

2017 MID-CYCLE STRESS TEST DISCLOSURE

Dodd-Frank Act Stress Test Results
JPMorgan Chase Severely Adverse Scenario

October 20, 2017

Agenda

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Overview

This 2017 Mid-Cycle Stress Test Disclosure presents results of the mid-cycle stress test conducted by JPMorgan Chase & Co. (“JPMorgan Chase” or the “Firm”) in accordance with the regulation, issued by the Board of Governors of the Federal Reserve System (the “Federal Reserve”), which implements the Dodd-Frank Act stress testing (“DFAST”) requirements for covered companies. The results reflect certain forecasted financial measures for the nine-quarter projection period (Q3 2017 through Q3 2019) under a Severely Adverse scenario internally developed by JPMorgan Chase’s economists (“JPMorgan Chase Severely Adverse scenario”).

The results presented were calculated using forecasting models and methodologies developed and employed by JPMorgan Chase. The risks captured in JPMorgan Chase’s 2017 Mid-Cycle DFAST stress test, as well as the methodologies and processes used to execute the stress test, are substantially consistent with those that were used by the Firm to perform the 2017 Comprehensive Capital Analysis and Review (“CCAR”), the results of which were disclosed in the Firm’s 2017 Annual Stress Test Disclosure presentation dated June 22, 2017.

The results presented here reflect specific assumptions regarding planned capital actions as prescribed by the Federal Reserve’s requirements starting with the second quarter of the projection period (“DFAST capital actions”)¹:

- Common stock dividend payments are assumed to continue at the same dollar amount as the average of the prior four quarters (Q4 2016 – Q3 2017) and include common stock dividends attributable to issuances related to employee compensation
- Scheduled dividend, interest, or principal payments for other capital instruments are assumed to be paid
- Repurchases of common stock and redemptions of other capital instruments are assumed to be zero
- Issuances of preferred or common stock, other than issuances of common stock related to employee compensation, are assumed to be zero

The results presented here represent hypothetical estimates under the JPMorgan Chase Severely Adverse scenario, which reflects an economic outcome that is more adverse than expected, and do not represent JPMorgan Chase’s forecasts of expected gains, losses, pre-provision net revenue, net income before taxes, capital, risk-weighted assets (“RWA”), or capital ratios.

¹ The first quarter of the nine quarter projection period (Q3 2017) reflects actual capital actions (e.g., actual common stock dividends and repurchases net of issuances)

DFAST results under the JPMorgan Chase Severely Adverse scenario

Capital and RWA projections

2017 MID-CYCLE STRESS TEST SEVERELY ADVERSE SCENARIO RESULTS

Firm-calculated projected stressed capital ratios¹ (Q3 2017 – Q3 2019)

	Actual Q2 2017	2017 Mid-Cycle / Regulatory Minimums			Stressed capital ratios ²	
		2017	2018	Q3 2019	Q3 2019	Minimum
Common equity tier 1 capital ratio (%)	12.6%	4.5%	4.5%	4.5%	8.8%	7.9%
Tier 1 risk-based capital ratio (%)	14.4%	6.0%	6.0%	6.0%	10.5%	9.4%
Total risk-based capital ratio (%)	16.4%	8.0%	8.0%	8.0%	12.9%	11.4%
Tier 1 leverage ratio (%)	8.5%	4.0%	4.0%	4.0%	6.6%	6.4%
Supplementary leverage ratio (%) ³	n/a	n/a	3.0%	3.0%	5.2%	5.0%

¹ All regulatory capital ratios are calculated in accordance with the transition arrangements provided in the Federal Reserve's revised capital framework, issued in July 2013, and using the definitions of capital, risk-weighted assets, leverage assets (for the tier 1 leverage ratio), and supplementary leverage exposures (for the supplementary leverage ratio), that are in effect during the applicable quarter of the planning horizon. For additional information on Basel III, see Capital Risk Management on pages 76 - 85 of JPMorgan Chase's Annual Report on Form 10-K for the year ended December 31, 2016, and pages 42 - 48 of the Firm's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017

² The minimum capital ratio represents the lowest calculated stressed capital ratio during the period Q3 2017 to Q3 2019

³ The supplementary leverage ratio ("SLR"), defined as tier 1 capital divided by total leverage exposure, will become a minimum capital ratio requirement for firms subject to the advanced approaches capital framework on January 1, 2018. Pursuant to the 2017 CCAR instructions, bank holding companies subject to the advanced approaches capital framework, including JPMorgan Chase, must demonstrate an ability to maintain a SLR above 3 percent in each of the quarters of the planning horizon corresponding to Q1 2018 to Q3 2019

Firm-calculated projected risk-weighted assets (Q3 2019)

	Actual Q2 2017	Projected Q3 2019
Risk-weighted assets (billions of dollars) ¹	\$1,479	\$1,498

¹ Risk-weighted assets are calculated under the Basel III standardized capital risk-based approach

DFAST results under the JPMorgan Chase Severely Adverse scenario

Profit & Loss projections

Firm-calculated 9-quarter cumulative projected losses, revenues, net income before taxes, and other comprehensive income (Q3 2017 – Q3 2019)

	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	\$54.2	2.2%
Other revenue ³	0.0	
<i>less</i>		
Provision for loan and lease losses	58.1	
Realized losses/(gains) on securities (AFS/HTM)	0.6	
Trading and counterparty losses ⁴	28.3	
Other losses/(gains) ⁵	2.7	
<i>equals</i>		
Net income before taxes	(\$35.4)	(1.4%)
Memo items		
<i>Other comprehensive income</i> ⁶	(\$3.3)	
<i>Other effects on capital</i>	<i>Actual Q2 2017</i>	<i>Q3 2019</i>
<i>Accumulated other comprehensive income ("AOCI") in capital (billions of dollars)</i> ⁷	(\$0.1)	(\$1.6)

Note: Numbers may not sum due to rounding

¹ Average assets is the nine-quarter average of total assets (Q3 2017 through Q3 2019)

² Pre-provision net revenue ("PPNR") includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned ("OREO") costs

³ Other revenue includes one-time income and (expense) items not included in pre-provision net revenue

⁴ Trading and counterparty losses include mark-to-market ("MTM") and credit valuation adjustment ("CVA") losses resulting from the assumed instantaneous global market shock, and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities

⁵ Other losses/(gains) includes projected changes in fair value of loans held for sale ("HFS") and the fair value option ("FVO") loans

⁶ Other comprehensive income ("OCI") includes net unrealized losses/gains on (a) available-for-sale ("AFS") securities and on any held-to-maturity ("HTM") securities that have experienced other than temporary impairment ("OTTI"), (b) foreign currency translation adjustments, (c) cash flow hedges, and (d) net losses and prior service costs related to defined benefit pension and other postretirement employee benefit ("OPEB") plans

⁷ JPMorgan Chase, as an advanced approach bank holding company ("BHC"), is required by the capital rules under Basel III to transition AOCI related to (a) AFS securities and (b) defined benefit pension and OPEB plans into projected regulatory capital. Under these rules, the transition arrangements for AOCI included in projected regulatory capital are 80 percent for full year 2017 and 100 percent for full year 2018 and beyond

DFAST results under the JPMorgan Chase Severely Adverse scenario

Loan loss projections

Firm-calculated 9-quarter cumulative projected loan losses, by type of loan (Q3 2017 – Q3 2019)

	Billions of dollars	Portfolio loss rates (%) ¹
Loan Losses	\$44.4	5.0 %
First lien mortgages, domestic	3.6	1.5
Junior liens and HELOCs, domestic	4.1	10.9
Commercial & industrial ²	9.0	5.9
Commercial real estate, domestic	3.9	3.6
Credit cards	20.2	15.6
Other consumer ³	1.3	2.2
Other ⁴	2.4	1.5

- For purposes of this disclosure, loan losses and loss rates are calculated to be consistent with the Federal Reserve's methodology⁵, which includes impairments in the purchased credit-impaired ("PCI") portfolios as part of loan losses (rather than being included as part of loan loss reserves)

Note: Numbers may not sum due to rounding

¹ Average loan balances used to calculate portfolio loss rates exclude HFS loans and FVO loans, and are calculated over the nine-quarter period

² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards

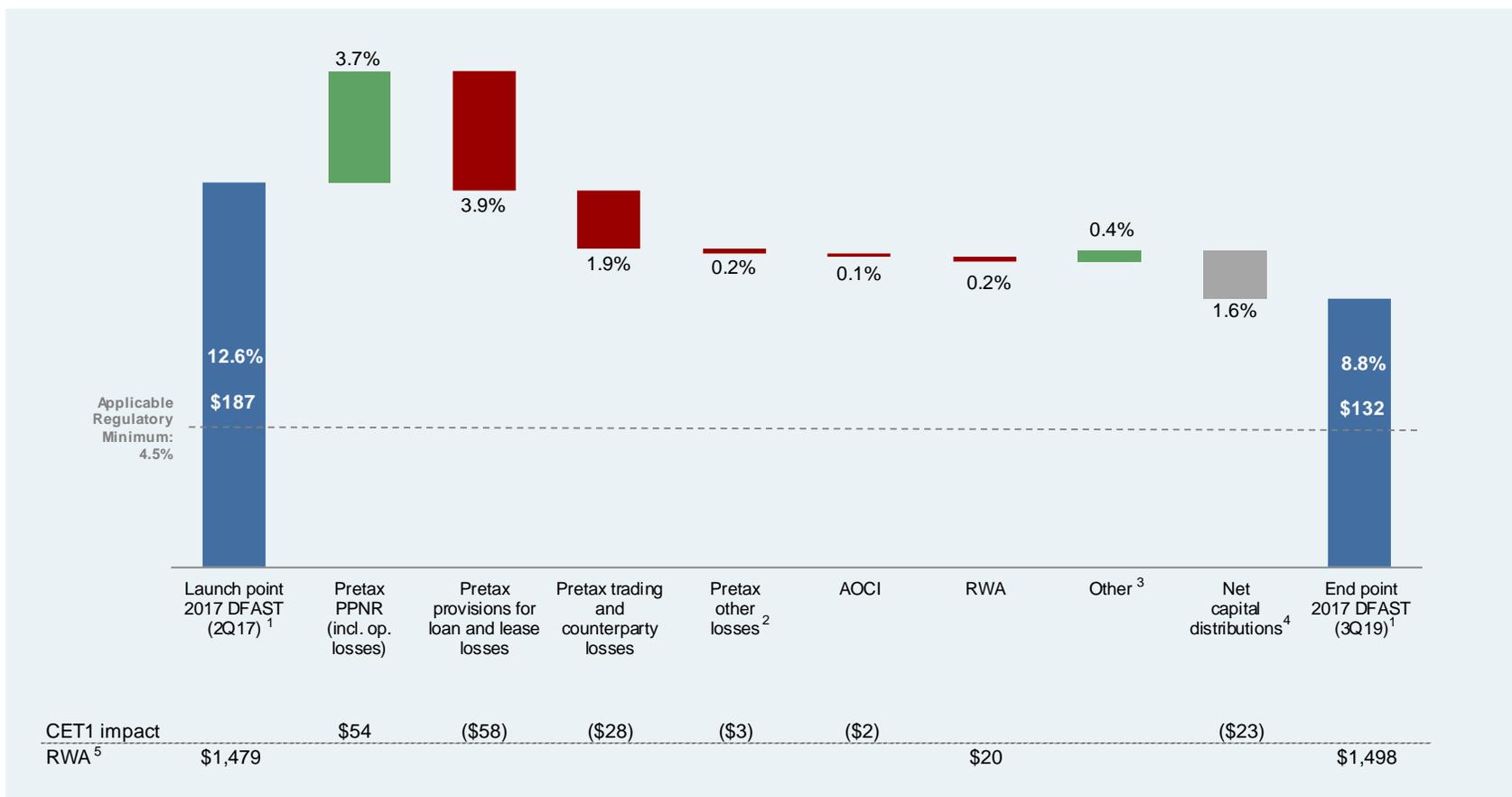
³ Other consumer loans include student loans and automobile loans

⁴ Other loans include loans to financial institutions

⁵ As described in the Federal Reserve's Dodd-Frank Act Stress Test 2017: Supervisory Stress Test Methodology and Results published on June 22, 2017

Key drivers of JPMorgan Chase's DFAST pro forma CET1 ratio

Firm-calculated CET1 ratio calculated under JPMorgan Chase Severely Adverse scenario (billions of dollars)



Note: Numbers may not sum due to rounding

¹ Q2 2017 and Q3 2019 reflect end-of-period amounts. Other amounts represent the cumulative nine-quarter impact (Q3 2017 – Q3 2019)

² Includes projected changes in fair value of HFS loans and FVO loans

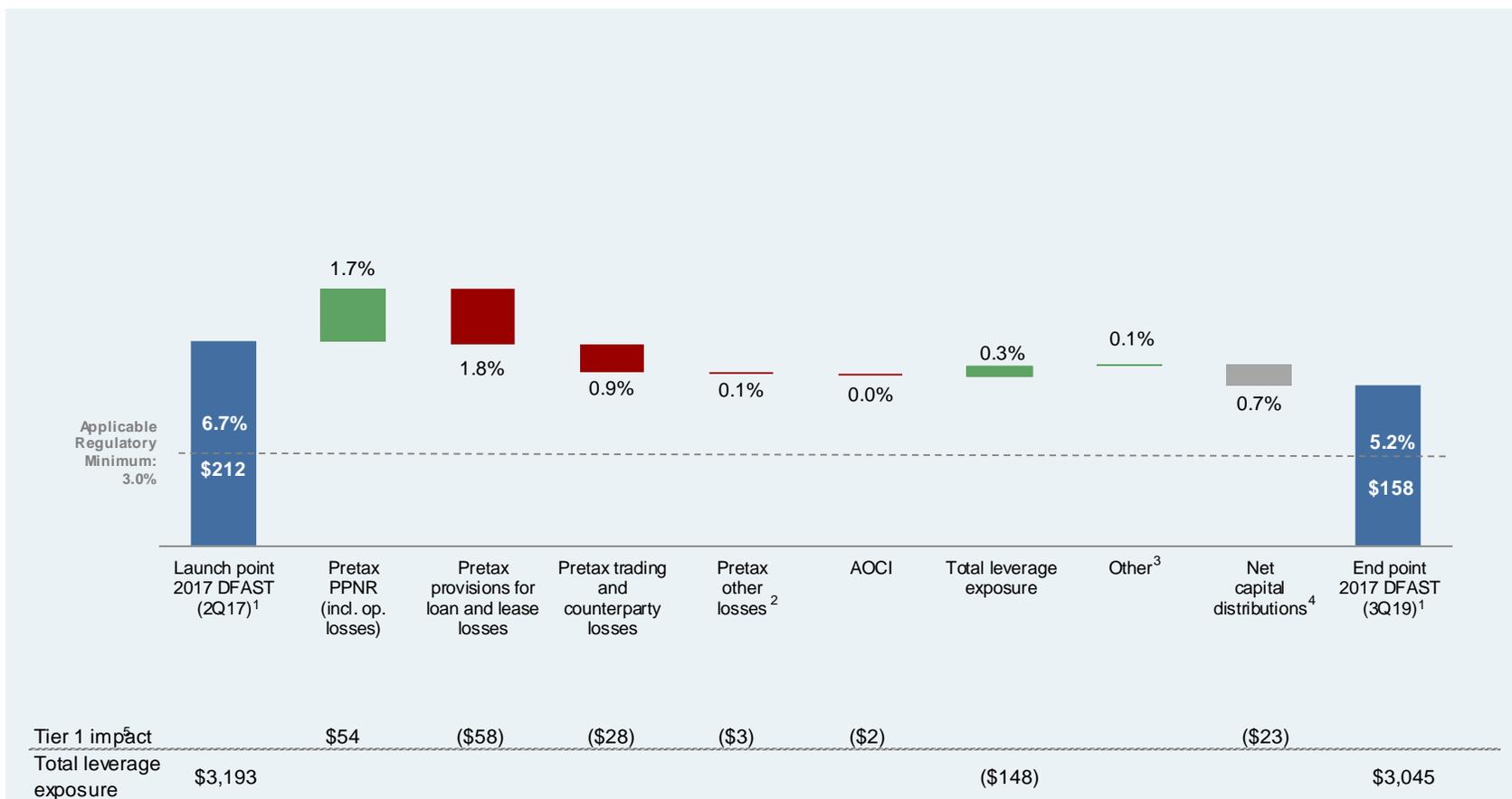
³ Represents other items, including income taxes, securities losses/gains, and goodwill and intangibles net of related deferred tax liabilities

⁴ Per the FRB Company Run Stress Test Requirement (12 CFR 252, subpart F), net capital distributions in the first quarter of the projection period (Q3 2017) reflect actual capital actions (e.g., actual amount of common stock dividends and repurchases net of issuances); the second through the ninth quarters (Q4 2017 – Q3 2019) assume: common stock dividend payments continue at the same dollar amount as the average of the prior four quarters (Q4 2016 – Q3 2017) and include common stock dividends attributable to issuances related to employee compensation; scheduled dividend, interest, or principal payments for other capital instruments are paid; repurchases of common stock and redemptions of other capital instruments are zero; issuances of preferred or common stock, other than issuances of common stock related to employee compensation, are zero

⁵ Risk-weighted assets are calculated under the Basel III standardized capital risk-based approach

Key drivers of JPMorgan Chase's DFAST pro forma SLR

Firm-calculated SLR ratio calculated under JPMorgan Chase Severely Adverse scenario (billions of dollars)



Note: Numbers may not sum due to rounding

¹ Q2 2017 and Q3 2019 reflect end-of-period amounts. Other amounts represent the cumulative nine-quarter impact (Q3 2017 – Q3 2019)

² Includes projected changes in fair value of HFS loans and FVO loans

³ Represents other items, including income taxes, securities losses/gains, and goodwill and intangibles net of related deferred tax liabilities

⁴ Per the FRB Company Run Stress Test Requirement (12 CFR 252, subpart F), net capital distributions in the first quarter of the projection period (Q3 2017) reflect actual capital actions (e.g., actual amount of common stock dividends and repurchases net of issuances); the second through the ninth quarters (Q4 2017 – Q3 2019) assume: common stock dividend payments continue at the same dollar amount as the average of the prior four quarters (Q4 2016 – Q3 2017) and include common stock dividends attributable to issuances related to employee compensation; scheduled dividend, interest, or principal payments for other capital instruments are paid; repurchases of common stock and redemptions of other capital instruments are zero; issuances of preferred or common stock, other than issuances of common stock related to employee compensation, are zero

⁵ Total leverage exposures are calculated under the Basel III standardized capital risk-based approach

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Overview of capital adequacy assessment processes

- Both CCAR and DFAST stress tests are components of the Firm's Internal Capital Adequacy Assessment Process ("ICAAP")
- Capital adequacy assessment processes are used to evaluate the Firm's capital adequacy by providing management with a view of the impact of severe and unexpected events on earnings, balance sheet positions, reserves, and capital
 - A broad range of macroeconomic factors, interest rate sensitivities, market stresses, and idiosyncratic risks and events are assessed
- Results are assessed relative to internal capital management policies and regulatory capital requirements, and are used in capital and risk management decisions

Key Features

- Semi-annual process
- Centrally-defined economic scenarios applied uniformly across the Firm
 - CCAR: Three scenarios defined by the Federal Reserve, and at least one stress scenario defined by JPMorgan Chase's economists
 - Mid-Cycle Stress Test: Three scenarios defined by JPMorgan Chase's economists
- Granular approach; forecasts and projections developed at the portfolio or line of business ("LOB") level
- Ongoing governance of the Firm's model and non-model estimation methods policies, including but not limited to development, testing, documentation, inventory, validation, and on-going performance assessments
- Forecasting results independently assessed by the Central Challenger team within the Firm's Regulatory Capital Management Office ("RCMO")
- Results projected over 2+ year time horizon

Key Resources

- Draws on the collective expertise and resources of the Firm (e.g., people, systems, technology, and control functions)
- Leverages employees across LOBs and Firmwide functions, many of whom carry out ICAAP and risk management processes as part of their core responsibilities
- Centrally coordinated and supervised by Corporate Capital Stress Testing group within RCMO

Overall results reviewed with the Firm's Capital Governance Committee and Board of Directors

Capital adequacy assessment governance and control processes

- Capital adequacy, including stress testing, is central to JPMorgan Chase’s business strategy and as such is subject to oversight at the most senior levels of the Firm – the CCAR and Mid-Cycle stress tests are subject to this governance framework as appropriate

Governance and control processes

Board of Directors	<ul style="list-style-type: none"> ■ Reviews results of the capital adequacy assessment, which encompasses the effectiveness of the capital adequacy process, the appropriateness of the risk tolerance levels, and the robustness of the control infrastructure ■ Approves capital management policies ■ Approves annual capital plan
Capital Governance Committee	<ul style="list-style-type: none"> ■ Governs the capital adequacy assessment process, including the overall design, assumptions, and risk streams incorporated in the process, and is responsible for ensuring that capital stress test programs are designed to adequately capture the idiosyncratic risks across the Firm’s businesses
Regulatory Capital Management Office	<ul style="list-style-type: none"> ■ Manages and administers the capital adequacy assessment process, including maintaining the Firm’s capital management policy ■ Conducts independent risk-based assessments of the capital adequacy assessment forecasts with the purpose of providing transparency and escalation to the appropriate governing bodies ■ Establishes and oversees the control framework for the capital adequacy assessment process, including: <ul style="list-style-type: none"> ■ Centrally-provided training and guidance ■ Senior-level steering committee meetings ■ Risk and Control Self-Assessments, in coordination with the Firmwide Oversight and Control function ■ Assessment of the integrity of the Firm’s end-to-end capital planning processes
LOB Chief Financial / Risk Officers	<ul style="list-style-type: none"> ■ Responsible for the results of the capital stress testing process for their respective LOB, including adherence to Firmwide guidelines ■ Manages execution of LOB quality control and assurance processes in accordance with established control standards ■ Formally attests to LOB capital stress testing control processes, results, and supporting documentation
Model Risk Governance & Review	<ul style="list-style-type: none"> ■ Establishes and manages the on-going governance of the Firm’s model and non-model estimation methods policies including but not limited to development, testing, documentation, inventory, validation, and on-going performance assessments
Internal Audit	<ul style="list-style-type: none"> ■ Conducts a program of audit coverage to evaluate the adequacy and effectiveness of the internal controls supporting the Firm’s capital planning

Capital management objectives and assessment of results

JPMorgan Chase's capital management objectives are to hold capital sufficient to:

- Maintain "well-capitalized" status according to the regulatory framework applicable to the Firm and its principal bank subsidiaries
- Support risks underlying business activities
- Maintain sufficient capital in order to continue to build and invest in the Firm's businesses through the cycle and in stressed environments
- Retain flexibility to take advantage of future investment opportunities
- Serve as a source of strength to its subsidiaries
- Meet capital distribution objectives
- Maintain sufficient capital resources to operate throughout a resolution period in accordance with the Firm's preferred resolution strategy

Firmwide capital ratios are assessed relative to:

- Applicable regulatory standards
- CCAR guidelines established by the Federal Reserve
- Internal capital management policies

*Results
inform*

Capital management decisions:

- Through the cycle business growth and investment
- Sustainable, upward-trending dividends
- Issuance/redemption plans across capital structure
- Balance sheet management and strategy

Key risks captured in capital adequacy assessment projections

The below risks are those inherent in JPMorgan Chase's business activities. The results of the Firm's capital stress tests reflect these risks:

Economic risks	
Capital	<ul style="list-style-type: none"> The risk the Firm has an insufficient level and composition of capital to support the Firm's business activities and associated risks during normal economic environments and stressed conditions
Credit	<ul style="list-style-type: none"> The risk of loss arising from the default of a customer, client, or counterparty
Country	<ul style="list-style-type: none"> The risk that a sovereign event or action alters the value or terms of contractual obligations of obligors, counterparties and issuers or adversely affects markets related to a particular country
Liquidity	<ul style="list-style-type: none"> The risk that the Firm will be unable to meet its contractual and contingent obligations or that it does not have the appropriate amount, composition, and tenor of funding and liquidity to support its assets and liabilities
Market	<ul style="list-style-type: none"> The risk of loss arising from potential adverse changes in the value of the Firm's assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices, implied volatilities or credit spreads; this includes the structural interest rate and foreign exchange risks managed on a firmwide basis in Treasury and Chief Investment Office ("CIO")
Principal	<ul style="list-style-type: none"> The risk of an adverse change in the value of privately-held financial assets and instruments, typically representing an ownership or junior capital position that have unique risks due to their illiquidity or for which there is less observable market or valuation data
Other core risks	
Compliance ¹	<ul style="list-style-type: none"> The risk of failure to comply with applicable laws, rules, and regulations
Conduct ¹	<ul style="list-style-type: none"> The risk that an employee's action or inaction causes undue harm to the Firm's clients, damages market integrity, undermines the Firm's reputation, or negatively impacts the Firm's culture
Legal ¹	<ul style="list-style-type: none"> The risk of loss or imposition of damages, fines, penalties or other liability arising from failure to comply with a contractual obligation or to comply with laws, rules or regulations to which the Firm is subject
Model ¹	<ul style="list-style-type: none"> The risk of the potential for adverse consequences from decisions based on incorrect or misused model outputs
Operational	<ul style="list-style-type: none"> The risk of loss resulting from inadequate or failed processes or systems, human factors, or due to external events that are neither market nor credit-related
Reputation ²	<ul style="list-style-type: none"> The risk that an action, transaction, investment or event will reduce trust in the Firm's integrity or competence by its various constituents, including clients, counterparties, investors, regulators, employees, and the broader public

Source – Enterprise-Wide Risk Management on page 72 of JPMorgan Chase's 2016 Form 10-K

¹ Compliance, Conduct, Legal and Model risks are captured through the Firm's operational loss forecasting framework

² Reputation risk is less quantifiable than other risks. Actual losses from historical events that may have caused reputation risk are captured through the Firm's operational loss forecasting framework. However, the entirety of the reputation risk impact may not be quantifiable

Key risks by business activity captured in capital adequacy assessment projections

	Business activities	Key risks
Consumer & Community Banking	<ul style="list-style-type: none"> ■ Consumer & Business Banking <ul style="list-style-type: none"> ■ Consumer Banking / Chase Wealth Management ■ Business Banking ■ Mortgage Banking <ul style="list-style-type: none"> ■ Mortgage Production ■ Mortgage Servicing ■ Real Estate Portfolios ■ Card, Commerce Solutions & Auto 	<ul style="list-style-type: none"> ■ Credit ■ Liquidity ■ Market ■ Principal ■ Model <ul style="list-style-type: none"> ■ Operational, legal, and compliance
Corporate & Investment Bank	<ul style="list-style-type: none"> ■ Banking <ul style="list-style-type: none"> ■ Investment Banking ■ Treasury Services ■ Lending ■ Markets & Investor Services <ul style="list-style-type: none"> ■ Fixed Income / Equity Markets ■ Securities Services ■ Credit Adjustments & Other 	<ul style="list-style-type: none"> ■ Credit ■ Liquidity ■ Market ■ Principal ■ Model <ul style="list-style-type: none"> ■ Operational, legal, and compliance ■ Country
Commercial Banking	<ul style="list-style-type: none"> ■ Middle Market Banking ■ Corporate Client Banking ■ Commercial Term Lending ■ Real Estate Banking 	<ul style="list-style-type: none"> ■ Credit ■ Liquidity ■ Market ■ Principal ■ Model <ul style="list-style-type: none"> ■ Operational, legal, and compliance ■ Country
Asset & Wealth Management	<ul style="list-style-type: none"> ■ Asset Management ■ Wealth Management 	<ul style="list-style-type: none"> ■ Credit ■ Liquidity ■ Market ■ Principal ■ Model <ul style="list-style-type: none"> ■ Operational, legal, and compliance ■ Country
Corporate	<ul style="list-style-type: none"> ■ CIO and Treasury ■ Other Corporate 	<ul style="list-style-type: none"> ■ Credit ■ Liquidity ■ Market¹ ■ Principal ■ Capital ■ Model <ul style="list-style-type: none"> ■ Operational, legal, and compliance ■ Country

¹ Includes the Firm's structural interest rate and non-USD FX risks which arise from activities undertaken by its four major reportable business segments and is centrally managed by CIO and Treasury within Corporate

Capital and risk components captured in capital adequacy assessment projections

- Quantitative approach applied across all scenarios; non-model estimation also a critical component of process
 - Approach employs econometric models and historical regressions where appropriate

CAPITAL ADEQUACY ASSESSMENT PROCESSES AND RISK METHODOLOGIES

	Key risks captured	Capital components
1 Capital (Earnings)	<ul style="list-style-type: none"> ■ Revenue depletion and expense volatility associated with Firm's business activities and products. Risks include: <ul style="list-style-type: none"> ■ Interest rate duration ■ Equity prices ■ Mortgage repurchase ■ FX ■ Basis ■ Convexity ■ Prepayment ■ Credit-related OTTI ■ Changes in credit spreads ■ Operational, legal, and compliance 	<p>PPNR</p> <ul style="list-style-type: none"> ■ Product-centric models and forecasting frameworks for revenue forecasts based on JPMorgan Chase's historical experience supplemented by industry data and non-model estimation, where appropriate ■ Granular, LOB-level projections for expense forecasts, governed by Firmwide expense reduction guidelines for severe stress environments ■ Projections reflect macroeconomic factors, anticipated client behavior, and business activity, among other factors <p>Gains/losses on securities</p> <ul style="list-style-type: none"> ■ Projections of gains/losses on AFS and HTM positions <p>Losses on HFS/FVO loans</p> <ul style="list-style-type: none"> ■ Projections of changes in valuations of HFS loans and loans accounted for under FVO
2 Credit	<ul style="list-style-type: none"> ■ Credit risks, which are impacted by: <ul style="list-style-type: none"> ■ Probability of obligor or counterparty downgrade or default, or sovereign rating downgrade or default ■ Loan transition to different payment status (i.e., current, delinquent, default) and risk grade ■ Loss severity ■ Changes in exposure at default including utilization of commitments 	<p>Provision for loan and lease losses</p> <ul style="list-style-type: none"> ■ Projections of net charge-offs, reserves, and loan balances based on composition and characteristics of wholesale and consumer loan portfolios across: <ul style="list-style-type: none"> ■ Wholesale – sector, region, and risk rating segments ■ Consumer – loan level, asset class, and behavioral segments
3 Market	<ul style="list-style-type: none"> ■ Market risk factors including directional exposure, volatility, basis, and issuer default risk ■ Impact on credit valuation adjustments ■ Probability of derivatives and securities financing transactions ("SFT") counterparty defaults 	<p>Trading & counterparty losses (market shock)</p> <ul style="list-style-type: none"> ■ Projections of the effect of instantaneous market shocks on trading positions ■ Losses are reflected in first quarter of projection period
4 RWA	<ul style="list-style-type: none"> ■ Market risk factors including directional exposure, volatility, basis, and structural risk ■ Credit risk factors affecting balances, including probability of obligor or counterparty downgrade or default, or country risk classification downgrade 	<ul style="list-style-type: none"> ■ Projections of Basel III standardized RWA
5 AOCI	<ul style="list-style-type: none"> ■ Market risk factors including interest rates, FX, and credit spreads 	<ul style="list-style-type: none"> ■ AOCI projections account for amortization, callability, and maturity ■ Reflects application of Basel III standardized transitional provisions
Capital	<ul style="list-style-type: none"> ■ Capital projections reflect: <ul style="list-style-type: none"> ■ Balance sheet management strategies ■ DFAST capital actions prescribed by the Federal Reserve's requirements 	

1 Risks embedded in earnings – PPNR

Scope	<ul style="list-style-type: none"> ■ Represents total net revenue less noninterest expense; includes operational risk expense and excludes credit costs 			
Approach	<ul style="list-style-type: none"> ■ Granular forecast across all products by individual PPNR component <ul style="list-style-type: none"> ■ Loan balances, deposits, net interest income (“NII”), trading revenue, fee revenue, compensation expense, operational losses, and other expense ■ Projections capture variability of spreads, pricing, prepayments, basis movement, etc., observed in the underlying economic scenarios ■ Projections reflect potential exposure due to failed processes or systems, external events, or resulting from fines, penalties or other liabilities arising from failure to comply with a contractual obligation or applicable laws or regulations 			
Types of risks identified and captured	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 33%;"> <ul style="list-style-type: none"> ■ Market <ul style="list-style-type: none"> ■ Sales & trading revenue ■ Investment banking revenue ■ Asset and Wealth management revenue ■ Investment services revenue ■ Principal investments gains and losses </td> <td style="vertical-align: top; width: 33%;"> <ul style="list-style-type: none"> ■ Structural interest rate <ul style="list-style-type: none"> ■ Consumer and wholesale deposit NII ■ Consumer and wholesale loan NII ■ Investment securities NII </td> <td style="vertical-align: top; width: 33%;"> <ul style="list-style-type: none"> ■ Mortgage servicing rights (“MSR”) valuation ■ Prepayment <ul style="list-style-type: none"> ■ Residential and commercial lending revenue ■ Operational, legal, and compliance <ul style="list-style-type: none"> ■ Operational losses </td> </tr> </table>	<ul style="list-style-type: none"> ■ Market <ul style="list-style-type: none"> ■ Sales & trading revenue ■ Investment banking revenue ■ Asset and Wealth management revenue ■ Investment services revenue ■ Principal investments gains and losses 	<ul style="list-style-type: none"> ■ Structural interest rate <ul style="list-style-type: none"> ■ Consumer and wholesale deposit NII ■ Consumer and wholesale loan NII ■ Investment securities NII 	<ul style="list-style-type: none"> ■ Mortgage servicing rights (“MSR”) valuation ■ Prepayment <ul style="list-style-type: none"> ■ Residential and commercial lending revenue ■ Operational, legal, and compliance <ul style="list-style-type: none"> ■ Operational losses
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Methodologies	<ul style="list-style-type: none"> ■ Econometric and regression models and forecasting frameworks used, as appropriate, to establish relationships between macroeconomic factors and JPMorgan Chase’s historical experience ■ P&L and on- and off-balance sheet projections capture: <ul style="list-style-type: none"> ■ Interest rate, FX, and basis risks through projections of JPMorgan Chase’s core nontrading business activities ■ Investment risk from principal investments ■ Expense management actions driven by the underlying economic factors ■ Operational loss projections are based on the relationship between macroeconomic variables and JPMorgan Chase’s historical loss experience where appropriate, as well as scenario analysis to capture potential exposures more aligned to the Firm’s current risk profile 			
Non-model estimations	<ul style="list-style-type: none"> ■ Non-model estimation is applied, including: <ul style="list-style-type: none"> ■ To define key business assumptions/inputs <ul style="list-style-type: none"> – Assumptions related to business activities (e.g., market size, market share, and trading flows) – Assumptions surrounding expense levels in a stressed environment ■ As the primary method to produce projections when statistical models cannot be used due to limited or insufficient data, or when components are not sensitive to changes in the economic environment 			

1 Risks embedded in earnings – Gains/losses on AFS & HTM securities

Scope	<ul style="list-style-type: none"> ■ Represents OTTI on the investment securities portfolio
Approach	<ul style="list-style-type: none"> ■ Investment securities are assessed for OTTI, and OTTI is recognized when the Firm determines that it does not expect to recover the entire amortized cost of an investment security ■ Separate methodologies developed for individual asset classes ■ Assumes no securities are sold throughout the forecast period
Types of risks identified and captured	<ul style="list-style-type: none"> ■ Potential credit-related OTTI ■ Credit risks, which are impacted by estimates of the probability of default, loss given default, and prepayment assumptions
Methodologies	<ul style="list-style-type: none"> ■ The methodologies used to assess the portfolio include: <ul style="list-style-type: none"> ■ Issuer credit migrations for non-securitized products (e.g., corporate debt, non-U.S. government debt, and municipal bonds) ■ Cash flow model-based methodology used for securitized products <ul style="list-style-type: none"> – Cash flows are projected to identify any principal shortfalls
Non-model estimations	<ul style="list-style-type: none"> ■ Non-model estimation is applied to determine key inputs/assumptions used in the projection of OTTI in lieu of statistical models where there is limited or insufficient data for certain securities, including: <ul style="list-style-type: none"> ■ Default rates; ■ Recovery rates; and ■ Prepayment rates for certain securitized products

1 Risks embedded in earnings – Losses on HFS loans and FVO loans

Scope	<ul style="list-style-type: none"> ■ Represents changes in valuation of HFS loans and commitments pending syndication, as well as loans accounted for under FVO in the Firm’s wholesale loan portfolio
Approach	<ul style="list-style-type: none"> ■ Projections are based on the estimated change in value of loans and commitments (i.e., lower of cost or fair value for HFS loans, and fair value for FVO loans)
Types of risks identified and captured	<ul style="list-style-type: none"> ■ Market risk resulting from changes in credit spreads ■ Credit risk resulting from default
Methodologies	<ul style="list-style-type: none"> ■ Projections capture the Firm’s exposure to changes in the fair value of HFS/FVO loans primarily due to credit spreads based on facility rating
Non-model estimations	<ul style="list-style-type: none"> ■ Non-model estimation is applied, including: <ul style="list-style-type: none"> ■ To estimate the timing and extent of funding a pending syndication ■ To estimate the timing of pending sales over the nine-quarter forecast horizon

2 Credit risk – Provision for loan and lease losses

Scope	<ul style="list-style-type: none"> ■ Represents losses inherent in the Firm’s retained loans portfolios and related commitments
Approach	<ul style="list-style-type: none"> ■ Provision projections based on composition and characteristics of wholesale and consumer loan portfolios across all asset classes and customer segments <ul style="list-style-type: none"> ■ Considers estimated delinquencies, charge-offs/recoveries, and changes in reserves ■ Risks assessed on a risk-rated basis for the wholesale portfolio and on a scored basis for the consumer portfolio <ul style="list-style-type: none"> ■ The consumer loan portfolio excludes certain risk-rated business banking and auto dealer loans which are included in the wholesale loan portfolio¹
Types of risks identified and captured	<ul style="list-style-type: none"> ■ Credit risk impacted by: <ul style="list-style-type: none"> ■ Probability of obligor or counterparty downgrade or default, or sovereign rating downgrades or default ■ Loan transition to different payment statuses (i.e., current, delinquent, default) and risk grade ■ Loss severity ■ Changes in exposure at default including utilization of commitments
Methodologies	<ul style="list-style-type: none"> ■ Model-based approach, which captures the inherent, idiosyncratic risks that are unique to the Firm’s portfolios <ul style="list-style-type: none"> ■ Reflects credit migration and changes in delinquency trends driven by the underlying economic factors (e.g., U.S. gross domestic product (“GDP”), unemployment rate, house price index (“HPI”)) which influence the frequency and severity of potential losses ■ Considers characteristics such as credit rating, geographic distribution, product and industry mix, and collateral type ■ Leverages loss experience data relevant to the Firm’s asset classes and portfolios ■ Reflects reserve levels calculated in accordance with accounting principles generally accepted in the U.S. (“U.S. GAAP”), regulatory guidelines, and the Firm’s internal accounting policies and procedures
Non-model estimations	<ul style="list-style-type: none"> ■ Non-model estimation is applied, including: <ul style="list-style-type: none"> ■ To define key business assumptions/inputs, including credit quality of new originations ■ To determine the timing of recognition of loan loss reserves builds/releases

¹ These loans are included in the wholesale portfolio for 2017 Mid-Cycle Stress Test and reported as part of the consumer portfolio in the Firm’s SEC disclosures

3 Market risk – Trading & counterparty losses (market shock)

Scope	<ul style="list-style-type: none"> Represents an instantaneous global market shock applied to trading and counterparty positions as of June 30, 2017
Approach	<ul style="list-style-type: none"> Instantaneous P&L impact with no re-hedging and no recovery assumed over the forecast period
Types of risks identified and captured	<ul style="list-style-type: none"> Market risks on trading, principal investments and other assets carried at fair value, <ul style="list-style-type: none"> Market risk factors including directional exposure, volatility, and basis risks Counterparty credit risk (“CCR”) <ul style="list-style-type: none"> CVA captures valuation adjustments which reflect counterparty credit risk Counterparty default assumes the instantaneous and unexpected default of certain derivatives and SFT counterparties as a result of the idiosyncratic counterparty default component of the JPMorgan Chase Severely Adverse scenario Trading issuer default losses (“IDL”) captures additional projected losses from the default of underlying issuers on the Firm’s trading positions
Methodologies	<ul style="list-style-type: none"> Results measure the Firm’s exposure to changes in the fair value of financial instruments primarily due to movements in: <ul style="list-style-type: none"> Interest rates FX rates Equity prices Credit spreads Commodity prices Leverages the existing Firmwide stress framework and methodologies across all LOBs Trade-level results, reflecting the instantaneous impact of the shock, are aggregated for all counterparties to produce the stressed MTM, CVA, and other credit metrics
Non-model estimations	<ul style="list-style-type: none"> No significant non-model estimation applied

4 RWA

Scope	<ul style="list-style-type: none"> ■ RWA is projected under the Basel III standardized approach
Approach	<ul style="list-style-type: none"> ■ Credit risk RWA <ul style="list-style-type: none"> ■ Projections leverage forecasted loan, securities, derivatives, and secured financing balances ■ Market risk RWA <ul style="list-style-type: none"> ■ Projections reflect relationships between RWA and key macroeconomic drivers using a combination of models and non-model estimations
Types of risks identified and captured	<ul style="list-style-type: none"> ■ Economic factors that affect the projections of underlying balances (see Gains/losses on AFS & HTM securities, Losses on HFS loans and FVO loans and Provision for loan and lease losses on pages 14, 15, and 16, respectively) ■ Market factors including market rates, spreads, and volatility levels ■ Impact of country risk classification downgrade by the Organisation for Economic Co-operation and Development (“OECD”)
Methodologies	<ul style="list-style-type: none"> ■ Credit risk RWA <ul style="list-style-type: none"> ■ Risk weights as prescribed by regulatory rules are applied to projected balances ■ Market risk RWA <ul style="list-style-type: none"> ■ Simulation calculations and forecasting frameworks used, as appropriate, to project relationships between macroeconomic factors and key RWA components, including value-at-risk-based measure (“VBM”), stressed VaR-based measure (“SVBM”), incremental risk charge (“IRC”), and comprehensive risk measure (“CRM”)
Non-model estimations	<ul style="list-style-type: none"> ■ Non-model estimation used to establish relationships between macroeconomic factors and historical country risk classification trends ■ Non-model estimation applied to the selection of macroeconomic factors used to project the behavior of VBM and SVBM, IRC/CRM, and Derivative counterparty RWA results

5 AOCI

Scope	<ul style="list-style-type: none"> ■ AOCI primarily includes the after-tax change in unrealized gains and losses on investment securities and net loss and prior service costs/(credit) related to the Firm's defined benefit pension and OPEB plans
Approach	<ul style="list-style-type: none"> ■ Projections are based on the estimated change in value of the existing portfolio and the forecasted reinvestment portfolio
Types of risks identified and captured	<ul style="list-style-type: none"> ■ Market risk factors including interest rates, FX, and credit spreads
Methodologies	<ul style="list-style-type: none"> ■ The forecasting methodologies used vary depending on the type of security to appropriately stress the underlying risks: <ul style="list-style-type: none"> ■ Full revaluation approach is used for agency mortgage-backed securities ("MBS"), municipal bonds, and U.S. Treasuries ■ Sensitivity-based approach is used for other securities and swap hedges
Non-model estimations	<ul style="list-style-type: none"> ■ Non-model estimation is applied to determine the appropriate parameters for producing spread forecasts for credit sensitive assets

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2017 Mid-Cycle Stress Test JPMorgan Chase Severely Adverse scenario – Overview

- The JPMorgan Chase internally-developed Severely Adverse scenario is characterized by a severe global recession, accompanied by a U.S. deflation shock which causes knock-on effects to developed and emerging markets
- The scenario includes a global market shock, which is an instantaneous repricing of our trading and counterparty exposures. A component of the global market shock is the idiosyncratic counterparty default which assumes an instantaneous and unexpected default of certain derivatives and SFT counterparties
- Results are forecasted over a nine-quarter planning horizon
- Results capture the impact of stressed economic and market conditions on capital and risk-weighted assets, including:
 - Potential losses on all on- and off-balance sheet positions
 - Pre-provision net revenue
 - Accumulated other comprehensive income

Key economic variables from JPMorgan Chase Severely Adverse scenario

- **U.S. real GDP** – GDP declines 5.2% between the second quarter of 2017 and its trough in the third quarter of 2018
- **U.S. inflation rate** – The annualized rate of change in the Consumer Price Index (“CPI”) drops from -0.1% in the second quarter of 2017 to -2.7% in the fourth quarter of 2017
- **U.S. unemployment rate** – Unemployment rate increases by 5.0 percentage points from its level in the second quarter of 2017, peaking at 9.3% in the first and second quarters of 2019
- **Real estate prices** – House prices decline by 22% through the second quarter of 2019 relative to their level in the second quarter of 2017; commercial real estate prices decline by 35% through the third quarter of 2019 relative to their level in the second quarter of 2017
- **Equity markets** – Equity prices decline by 59% between the second quarter of 2017 and their trough in the third quarter of 2018. Equity market volatility peaks in the first quarter of 2018
- **Short-term and long-term rates** – Short-term (3-month) Treasury rates fall to 0.0% in the fourth quarter of 2017 where they remain for the duration of the forecast period; long-term (10-year) Treasury rates trough at 1.2% in the second quarter of 2018 and rise gradually thereafter to 2.2% in the third quarter of 2019; the 30-year mortgage rate rises to 4.2% in the fourth quarter of 2017, before gradually reverting to reach 3.8% in the third quarter of 2019
- **Credit spreads** – Spreads on investment-grade corporate bonds widen to 575 basis points at their peak in the first quarter of 2018
- **International** – The international component features recessions in the Euro area, the United Kingdom, Japan, and developing Asia

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Forward-looking statements

The 2017 Mid-Cycle Stress Test Results Disclosure (the “Stress Test Results”) presented herein contains forward-looking projections that represent estimates based on the hypothetical, severely adverse economic and market scenarios and assumptions internally developed by JPMorgan Chase, as described herein. The Stress Test Results do not represent JPMorgan Chase's forecasts of actual expected gains, losses, pre-provision net revenue, net income before taxes, capital, risk-weighted assets (“RWA”), or capital ratios. JPMorgan Chase’s actual future financial results will be influenced by actual economic and financial conditions and various other factors as described in its reports filed with the Securities and Exchange Commission (“SEC”), which are available on JPMorgan Chase’s website (<http://investor.shareholder.com/jpmorganchase/sec.cfm>), and on the Securities and Exchange Commission’s website (www.sec.gov).