taxable and tax-exempt sources. The corresponding income tax impact related to tax-exempt items is recorded within income tax expense. These adjustments have no impact on net income as reported by the Firm as a whole or by the lines of business. For a reconciliation of the Firm's results from a reported to managed basis, see pages 57-58 of JPMorgan Chase Co.'s Annual Report on Form 10-K for the year ended December 31, 2019 (the "2019 Form 10-K")
2. Tangible common equity ("TCE") and return on tangible common equity ("ROTCE") are each non-GAAP financial measures. TCE represents the Firm's common stockholders' equity (i.e., total stockholders' equity less preferred stock) less goodwill and identifiable intangible assets (other than MSRs), net of related deferred tax liabilities. For a reconciliation from common stockholders' equity to TCE, see page 59 of the 2019 Form 10-K. ROTCE measures the Firm's net income applicable to common equity as a percentage of average TCE. TCE and ROTCE are utilized by the Firm, as well as investors and analysts, in assessing the Firm's use of equity
3. Adjusted expense and adjusted overhead ratio are each non-GAAP financial measures. Adjusted expense excludes Firmwide legal expense of \$3.0 billion, \$72 million and \$239 million for the years ended December 31, 2015, 2018 and 2019, respectively. The adjusted overhead ratio measures the Firm's adjusted expense as a percentage of managed net revenue. Management believes this information helps investors understand the effect of these items on reported results and provides an alternate presentation of the Firm's performance
4. Net charge-offs/(recoveries) exclude the impact of purchased credit-impaired ("PCI") loans

Notes on slide 2 – Our comprehensive approach to sustainable development integrates business, community and environmental objectives and leverages our global capabilities

1. In 2017, JPMorgan Chase announced commitments to facilitate \$200 billion in clean financing by 2025 and to source renewable energy for 100% of global power needs by 2020. Source: JPMorgan Chase Co.'s 2018 Environmental Social & Governance Report

Notes on slide 3 – Our client franchises are exceptional – with leadership positions across each business (1/2)

1. See note 1 on slide 26
2. Includes Business Banking (deposit and loan/line of credit) and Ink (card; excludes partner and commercial) households. As a result of a change in household methodology in 2019, ~200K partner cards are no longer included
3. Federal Deposit Insurance Corporation (“FDIC”) 2019 Summary of Deposits survey per S&P Global Market Intelligence. Includes a \$500 million deposit cap for market share. Includes all commercial banks, savings banks, and savings institutions as defined by the FDIC
4. Based on 2019 sales volume and loans outstanding disclosures by peers (C, BAC, COF, AXP, DFS) and JPMorgan Chase estimates. Sales volume excludes private label and Commercial Card. AXP reflects the U.S. Consumer segment and JPMorgan Chase estimates for AXP’s U.S. small business sales. Loans outstanding exclude private label, AXP Charge Card, and Citi Retail Cards
5. Dealogic as of January 2, 2020
6. Coalition, preliminary 2019 rank analysis is based on JPMorgan Chase’s business structure. FY19 rank analysis is based on preliminary results and peer set: BAC, BARC, BNPP, CITI, CS, DB, GS, HSBC, JPM, MS, SG and UBS
7. Based on third-party data
8. Source of assets under custody (“AUC”): Company filings
9. Euromoney; 2019 results released February 6, 2019
10. All quartile rankings, the assigned peer categories and the asset values used to derive this analysis are sourced from Lipper, Morningstar and Nomura based on country of domicile. Includes only Asset Management retail open-ended mutual funds that are ranked by the aforementioned sources. Excludes money market funds, Undiscovered Managers Fund, and Brazil domiciled funds. Quartile rankings reflect the total return (net-of-fees) of each fund. The data providers re-denominate the asset values into U.S. dollars. This % of assets under management (“AUM”) is based on fund performance and associated peer rankings at the share class level for U.S. domiciled funds and at the “primary share class” level or fund level for all other funds. The “primary share class,” as defined by Morningstar, denotes the share class recommended as being the best proxy for the portfolio and in most cases will be the most retail version (based upon the annual management fees charged, minimum investment, currency and other factors). Where peer group rankings given for a fund are in more than one “primary share class” territory both rankings are included to reflect local market competitiveness. The performance data could have been different if all funds/accounts were included. Past performance is not indicative of future results. The classifications in terms of product suites and product engines shown are J.P. Morgan’s own and are based on its internal investment management structures

Notes on slide 3 – Our client franchises are exceptional – with leadership positions across each business (2/2)

11. The Commercial and Industrial (“C&I”) grouping is generally based on client segments and does not align with regulatory definitions

12. S&P Global Market Intelligence as of September 30, 2019

13. Represents total JPMorgan Chase revenue from investment banking products sold to Commercial Banking clients

Notes on slide 4 – 2019 was another year of record revenue and net income

1. See note 1 on slide 26
2. Amounts for GS and MS represent reported revenue
3. See note 2 on slide 26
4. Managed overhead ratio = total noninterest expense / managed revenue; revenue for GS and MS is reflected on a reported basis

Notes on slide 5 – We have grown pre-tax income across each of our businesses – while capitalizing on a favorable economic environment

1. Income before income tax expense on a Managed basis. See note 1 on slide 26
2. For a reconciliation of the Firm's 2015 results from a reported to managed basis, see page 80 of JPMorgan Chase Co.'s Annual Report on Form 10-K for the year ended December 31, 2015 (the "2015 Form 10-K")
3. Seasonally adjusted average quarterly rate. Source: U.S. Bureau of Labor Statistics as of December, 2019. Based on February 7, 2020, revision
4. Seasonally adjusted annualized rates. Source: U.S. Bureau of Economic Analysis as of Q419. Based on January 30, 2020, revision
5. Average quarterly rate, not seasonally adjusted. Source: Board of Governors of the Federal Reserve System as of December, 2019

Notes on slide 6 – We have benefited from the rate environment since 2015 – and we have reinvested the majority of that benefit back into the business

1. See note 1 on slide 26

Notes on slide 8 – We have captured share across businesses by investing consistently and leveraging our competitive advantages

1. FDIC 2019 Summary of Deposits survey per S&P Global Market Intelligence. Includes a \$500 million deposit cap for market share and a \$500 million 10-year exclusion for growth (excluded branches are assumed to include a significant level of commercial deposits or are headquarter branches for direct banks). Includes all commercial banks, savings banks, and savings institutions as defined by the FDIC
2. Represents general purpose credit card (“GPCC”) spend, which excludes private label and Commercial Card; based on company filings and JPMorgan Chase estimates
3. Coalition, preliminary 2019 market share analysis reflects JPMorgan Chase’s share of the global industry revenue pool and is based on JPMorgan Chase’s business structure
4. Dealogic as of January 2, 2020
5. Markets Revenue growth per Coalition Competitor preliminary 2019 analysis, and Global IB fees growth per Dealogic as of January 2, 2020. Growth per JPMorgan Chase’s managed results were 9% and 13% for Markets revenue and IB fees, respectively
6. Commercial Banking’s market share and relative growth are compared to the respective C&I and CRE portfolios of all U.S. banks. Source: S&P Global Market Intelligence as of December 31, 2019. The C&I and CRE groupings used herein align with regulatory definitions
7. Strategic Insight as of January 2020. Reflects active long-term mutual funds and exchange-traded funds (“ETFs”) only. Excludes fund of funds and money market funds
8. Capgemini World Wealth Report 2019. Market share estimated based on 2018 data (latest available)

Notes on slide 9 – The environment remains strong, but presents us with potential cyclical headwinds...

1. Board of Governors of the Federal Reserve System
2. J.P. Morgan calculation based on market data as of February 21, 2020
3. Historical data from U.S. Bureau of Economic Analysis, Eurostat, Office for National Statistics, Cabinet Office of Economic and Social Research Institute and J.P. Morgan CIB Research for the U.S., Euro area, the U.K, Japan and Emerging Asia, respectively. Forecast data from J.P. Morgan CIB Research as of February 19, 2020. 2019 actuals for Emerging Asia not yet available
4. FDIC as of Q319; represents quarterly loan portfolio performance indicators for all FDIC-insured institutions. The Commercial and Industrial (“C&I”) grouping aligns with regulatory definitions
5. National Bureau of Economic Research; official recessions depicted include July, 1990, through March, 1991; March, 2001, through November, 2001; and December, 2007, through June, 2009

Notes on slide 10 – ...but our broad diversification benefits us in a more cyclically challenged environment

1. Firmwide mortgage origination volume was \$115.9 billion and \$86.9 billion for the years ended December 31, 2019 and 2018, respectively
2. “Agency trading” refers to market-making activities in U.S. government agency mortgage-backed securities. Agency trading revenues are externally reported as part of the Fixed Income Markets business
3. Commercial Term Lending (“CTL”) originations include refinancing activity
4. Europe/Middle East/Africa (“EMEA”)
5. The Commercial and Industrial (“C&I”) grouping is generally based on client segments and does not align with regulatory definitions

Notes on slide 11 – In addition to cyclical headwinds, we also face more secular challenges...

1. Net interchange margin = net interchange income (interchange income less rewards costs and partner payments)/credit card sales volume
2. Morningstar, as of December, 1998, and April, 2019, respectively
3. Fixed income, currency and commodities (“FICC”); Coalition, preliminary 2019-2020 Industry revenue pool analysis based on JPMorgan Chase’s business structure
4. Preqin, as of December, 2014, and March, 2019, respectively

Notes on slide 12 – ...but our scale, completeness and global franchises allow us to address broad-based margin pressure across the industry caused by these secular headwinds

1. AUM yield = long-term and cash management fees / average AUM
2. 2014 and 2019 fees and AUC adjusted for exited businesses. 2014 fees also exclude the impact of a significant client exit and was revised to present depository receipt fees on a net basis in accordance with the retrospective adoption of the revenue recognition guidance in the first quarter of 2018. Total adjustments to fees were \$368 million and \$0.1 million in 2014 and 2019, respectively. Total adjustments to AUC were \$1.1 trillion and \$0.2 trillion in 2014 and 2019, respectively
3. Commission rate = commission revenue / trading volume
4. Yield = foreign exchange (“FX”) revenue / trading volume. FX data is for major currencies (EUR, GBP, AUD, NZD, CHF, JPY, CAD, USD). FX revenues are reported as part of the Fixed Income Markets business
5. Net revenue rate reflects the Credit Card business only and excludes rewards liability adjustments. Credit Card net revenue rate was 10.6% and 11.1% for the years ended December 31, 2019 and 2014, respectively. Effective in the first quarter of 2020, the Merchant Services business was realigned from CCB to CIB as part of the Firm’s Wholesale Payments business. The revenue and expenses of the Merchant Services business will be reported across CCB, CIB and CB based primarily on client relationship
6. Dealogic as of January 2, 2020. Based on top 100 fee-paying deals

Notes on slide 14 – Banks have offered earnings growth and stability over the long-term – and among banks we have outperformed

1. Includes all current constituents of the S&P 500 index that have been publicly traded since 2000 (includes 385 unique companies), grouped by sector. The Financials sector has been further subdivided into Banks and Financials – Other. The data displayed represents the median value of the constituents of each sector
2. Compound annual growth rate (“CAGR”) of pre-tax income (“PTI”) between 2000 and 2019. For companies that have not yet reported full-year 2019 PTI, the 2019 data point has been replaced by the last-twelve month PTI as of 3Q19; source FactSet as of 4Q19
3. NTM PE = share price / consensus earnings per share (“EPS”) for the next twelve months (“NTM”); source FactSet as of January 31, 2020
4. Earnings volatility is defined as the r-squared of PTI growth through time. R-squared is a statistical measure that represents the proportion of the variance for a dependent variable that is explained by an independent variable or variables in a regression model. Perfectly equal PTI growth by year equals a score of 100, whereas a perfectly random path for PTI equals a score of 0

Notes on slide 15 – Balance sheet – accelerating deposit growth and remixing of interest-earning assets

1. Quarterly average loan growth excludes the impact of Home Lending (“HL”) loan sales on average loan balances in each period
2. Sec. borrowed/other includes receivable from customers, which are prime brokerage-related held-for-investment margin loans that are classified in accrued interest and accounts receivable, and all other interest-earning assets that are classified in other assets on the Consolidated Balance Sheets
3. Represents deposits with banks
4. Includes the impact of HL loan sales

Notes on slide 16 – Liquidity – level of HQLA has remained stable, while composition has changed

1. High-quality liquid assets (“HQLA”) represent the amount of unencumbered liquid assets that qualify for inclusion in the liquidity coverage ratio (“LCR”), and excludes excess HQLA at JPMorgan Chase Bank, N.A. that are not transferable to non-bank affiliates
2. $LCR = HQLA / \text{net cash outflows}$. Estimated net cash outflows are based on standardized stress outflow and inflow rates prescribed in the LCR rule, which are applied to the balances of the Firm’s assets, sources of funds, and obligations. The LCR is required to be a minimum of 100%
3. Cash held at Federal Reserve Banks (“FRB”) less required reserves and other restricted amounts
4. Total end-of-period reserve balances of depository institutions with FRB. Source: FRB and the U.S. Department of the Treasury (FRB H.4.1). As of December 27, 2017, and December 25, 2019, respectively
5. Available borrowing capacity at Federal Home Loan Banks (“FHLB”) and the discount window at FRB as a result of collateral pledged by the Firm to such banks. Excludes the benefit of cash and securities reported in the Firm’s HQLA or other unencumbered securities that are currently pledged at the FRB discount window and other central banks
6. Unencumbered marketable securities, such as equity securities and fixed income debt securities, include HQLA-eligible securities which are included as part of the excess liquidity at JPMorgan Chase Bank, N.A. that are not transferable to non-bank affiliates

Notes on slide 17 – GSIB framework requires timely short-term recalibration

1. Global systemically important banks (“GSIB”)
2. JPMorgan Chase and peer calculations are based on Federal Reserve Form FR Y-15, Banking Organization Systemic Risk Report
3. Circular markers indicate a higher intra-year surcharge bucket than the surcharge currently in effect; capital requirements are based on year-end score

Notes on slide 18 – Capital targets remain consistent as we await SCB & GSIB updates

1. Stress capital buffer (“SCB”)
2. Net of stock issued to employees
3. For an overview of the Firm’s business segment capital allocation methodology, see page 90 of the 2019 Form 10-K

Notes on slide 19 – Net interest income – we are not immune to the rate environment, but growth and mix will support NII in 2020 and beyond

1. See note 1 on slide 26
2. JPMorgan Chase's outlook is based on implied rate curves as of February 21, 2020

Notes on slide 20 – Noninterest revenue – steady growth in volume-driven NIR

1. See note 1 on slide 26
2. Other includes PE gains/(losses), securities gains/(losses), credit adjustments, FX, gain/(losses) in CIB including Day 1 gains from Tradeweb, gains/(losses) on HL loan sales, card rewards liability adjustment, MSR risk-management revenue gains/(losses) and other non-core items
3. Firmwide mortgage origination volume was \$115.9 billion and \$86.9 billion for the years ended December 31, 2019 and 2018, respectively
4. CIB Markets revenue includes both NII and NIR

Notes on slide 21 – Overhead ratio – significant improvement driven by revenue growth and expense efficiencies

1. See note 1 on slide 26
2. See note 3 on slide 26

Notes on slide 22 – Noninterest expense – we expect a reduction in structural expenses to help fund our investment growth

1. See note 3 on slide 26
2. Includes compensation expense related to increased hiring of revenue-producing bankers

Notes on slide 23 – Credit – we remain vigilant despite a benign environment

1. Reflects net charge-offs/(recoveries) on average retained loans, and excludes the impact of PCI loans and write-offs in the PCI portfolio. See Note 4 on slide 26. The net charge-off/(recovery) rates including the impact of PCI loans were as follows: Home Lending, (0.05)%; and Firmwide, 0.60%
2. Excludes the impact of retail overdraft losses. CBB's reported NCO rate, including retail overdraft losses was 1.11% in 2019