

JPMORGAN CHASE & CO.

**REGULATORY CAPITAL DISCLOSURES – MARKET RISK  
PILLAR 3 REPORT**

For the quarterly period ended March 31, 2014

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## I. Executive summary

### Introduction

JPMorgan Chase & Co. (“JPMorgan Chase” or the “Firm”), a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and one of the largest banking institutions in the United States of America (“U.S.”), with operations worldwide. The Firm had \$2.5 trillion in assets and \$219.7 billion in stockholders’ equity as of March 31, 2014. The Firm is a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing, asset management and private equity. Under the J.P. Morgan and Chase brands, the Firm serves millions of customers in the U.S. and many of the world’s most prominent corporate, institutional and government clients.

JPMorgan Chase’s principal bank subsidiaries are JPMorgan Chase Bank, National Association (“JPMorgan Chase Bank, N.A.”), a national bank with U.S. branches in 23 states, and Chase Bank USA, National Association (“Chase Bank USA, N.A.”), a national bank that is the Firm’s credit card-issuing bank. JPMorgan Chase’s principal nonbank subsidiary is J.P. Morgan Securities LLC (“JPMorgan Securities”), the Firm’s U.S. investment banking firm. The bank and nonbank subsidiaries of JPMorgan Chase operate nationally as well as through overseas branches and subsidiaries, representative offices and subsidiary foreign banks. One of the Firm’s principal operating subsidiaries in the United Kingdom (“U.K.”) is J.P. Morgan Securities plc, a subsidiary of JPMorgan Chase Bank, N.A.

### Basel Overview

The Federal Reserve establishes capital requirements, including well-capitalized standards, for the consolidated financial holding company. The Office of the Comptroller of the Currency (“OCC”) establishes similar capital requirements and standards for the Firm’s national banks, including JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A.

The U.S. capital requirements follow the Capital Accord of the Basel Committee, as amended from time to time. Prior to January 1, 2014, the Firm and its banking subsidiaries were subject to the capital requirements of Basel I and Basel 2.5. Effective January 1, 2014, the Firm became subject to Basel III which incorporates Basel 2.5.

### Basel III

For U.S. bank holding companies and banks, Basel III is comprised of a Standardized approach and an Advanced approach. Basel III, among other things, revises the definition of capital and introduces a new common equity Tier 1 capital requirement (“Tier 1 common”); presents two comprehensive methodologies for calculating risk-weighted assets (“RWA”), a general (Standardized) approach, which replaces Basel I RWA (“Basel I Standardized”), and an

advanced approach which replaces Basel II RWA (“Basel II Advanced”); and sets out minimum capital ratios and overall capital adequacy standards. Certain of the requirements of Basel III are subject to phase-in periods commencing January 1, 2014 through 2019 (“Transitional period”) as described below. For large and internationally active banks, including the Firm and its insured depository institution (“IDI”) subsidiaries, both Basel III Standardized and Basel III Advanced became effective commencing January 1, 2014.

For 2014, Basel III Standardized requires the Firm to calculate its capital ratios on a Basel III Standardized Transitional basis.

Prior to full implementation of Basel III Advanced, the Firm was required to complete a qualification period (“parallel run”) during which it needed to demonstrate that it met the requirements of the rule to the satisfaction of its US banking regulators. On February 21, 2014, the Federal Reserve and the OCC informed the Firm and its national bank subsidiaries that they had satisfactorily completed the parallel run requirements and is approved to calculate capital under Basel III Advanced, in addition to Basel III Standardized, as of April 1, 2014.

In addition, as a result of becoming subject to Basel III and its exit from “parallel run”, the capital adequacy of the Firm and its national bank subsidiaries will be evaluated against the Basel III approach (Standardized or Advanced) that results, for each quarter, in the lower ratio, as required by the Collins Amendment of the Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”).

### Basel III Market Risk RWA

Basel III Market Risk RWA applies to “covered positions” defined as:

- Trading assets or trading liabilities (whether on- or off-balance sheet) that meet the following conditions:
  - A trading position held for the purpose of short-term resale or with the intent to benefit from actual or expected short-term price movements, or to lock in arbitrage profits; or
  - A hedge of a covered position; and
  - A position that is free of any restrictive covenants on its tradability or where the material risk elements of the position can be hedged in a two-way market.
- All foreign exchange (“FX”), except structural foreign currency positions with supervisory approval, and commodity positions.

*Basel III specifies that characterization of an asset or liability as “trading” under U.S. GAAP would not on its own determine whether the asset or liability meets the definition of a covered position.*

This report includes disclosures required under Basel III. The disclosures included herein may differ from how disclosures on similar topics are presented in the Firm’s

Annual Reports on Form 10-K (“Form 10-K”) and Quarterly Reports on Form 10-Q (“Form 10-Q”) because these latter reports are based on applicable SEC and U.S. GAAP reporting requirements, which may differ from the requirements under Basel III. The Firm files its annual Form 10-K and quarterly Form 10-Q with the Securities and Exchange Commission (“SEC filings”), and they are available on JPMorgan Chase & Co.’s website (<http://investor.shareholder.com/jpmorganchase>) and on the Securities and Exchange Commission’s website ([www.sec.gov](http://www.sec.gov)).

#### Measures included in Basel III Market Risk RWA

The following table presents the Firm’s market risk-based capital (“RBC”) and risk-weighted assets at March 31, 2014. The components of market risk RWA are discussed in detail in the “Regulatory market risk capital models” section on pages 3–8 of this report, as indicated in the table. RWA is calculated as RBC times a multiplier of 12.5; any differences in this document are due to rounding.

March 31, 2014 (in millions)	Page Reference	Risk- based capital <sup>(c)</sup>	Risk- weighted assets
<b>Market risk capital requirement</b>			
Value-at-Risk-Based Measure (“VBM”) <sup>(a)</sup>	3	\$ 530	\$ 6,624
Stressed Value-at-Risk-Based Measure (“SVBM”) <sup>(a)</sup>	6	1,590	19,873
Incremental Risk Charge (“IRC”) <sup>(a)</sup>	6	911	11,389
Comprehensive Risk Measure (“CRM”) <sup>(a)</sup>	7	1,835	22,940
Standard Specific Risk:	8		
Securitization positions		1,331	16,635
Nonsecuritization positions		7,279	90,989
Total Standard Specific Risk		8,610	107,624
Other charges <sup>(b)</sup>	8	2,166	27,081
<b>Total</b>		<b>\$ 15,642</b>	<b>\$ 195,531</b>

- (a) Represents the capital and RWA related to positions for which the Firm has received supervisory approval for model-based capital treatment as of March 31, 2014.
- (b) Represents the capital and RWA that predominantly relates to positions for which the Firm has not received supervisory approval for model-based VBM and SVBM as of March 31, 2014.
- (c) For modeled components, RBC reflects the higher of the quarterly average and period-end spot measure under Basel III.

#### RWA rollforward

The following table presents the changes in the market risk component of RWA under Basel III Standardized Transitional for the three months ended March 31, 2014. The amounts in the rollforward categories are estimates, based on the predominant driver of the change.

Three months ended March 31, 2014 (in billions)	Market risk RWA
<b>Basel 2.5 RWA at December 31, 2013</b>	<b>\$ 165</b>
Rule changes <sup>(a)</sup>	–
Model & data changes <sup>(b)</sup>	42
Portfolio runoff <sup>(c)</sup>	(16)
Movement in portfolio levels <sup>(d)</sup>	5
<b>Change in RWA</b>	<b>31</b>
<b>Basel III Standardized Transitional RWA at March 31, 2014</b>	<b>\$ 196</b>

- (a) Rule changes refer to movements in RWA as a result of changes in regulations.
- (b) Model & data changes refer to movements in RWA as a result of revised methodologies and/or treatment per regulatory guidance (exclusive of rule changes).
- (c) Portfolio runoff for market risk RWA reflects reduced risk from position rollofs, including changes in the synthetic credit portfolio.
- (d) Movement in portfolio levels refers to changes in position and market movements.

## II. Composition of JPMorgan Chase’s material portfolio of covered positions

The Firm’s market risks arise predominantly from activities in the Firm’s Corporate & Investment Bank (“CIB”) business. CIB makes markets in products across fixed income, foreign exchange, equities and commodities markets; the positions held by the CIB comprise predominantly all the Firm’s portfolio of covered positions under Basel III. Some additional covered positions are held by the Firm’s other lines of business. For a discussion of CIB, see Business Segment Results on pages 84–85 and 98–102 of JPMorgan Chase’s Annual Report on Form 10-K for the year ended December 31, 2013 (“2013 Form 10-K”), and on pages 28–31 of JPMorgan Chase’s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2014 (“1Q14 Form 10-Q”).

## III. Value-at-Risk (“VaR”)

JPMorgan Chase has a single overarching VaR model framework used for calculating the Firm’s Regulatory Value-at-Risk (“Regulatory VaR”), and for daily risk management purposes across the Firm (“Risk Management” VaR).

VaR is a statistical risk measure, to estimate the potential loss from adverse market moves in a normal market environment consistent with the day-to-day risk decisions made by the lines of business.

An overarching “Regulatory VaR” model framework is employed across the Firm using historical simulation based on data for the previous 12 months. The framework’s approach assumes that historical changes in market values are representative of the distribution of potential outcomes in the immediate future.

Since VaR is based on historical data, it is an imperfect measure of market risk exposure and potential losses, and it is not used to estimate the impact of stressed market conditions or to manage any impact from potential stress events. In addition, based on their reliance on available

historical data, limited time horizons, and other factors, VaR measures are inherently limited in their ability to measure certain risks and to predict losses, particularly those associated with market illiquidity and sudden or severe shifts in market conditions. As VaR cannot be used to determine future losses in the Firm's market risk positions, the Firm uses stress testing and other metrics in addition to VaR to monitor and manage its market risk positions. For further information on stress testing, see "Stress tests applied to positions subject to market risk" on page 9 of this Report.

Underlying the overall VaR model framework are individual VaR models that simulate historical market returns for individual products and/or risk factors. To capture material market risks as part of the Firm's risk management framework, comprehensive VaR model calculations are performed daily for businesses whose activities give rise to market risk. These VaR models are granular and incorporate numerous risk factors and inputs to simulate daily changes in market values over the historical period; inputs are selected based on the risk profile of each portfolio as sensitivities and historical time series used to generate daily market values may be different across product types or risk management systems. The VaR model results across all portfolios are aggregated at the Firm level.

The Firm's VaR model calculations are continuously evaluated and enhanced in response to changes in the composition of the Firm's portfolios, changes in market conditions, improvements in the Firm's modeling techniques and other factors. Such changes will also affect historical comparisons of VaR results. Model changes go through a review and approval process by the Model Review Group prior to implementation into the operating environment. For further information, see Model risk on page 153 of JPMorgan Chase's 2013 Form 10-K.

#### **Risk management VaR comparison to Regulatory VaR**

The Firm's Risk Management VaR is calculated assuming a one-day holding period and an expected tail-loss methodology, which approximates a 95% confidence level.

This means that, assuming current changes in market values are consistent with the historical changes used in the simulation, the Firm would expect to incur VaR "band breaks," defined as losses greater than that predicted by VaR estimates, not more than five times in every 100 trading days. For risk management purposes, the Firm believes the use of a 95% confidence level with a one-day holding period provides a stable measure of VaR that closely aligns to the day-to-day risk management decisions made by the lines of business and provides information to respond to risk events on a daily basis. The Firm's Risk Management VaR is disclosed in its SEC filings.

As required by Basel III, the Firm calculates Regulatory VaR assuming a 10-day holding period and an expected tail loss methodology, which approximates a 99% confidence level. Assuming current changes in market values are consistent with the historical changes used in the simulation, the Firm

would expect to incur losses greater than that predicted by the one-day, Regulatory VaR estimates not more than once every 100 trading days.

As noted above, Regulatory VaR is applied to "covered positions" as defined by Basel III, which may be different from the positions included in the Firm's Risk Management VaR. For example, credit derivative hedges of accrual loans are included in the Firm's Risk Management VaR, while Regulatory VaR excludes these credit derivative hedges.

#### **IV. Regulatory market risk capital models**

##### ***VaR-based Measure ("VBM")***

The VBM measure is an aggregate loss measure combining Regulatory VaR and modeled specific risk ("SR") factors over a 10-day holding period and a 99% confidence level. While the Regulatory VaR portion of the VBM measures the estimated maximum amount of decline due to market price or rate movements for all covered positions, the modeled SR portion of the VBM measures the risk of loss from factors other than broad market movements. Modeled SR factors include event risk and idiosyncratic risk for a subset of covered positions for which the model is approved by the Firm's supervisors; default events are covered by the IRC or CRM measures as discussed below. The results of the Firm's VBM are converted to capital requirements based on the application of multipliers specified by Basel III. The capital requirements are then translated to risk-weighted assets using a multiplier of 12.5 as prescribed by Basel III.

The Firm's Regulatory VaR and modeled SR calculations are continuously evaluated and enhanced in response to changes in the composition of the Firm's portfolios, changes in market conditions, improvements in the Firm's modeling techniques to minimize differences in models for like products, systems capabilities, and other factors. Such changes will affect historical comparisons of the VBM and VaR results.

The following table presents the results of the Firm's VBM, converted to risk-based capital and risk-weighted assets based on the application of regulatory multipliers as specified by Basel III.

March 31, 2014 (in millions)	VBM	Risk-based capital <sup>(a)</sup>	RWA
<b>Firm modeled VBM</b>	\$ 177	\$ 530	\$ 6,624

(a) The modeled VBM is subject to a regulatory multiplier that is set at a minimum of 3 (which is the multiplier used in this table) and can be increased up to 4, depending upon the number of backtesting band breaks.

The following table presents the average, minimum, maximum and period-end VBM by risk type for the CIB and the Firm. In addition, the table presents the reduction of total risk resulting from the diversification of the portfolio, which is the sum of the CIB VBMs for each risk type less the total CIB VBM. The diversification effect reflects the fact that risks are not perfectly correlated.

(in millions)	Three months ended Mar 31, 2014			At Mar 31, 2014
	Avg.	Min	Max	
<b>CIB VBM by risk type</b>				
Interest rate <sup>(a)</sup>	\$ 95	\$ 76	\$ 120	\$ 110
Credit spread <sup>(a)</sup>	130	104	151	133
Foreign exchange	36	22	55	38
Equities	56	41	87	41
Commodities and other	56	44	82	58
Diversification benefit	(201) <sup>(b)</sup>	NM <sup>(c)</sup>	NM <sup>(c)</sup>	(216) <sup>(b)</sup>
<b>Total CIB VBM</b>	<b>\$ 172</b>	<b>\$ 139</b>	<b>\$ 221</b>	<b>\$ 164</b>
<b>Total Firm VBM</b>	<b>\$ 177</b>	<b>\$ 152</b>	<b>\$ 227</b>	<b>\$ 157</b>

- (a) For certain products and portfolios, a full revaluation model is used to calculate VBM, which considers both interest rate and credit spread risks together. As such, the Firm allocates the results of the full revaluation model between interest rate and credit spread risk based on the predominant characteristics of the product or portfolio.
- (b) Average portfolio VBM and period-end portfolio VBM were less than the sum of the components described above due to portfolio diversification.
- (c) Designated as not meaningful (“NM”), because the minimum and maximum may occur on different days for different risk components, and hence it is not meaningful to compute a portfolio-diversification effect.

For the three months ended March 31, 2014, JPMorgan Chase’s average CIB VBM was \$172 million, compared with average Risk Management CIB VaR of \$42 million (see Value-at-risk on pages 57-59 of JPMorgan Chase’s 1Q14 Form 10-Q). The CIB VBM was higher predominantly due to the longer holding period (10 days), as well as the higher confidence factor (99%) and differences in population.

The average CIB VBM diversification benefit was \$201 million, or 54% of the sum of the individual risk components for the three months ended March 31, 2014. The average Risk Management CIB trading VaR diversification benefit was \$32 million, or 47% of the sum of the individual risk components, for the three months ended March 31, 2014 (see Value-at-risk on pages 57-59 of JPMorgan Chase’s 1Q14 Form 10-Q).

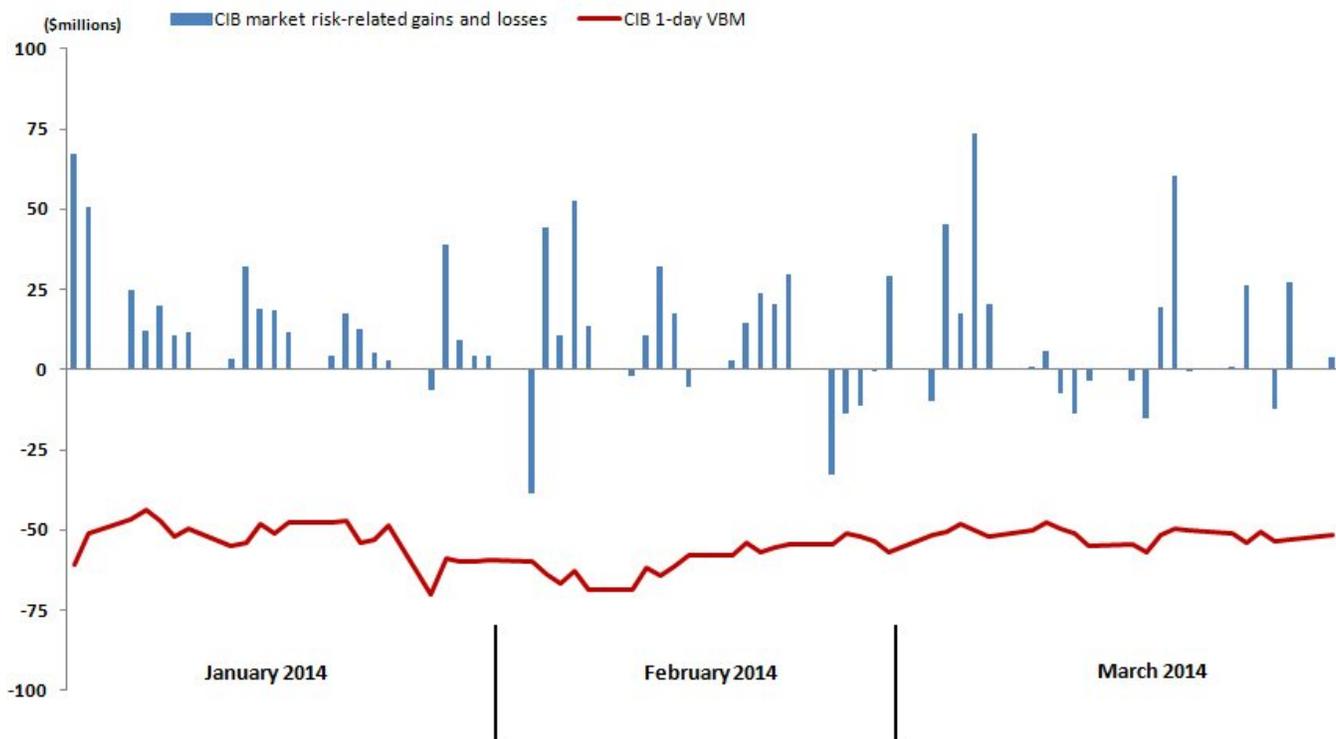
For additional information on Risk Management VaR, see Market Risk Management, on pages 142-148 of JPMorgan Chase’s 2013 Form 10-K, and on pages 57-60 of JPMorgan Chase’s 1Q14 Form 10-Q.

**Comparison of VBM estimates with actual market risk-related gains and losses**

Back-testing is an approach to evaluating the effectiveness of the Firm's VBM methodology. Back-testing compares daily market risk related gains and losses with one-day VBM results. Market risk related gains and losses are defined as profits and losses on covered positions, excluding fees, commissions, fair value adjustments, net interest income, and gains and losses arising from intraday trading. VBM "band breaks" occur when market risk-related losses are greater than the estimate predicted by the VBM for the corresponding day.

The following chart presents the VBM back-testing results for CIB's covered positions. For the quarter ended March 31, 2014, the CIB posted market-risk related gains on 47 of the 63 trading days in this period. There were no days during this period on which the CIB incurred a band break. The results in the table below are different from the results of VaR back-testing disclosed in the Firm's SEC filings due to the differences described in the Value-at-Risk section of this report.

**CIB daily market risk-related gains and losses on covered positions**  
**Total VBM (1-day, 99.0% confidence-level)**  
 Quarter ended March 31, 2014



Note: The gains and losses used in back-testing represent gains and losses generated only by market moves, and are not reflective of CIB's total gains and losses.

### Stressed VaR-Based Measure (“SVBM”)

The SVBM uses the same Regulatory VaR and SR models as are used to calculate the VBM, but the models are calibrated to reflect historical data from a continuous 12-month period that reflects significant financial stress appropriate to the Firm’s current portfolio.

The SVBM presented in the tables below reflects an interim approach until the Firm finalizes its SVBM model.

The following table presents the results of the Firm’s SVBM, converted to risk-based capital and risk-weighted assets based on the application of regulatory multipliers as specified by Basel III.

March 31, 2014 (in millions)	SVBM	Risk-based capital <sup>(a)</sup>	RWA
<b>Firm modeled SVBM</b>	\$ 530	\$ 1,590	\$ 19,873

(a) The modeled SVBM is subject to a regulatory multiplier that is set at a minimum of 3 (which is the multiplier used in this table) and can be increased up to 4, depending upon the number of VBM backtesting exceptions.

The following table presents the average, minimum, maximum and period-end SVBM for the CIB and the Firm.

(in millions)	Three months ended Mar 31, 2014			At Mar 31, 2014
	Avg.	Min	Max	
<b>Total CIB SVBM</b>	\$ 516	\$ 416	\$ 664	\$ 492
<b>Total Firm SVBM</b>	\$ 530	\$ 455	\$ 682	\$ 470

### Incremental Risk Charge (“IRC”)

The IRC measure captures the risks of issuer default and credit migration for credit-sensitive covered positions that are incremental to the risks already captured in the VBM. The model is intended to measure the potential loss over a one-year holding period at a 99.9% confidence level, and it is limited for use to non-securitized covered positions. The IRC is calculated on a weekly basis.

JPMorgan Chase has developed a Monte Carlo simulation-based model to compute the IRC for its credit-sensitive, non-securitized covered positions. Modeling of default events is based on a proprietary multi-factor asset approach, which incorporates the effects of issuer, regional and industry risk concentrations. Credit migration risk is captured in the IRC model by an explicit simulation of credit spread distributions. Product concentrations are captured by incorporating product-specific factors such as bond-credit default swap (“CDS”) basis risk. The underlying simulation model is calibrated to provide joint distributions across all risk factors (e.g., default, spread, recovery, basis effects), while capturing important cross-effects that can have a significant impact on the tail risk of the portfolio, such as the correlation between defaults and recoveries.

The IRC model assumes the level of trading positions remains constant in order to model profit and loss distributions over a one-year holding period. This approach effectively assumes a one-year liquidity horizon for all positions, while all risk factor shocks are applied to the portfolio in an instantaneous setting. The IRC is measured as a 99.9% quantile loss from the gain and loss distribution relative to the current value of the portfolio. The IRC model uses a full revaluation approach to capture the re-pricing risk of all positions due to credit migration and default events. This approach requires full economic details on all positions for re-pricing, thereby capturing the non-linear effects of risk factors on the value of the portfolio during large market moves.

The IRC is validated through the evaluation of modeling assumptions, sensitivity analysis, ongoing monitoring, benchmarking and outcome analysis. In addition, over time, as market conditions and portfolios change, periodic testing of the model (including sensitivity analysis, accuracy and convergence testing) is conducted to ensure the appropriateness of model settings and parameters, as well as the accuracy and robustness of the model output. In order to ensure continued applicability and relevance, the IRC model’s calibration to historical market data is updated quarterly.

The following table presents the IRC risk-based capital requirement for the CIB, which is the same as the risk measure itself, and the risk-weighted assets which is based on the application of regulatory multipliers as specified by Basel III.

March 31, 2014 (in millions)	IRC	RWA
<b>Total CIB IRC</b>	\$ 911	\$ 11,389

The following table presents the average, minimum, maximum and period-end IRC for the CIB.

(in millions)	Three months ended Mar 31, 2014			At Mar 31, 2014
	Avg.	Min	Max	
<b>CIB IRC on trading positions</b>	\$ 690	\$ 409	\$ 1,043	\$ 911

### Comprehensive Risk Measure (“CRM”)

The CRM captures material price risks of one or more portfolios of correlation trading positions. Correlation trading positions refer to client-driven market-making activities in credit index and bespoke tranche swaps that are delta hedged with single-name and index credit default positions, and includes residual positions related to the synthetic credit portfolio. In addition, Basel III requires that an additional charge equal to 8% of the market-risk based capital calculated using the standard SR model (see below) be added to the CRM model-based capital requirements; this is referred to as the CRM surcharge.

Similar to the IRC, the CRM measures potential losses over a one-year holding period at a 99.9% confidence level. The CRM is calculated on a weekly basis.

The CRM model is an extension of the previously described Monte-Carlo simulation-based IRC model, and it includes additional risk factors that are relevant for index tranches, bespoke tranches, and first-to-default positions in the Firm’s correlation trading portfolio. The range of risk factors simulated by the CRM model includes default events, credit spreads, recovery rates, implied correlations, index-to-constituent spread basis risk, bespoke-to-index correlation basis risk, and capital structure basis risks.

The CRM model assumes the level of trading positions remains constant in order to model profit and loss distributions over a one-year holding period. This approach effectively assumes a one-year liquidity horizon for all positions, while all risk factor shocks are applied to the portfolio in an instantaneous setting. The CRM is measured as a 99.9% quantile loss from the gain and loss distribution relative to the current value of the portfolio. The CRM model uses a full revaluation approach to capture the re-pricing risk of all correlation trading positions, thereby capturing the non-linear effects of risk factors on the value of the portfolio during large market moves, particularly due to the convexity of tranche valuation to default events.

The CRM model is validated through the evaluation of modeling assumptions, sensitivity analysis, ongoing monitoring, benchmarking and outcome analysis. In order to ensure continued applicability and relevance, the CRM model’s calibration to historical market data is updated quarterly. As an additional validation, and to comply with the requirements of Basel III, weekly CRM stress testing is performed for all correlation trading positions. The weekly CRM stress testing leverages pre-defined stress scenarios across major risk factors including default, spread, index-CDS basis spreads, and base correlation. In addition, over time, as market conditions and portfolios change, periodic testing of the model (including sensitivity analysis, accuracy and convergence testing) is conducted to ensure the appropriateness of model settings and parameters, as well as the accuracy and robustness of the model output.

The following table presents the CRM risk-based capital requirement (which is the same as the risk measure itself) and the risk-weighted assets (which is based on the application of regulatory multipliers as specified by Basel III) for the CIB.

March 31, 2014 (in millions)	CRM <sup>(a)</sup>	RWA
<b>Total CIB CRM</b>	<b>\$ 1,835</b>	<b>\$ 22,940</b>

(a) Includes a CRM surcharge, which amounted to \$814 million on CIB trading positions.

The following table presents the average, minimum, maximum and period-end CRM for the CIB.

(in millions)	Three months ended Mar 31, 2014			At Mar 31, 2014
	Avg.	Min	Max	
CRM model on CIB trading positions	\$ 1,021	\$ 577	\$ 1,782	\$ 743
CRM surcharge on CIB trading positions	814	742	907	742
<b>Total CIB CRM</b>	<b>\$ 1,835</b>	<b>\$ 1,319</b>	<b>\$ 2,689</b>	<b>\$ 1,485</b>

### Aggregate correlation trading positions

The following table presents the net notional amount and fair value of the Firm’s aggregate correlation trading positions and the associated credit hedges. Credit hedges of the correlation trading positions are included as they are considered to be part of the aggregate correlation trading positions. The presentation distinguishes between positions that are modeled in CRM and those that are not modeled in CRM.

March 31, 2014 (in millions)	Notional amount <sup>(a)</sup>	Fair value <sup>(b)</sup>
Positions modeled in CRM	\$ 5,777	\$ (1,570)
Positions not modeled in CRM	26	153
<b>Total correlation trading positions</b>	<b>\$ 5,803</b>	<b>\$ (1,417)</b>

(a) Reflects the net of the notional amount of the correlation trading portfolio, including credit hedges.

(b) Reflects the fair value of securities and derivatives, including credit hedges.

### **Non-Modeled Specific Risk add-on (Standard SR)**

Non-modeled Specific Risk add-on (or "standard SR") is calculated using supervisory-prescribed risk weights and methodologies for covered debt, equity and securitization positions that are not included in modeled SR. The market risk-based capital and risk-weighted assets for non-modeled SR are shown in the table below.

March 31, 2014 (in millions)	Risk-based capital	RWA
<b>Standard Specific Risk:</b>		
Securitization positions	\$ 1,331	16,635
Nonsecuritization positions	7,279	90,989
<b>Total Standard Specific Risk</b>	<b>\$ 8,610</b>	<b>107,624</b>

### **Other charges**

Certain positions, primarily those for which the Firm has not received supervisory approval to calculate regulatory capital using modeled-based VBM and SVBM, receive "other charges" as detailed in the table below.

March 31, 2014 (in millions)	Risk-based capital	RWA
<b>Total Firm Other charges</b>	<b>\$ 2,166</b>	<b>\$ 27,081</b>

## **V. Securitization positions**

A securitization or re-securitization position includes on- or off-balance sheet credit exposure (including credit enhancements) that arise from a securitization (including a re-securitization); or an exposure that directly or indirectly references a securitization (e.g., credit derivative). A securitization is defined as a structure for which the credit risk of its underlying exposures is transferred to third parties, the credit risk has been separated into two or more tranches, the performance of the securitization depends upon the performance of the underlying exposures or reference assets, and all or substantially all of the underlying exposures or reference assets are financial exposures. A re-securitization means that one or more of the underlying exposures is a securitization position.

### **Credit risk monitoring**

For each covered securitization and re-securitization position, the Firm performs due diligence on the credit worthiness of each position within three days of the execution of the purchase of that position as required by Basel III. The Firm's due diligence procedures are designed to provide it with a comprehensive understanding of the features that would materially affect the performance of a securitization or re-securitization. The Firm's due diligence procedures include analyzing and monitoring: (1) the quality of the position, including relevant information regarding the performance of the underlying credit

exposures and relevant market data; (2) the structural and other enhancement features that may affect the credit quality of a securitization or re-securitization; and (3) for re-securitization positions, information on the performance of the underlying securitization exposures. The level of detail included in the due diligence procedures is commensurate with the complexity of each securitization or re-securitization position held. The due diligence procedures are performed on a quarterly basis for each securitization and re-securitization position. In accordance with the due diligence requirements of the Dodd-Frank Act, which are incorporated into Basel III, the Firm has implemented an automated recordkeeping system to document the due diligence procedures that are performed.

### **Market risk monitoring**

The risk related to securitization and re-securitization positions are managed within JPMorgan Chase's policy framework. Each line of business that transacts in these positions and the Market Risk function work together to monitor the positions, position changes, and the composition of the total portfolio. This includes, but is not limited to, the review of approved risk limits versus daily positions using risk measures such as market values, risk factor sensitivities and stress loss scenarios. Covered securitization and re-securitization positions are included in the Firm's Risk Management VaR on a daily basis. These positions are included as part of market risk and limit reports that are distributed on a daily basis to the trading desk, Risk Management and senior managers within the lines of business.

### **Credit risk mitigation**

Various strategies are employed by the Firm to mitigate the risk from securitization and re-securitization positions. These include credit risk mitigation through the Firm's normal policies and practices at the both the transaction and portfolio levels, which include analysis of the underlying collateral, diversification of the positions, and hedging, among others.

JPMorgan Chase products are sensitive to interest rate levels and the overall credit environment. The Firm predominantly hedges credit spread and interest rate risk, and currency risk associated with non-U.S. denominated assets, as needed, related to its securitization and re-securitization positions. JPMorgan Chase's policies allows various financial instruments to be employed to mitigate or hedge the risks of securitization and re-securitization positions. Examples of these instruments include U.S. Treasuries, interest rate swaps, FX forwards, and various credit derivative and mortgage bond indices.

### Securitization positions – on- and off-balance sheet

The following table presents by reference asset type the aggregate risk exposure of on- and off-balance sheet covered securitization positions that are subject to the standard SR measure as a securitization. The net notional amount and fair value are shown for net long and net short

credit derivatives positions. Under Basel III, the Firm is required to hold capital against the greater of the aggregate net long or net short securitization positions. All covered securitization positions are in the CIB.

March 31, 2014 (in millions)	Securities at fair value	Credit derivatives			
		Net long positions		Net short positions	
		Net notional amount	Fair value	Net notional amount	Fair value
<b>Reference asset type</b>					
Residential mortgage <sup>(a)</sup>	\$ 1,947	\$ 188	\$ (33)	\$ (274)	\$ 102
Other consumer	2,194	–	–	–	–
Commercial mortgage <sup>(a)</sup>	1,338	232	(94)	(478)	230
Other commercial	1,062	39	(29)	(725)	(292)
<b>Total trading securitization positions<sup>(b)</sup></b>	<b>\$ 6,541</b>	<b>\$ 459</b>	<b>\$ (156)</b>	<b>\$ (1,477)</b>	<b>\$ 40</b>
<b>Memo: Total re-securitization positions included<sup>(b)</sup></b>	<b>\$ 526</b>	<b>\$ 31</b>	<b>\$ (27)</b>	<b>\$ (181)</b>	<b>\$ 64</b>

(a) Excludes mortgage securitization positions guaranteed by U.S. government-sponsored enterprises.

(b) Excludes correlation trading positions.

### VI. Stress tests applied to covered positions subject to market risk

#### Economic-value stress testing

Along with VaR, stress testing is an important tool in measuring and controlling risk. While VaR reflects the risk of loss due to adverse changes in markets using recent historical market behavior as an indicator of losses, stress testing is intended to capture the Firm's exposure to unlikely but plausible events in abnormal markets. The Firm runs weekly stress tests on market-related risks across the lines of business using multiple scenarios that assume significant changes in risk factors such as credit spreads, equity prices, interest rates, currency rates or commodity prices. The framework uses a grid-based approach, which calculates multiple magnitudes of stress for both market rallies and market sell-offs for each risk factor. Stress-test results, trends and explanations based on current market risk positions are reported to the Firm's senior management and to the lines of business to allow them to better understand the sensitivity of positions to certain defined events and to enable them to manage their risks with more transparency.

Stress scenarios are defined and reviewed by Market Risk, and significant changes are reviewed by the relevant Risk Committees (for further details, see Risk Governance, on pages 114-116 of JPMorgan Chase's 2013 Form 10-K). While most of these scenarios estimate losses based on significant market moves, such as an equity market collapse or credit crisis, the Firm also develops scenarios to quantify risk arising from specific portfolios or concentrations of risks, which attempt to capture certain idiosyncratic market movements. Scenarios may be redefined on an ongoing basis to reflect current market conditions. Ad hoc scenarios

are run in response to specific market events or concerns. Furthermore, the Firm's stress testing framework is utilized in calculating results under scenarios mandated by the Federal Reserve's Comprehensive Capital Analysis and Review ("CCAR") and Internal Capital Adequacy Assessment Process ("ICAAP") processes as described further below.

### VII. Internal capital adequacy soundness standards and methodologies

The Firm's capital management objectives are to hold capital sufficient to:

- Cover all material risks underlying the Firm's business activities;
- Maintain "well-capitalized" status under regulatory requirements;
- Maintain debt ratings that enable the Firm to optimize its funding mix and liquidity sources while minimizing costs;
- Retain flexibility to take advantage of future investment opportunities;
- Maintain sufficient capital in order to continue to build and invest in its businesses through the cycle and in stressed environments; and
- Distribute excess capital to shareholders while balancing the other stated objectives.

These objectives are achieved through ongoing monitoring of the Firm's capital position, regular stress testing, and a capital governance framework. Capital management is intended to be flexible in order to react to a range of potential events. JPMorgan Chase has firmwide and line of business processes for its ongoing monitoring and active management of its capital position.

Semiannually, the Firm completes the ICAAP, which provides management with a view of the impact of severe and unexpected events on earnings, balance sheet positions, reserves and capital. The Firm's ICAAP integrates stress testing protocols with capital planning.

The process assesses the potential impact of alternative economic and business scenarios on the Firm's earnings and capital. Economic scenarios, and the parameters underlying those scenarios, are defined centrally and applied uniformly across the businesses. These scenarios are articulated in terms of macroeconomic factors, which are key drivers of business results; global market shocks, which generate short-term but severe trading losses; and idiosyncratic operational risk events. The scenarios are intended to capture and stress key vulnerabilities and idiosyncratic risks facing the Firm. However, when defining a broad range of scenarios, realized events can always be worse. Accordingly, management considers additional stresses outside these scenarios, as necessary. ICAAP results are reviewed by management and the Board of Directors.

For further information on the Firm's ICAAP process and the CCAR, see Internal Capital Adequacy Assessment Process and Comprehensive Capital Analysis and Review ("CCAR"), respectively, on pages 160-161 of JPMorgan Chase's 2013 Form 10K, and Comprehensive Capital Analysis and Review ("CCAR") on page 68 of JPMorgan Chase's 1Q14 Form 10-Q.

### **VIII. Enterprise-Wide Risk Management**

Risk is an inherent part of JPMorgan Chase's business activities. The Firm employs a holistic approach to risk management that is intended to ensure the broad spectrum of risk types inherent in the Firm's business activities are considered in managing its business activities.

The Firm believes effective risk management requires:

- Personal responsibility for risk management, including identification and escalation of risk issues, by all individuals within the Firm;
- Ownership of risk management within each line of business; and
- Firmwide structures for risk governance and oversight.

Firmwide Risk Management is overseen and managed on an enterprise-wide basis. The Firm's Chief Executive Officer ("CEO"), Chief Financial Officer ("CFO"), Chief Risk Officer ("CRO") and Chief Operating Officer ("COO") develop and set the risk management framework and governance structure for the Firm, which is intended to provide comprehensive controls and ongoing management of the major risks inherent in the Firm's business activities. The Firm's risk management framework is designed to create a culture of risk transparency and awareness, and personal responsibility throughout the Firm where collaboration, discussion, escalation and sharing of information are encouraged. The CEO, CFO, CRO and COO are ultimately responsible and accountable to the Firm's Board of Directors.

Employees are expected to operate with the highest standards of integrity and identify, escalate, and actively manage risk issues. The Firm's risk culture strives for continual improvement through ongoing employee training and development, as well as talent retention. The Firm also approaches its incentive compensation arrangements through an integrated risk, compensation and financial management framework to encourage a culture of risk awareness and personal accountability. The Firm's overall objective in managing risk is to protect the safety and soundness of the Firm, and avoid excessive risk taking. For further information on Enterprise-Wide Risk Management, see pages 113-116 of JPMorgan Chase's 2013 Form 10-K.

The Firm has identified various risks that are inherent in its business activities. Risks that are centrally managed include capital risk, liquidity risk, non-U.S. dollar foreign exchange risk and structural interest rate risk. Risks that are managed on a line of business ("LOB") aligned basis include country risk, credit risk, fiduciary risk, legal risk, market risk, model risk, operational risk, principal risk, regulatory and compliance risk, and reputation risk. In particular, market risk is the potential for 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.

#### ***Risk governance and oversight***

The Board of Directors provides oversight of risk principally through the Board of Directors' Risk Policy Committee ("DRPC"), Audit Committee and, with respect to compensation, Compensation & Management Development Committee.

The Firm-level risk appetite parameters are set and approved by the Firm's CEO, CFO, CRO and COO. LOB-level risk appetite parameters are set by the LOB CEO, CFO, and CRO and are approved by the Firm's functional heads. Firmwide LOB diversification allows the sum of the LOBs' loss tolerances to be greater than the Firmwide loss tolerance.

The CRO is responsible for the overall direction of the Firm's Risk Management function and is the head of the Risk Management Organization. The LOBs and legal entities are ultimately responsible for managing the risks inherent in their respective business activities.

The Firm's Risk Management Organization and other Firmwide functions with risk-related responsibilities (i.e., Regulatory Capital Management Office ("RCMO"), Oversight and Control Group, Valuation Control Group ("VCG"), Legal and Compliance) provide independent oversight of the monitoring, evaluation and escalation of risk.

## **Market risk management**

Market Risk is an independent risk management function that works in close partnership with the lines of business, including Treasury and CIO within Corporate/Private Equity, to identify and monitor market risks throughout the Firm and to define market risk policies and procedures. The Market Risk function reports to the Firm's CRO.

Market Risk seeks to control risk, facilitate efficient risk/return decisions, reduce volatility in operating performance and provide transparency into the Firm's market risk profile for senior management, the Board of Directors and regulators. Market Risk is responsible for the following functions:

- Establishment of a market risk policy framework
- Independent measurement, monitoring and control of line of business and firmwide market risk
- Definition, approval and monitoring of limits
- Performance of stress testing and qualitative risk assessments

For further information on Market Risk Management, see pages 142-148 of JPMorgan Chase's 2013 Form 10-K.

## **IX. Model risk validation**

The Firm uses models for many purposes, but primarily for the measurement, monitoring and management of risk positions. Valuation models are employed by the Firm to value certain financial instruments which cannot otherwise be valued using quoted prices. These valuation models may also be employed as inputs to risk management models, including VaR and economic stress models. The Firm also makes use of models for a number of other purposes, including the calculation of regulatory capital requirements and estimating the allowance for credit losses.

Models are owned by various functions within the Firm based on the specific purposes of such models. For example, VaR models and certain regulatory capital models are owned by the line-of-business aligned risk management functions. Owners of models are responsible for the development, implementation and testing of their models, as well as referral of models to the Model Risk function within the Model Risk and Development unit ("MRaD") for review and approval. Once models have been approved, model owners are responsible for the maintenance of a robust operating environment and must monitor and evaluate the performance of the models on an ongoing basis. Model owners may seek to enhance models in response to changes in the portfolios and for changes in product and market developments, as well as to capture improvements in available modeling techniques and systems capabilities.

MRaD reports to the Chief Risk Officer. The Model Risk function is independent of the model owners and reviews and approves a wide range of models, including risk

management, valuation and certain regulatory capital models used by the Firm.

MRaD provides oversight of the firmwide Model Risk policy, guidance with respect to a model's appropriate usage and conducts independent reviews of models.

MRaD applies a consistent approach to evaluate the models used to calculate regulatory capital. The critical elements of the validation process are:

- An evaluation of the completeness of the risk factors for each product/instrument, and of the conceptual soundness of the risk factor simulation models;
- An analysis of model outcomes, including a comparison of the outputs with empirical experience and, where relevant, with alternative model specifications;
- An evaluation of the adequacy of model calibration procedures and model implementation testing performed by model developers; and
- An ongoing process to monitor the performance of models.

The evaluation of the soundness of a model seeks to assess the reasonableness of model specifications, and takes into consideration the purpose of the model and the state of current modeling technologies. The process to evaluate models also seeks to identify the main model assumptions, evaluate their adequacy, understand their strength and weaknesses, and the impact that such assumptions may have on model output. MRaD requires that critical weaknesses that have been identified in models have remediation plans that include specific action steps and analyses to resolve deficiencies within a specified period of time.

The output of models, and the models' response to changes in inputs, are evaluated via outcome analysis, which include comparing model results against empirical evidence, comparing model results against the results obtained with alternative settings or models, and assessing the reasonableness of the sensitivity of model results to changes in portfolio and market inputs.

While evidence of the integrity of model implementation is collected throughout the entire validation process, MRaD dedicates a stand-alone workstream to assess the completeness and quality of the testing performed by model developers. The evaluation also considers operational risk, including access and change controls. Special attention is devoted to model inputs, in particular the quality of the specifications provided to model developers, and whether inputs require transformation or involve business logic prior to being input into the model. MRaD also evaluates the approach used by model developers to ensure the numerical accuracy of the results, such as the setting of the number of trials in a Monte Carlo simulation or the number of points used in a numerical integration performed to revalue a financial instrument under different market conditions. To evaluate the testing performed on models, MRaD relies on walk-through

examples that describe the sequence of steps performed in calculations and specifies the outputs, including reported quantities and model diagnostics. Additional model testing may be requested of the model development team by MRaD or may be performed directly by MRaD.

The model validation process requires ongoing monitoring of model performance. This includes periodic reviews of (1) model results and sensitivity analysis of key model parameters for significant sub-portfolios and for benchmark test portfolios specified by MRaD; (2) results and impact analysis of model parameter recalibration; and (3) test results of the adequacy of the numerical settings in models.

For further discussion, see Model Risk Management on page 153 of JPMorgan Chase's 2013 Form 10-K.

## X. Valuation process

The accounting and financial reporting policies of JPMorgan Chase and its subsidiaries conform to accounting principles generally accepted in the U.S. ("U.S. GAAP"). Additionally, where applicable, the policies conform to the accounting and reporting guidelines prescribed by regulatory authorities. It is JPMorgan Chase's policy to carry its covered positions at fair value.

Risk-taking functions are responsible for providing fair value estimates for assets and liabilities carried on the Consolidated Balance Sheets at fair value. The Firm's valuation control function, which is part of the Firm's Finance function and independent of the risk-taking functions, is responsible for verifying these estimates and determining any fair value adjustments that may be required to ensure that the Firm's positions are recorded at fair value. In addition, the Firm has a firmwide Valuation Governance Forum ("VGF") comprised of senior finance and risk executives to oversee the management of risks arising from valuation activities conducted across the Firm. The VGF is chaired by the firmwide head of the Valuation Control function, and also includes sub-forums for the CIB and other lines of business and corporate functions.

The valuation control function verifies fair value estimates leveraging independently derived prices, valuation inputs and other market data, where available. Where independent prices or inputs are not available, additional review is performed by the valuation control function to ensure the reasonableness of estimates that cannot be verified to external independent data, and may include: evaluating the limited market activity including client unwinds; benchmarking of valuation inputs to those for similar instruments; decomposing the valuation of structured instruments into individual components; comparing expected to actual cash flows; reviewing profit and loss trends; and reviewing trends in collateral valuation. In addition there are additional levels of management review for more significant or complex positions.

The valuation control function determines any valuation adjustments that may be required to the estimates provided by the risk-taking functions. No adjustments are applied to

the quoted market price for instruments classified within level 1 of the fair value hierarchy. For more information on the fair value hierarchy, see Note 3 on pages 197-200 of JPMorgan Chase's 2013 Form 10-K. For other positions, judgment is required to assess the need for valuation adjustments to appropriately reflect liquidity considerations, unobservable parameters and for certain portfolios that meet specified criteria, the size of the net open risk position. The determination of such adjustments follows a consistent framework across the Firm:

- Liquidity valuation adjustments are considered when the Firm may not be able to observe a recent market price for a financial instrument that trades in an inactive (or less active) market. The Firm estimates the amount of uncertainty in the initial fair value estimate based on the degree of liquidity in the market. Factors that may be considered in determining the liquidity adjustment include: (1) the amount of time since the last relevant pricing point; (2) whether there was an actual trade or relevant external quotes or alternatively pricing points for similar instruments in active markets; and (3) the volatility of the principal risk component of the financial instrument.

The Firm manages certain portfolios of financial instruments on the basis of net open risk exposure and, as permitted by US GAAP, has elected to estimate the fair value of such portfolios on the basis of a transfer of the entire net open risk position in an orderly transaction. Where this is the case, valuation adjustments may be necessary to reflect the cost of exiting a larger-than-normal market-size net open risk position. Where applied, such adjustments are based on factors that a relevant market participant would consider in the transfer of the net open risk position including the size of the adverse market move that is likely to occur during the period required to reduce the net open risk position to a normal market-size.

- Unobservable parameter valuation adjustments may be made when positions are valued using internally developed models that incorporate unobservable parameters - that is, parameters that must be estimated and are, therefore, subject to management judgment. Unobservable parameter valuation adjustments are applied to reflect the uncertainty inherent in the valuation estimate provided by the model.

Where appropriate, the Firm also applies adjustments to its estimates of fair value in order to appropriately reflect counterparty credit quality and the Firm's own creditworthiness, applying a consistent framework across the Firm. For more information on such adjustments see Credit and funding adjustments, on page 212 of JPMorgan Chase's 2013 Form 10-K, and page 94 of JPMorgan Chase's 1Q14 Form 10-Q.

### *Valuation model review and approval*

If prices or quotes are not available for an instrument or a similar instrument, fair value is generally determined using valuation models that consider relevant transaction data

such as maturity and use as inputs market-based or independently sourced parameters. Where this is the case the price verification process described above is applied to the inputs to those models.

The Firm’s Model Risk function within MRaD reviews and approves valuation models used by the Firm. Model reviews consider a number of factors about the model’s suitability for valuation of a particular product including whether it accurately reflects the characteristics and significant risks of a particular instrument; the selection and reliability of model inputs; consistency with models for similar products; the appropriateness of any model-related adjustments; and sensitivity to input parameters and assumptions that cannot

be observed from the market. When reviewing a model, the Model Risk function analyzes and challenges the model methodology and the reasonableness of model assumptions and may perform or require additional testing, including back-testing of model outcomes.

New significant valuation models, as well as material changes to existing models, are reviewed and approved prior to implementation except where specified conditions are met. The Model Risk function performs an annual firmwide model risk assessment where developments in the product or market are considered in determining whether valuation models which have already been reviewed need to be reviewed and approved again.

The following table describes the valuation methodologies used by the Firm to measure its more significant products/instruments at fair value.

<b>Product/instrument</b>	<b>Valuation methodology</b>
Securities financing agreements	<p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> <li>• Derivative features. For further information refer to the discussion of derivatives below.</li> <li>• Market rates for the respective maturity</li> <li>• Collateral</li> </ul>
<b>Loans and lending-related commitments - wholesale</b>	
Trading portfolio	<p>Where observable market data is available, valuations are based on:</p> <ul style="list-style-type: none"> <li>• Observed market prices (circumstances are limited)</li> <li>• Relevant broker quotes</li> <li>• Observed market prices for similar instruments</li> </ul> <p>Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following:</p> <ul style="list-style-type: none"> <li>• Yield</li> <li>• Lifetime credit losses</li> <li>• Loss severity</li> <li>• Prepayment speed</li> <li>• Servicing costs</li> </ul>
Securities	<p>Quoted market prices are used where available.</p> <p>In the absence of quoted market prices, securities are valued based on:</p> <ul style="list-style-type: none"> <li>• Observable market prices for similar securities</li> <li>• Relevant broker quotes</li> <li>• Discounted cash flows</li> </ul> <p>In addition, the following inputs to discounted cash flows are used for the following products:</p> <p><i>Mortgage- and asset-backed securities specific inputs:</i></p> <ul style="list-style-type: none"> <li>• Collateral characteristics</li> <li>• Deal-specific payment and loss allocations</li> <li>• Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity</li> </ul> <p><i>Collateralized loan obligations (“CLOs”) specific inputs:</i></p> <ul style="list-style-type: none"> <li>• Collateral characteristics</li> <li>• Deal-specific payment and loss allocations</li> <li>• Expected prepayment speed, conditional default rates, loss severity</li> <li>• Credit spreads</li> <li>• Credit rating data</li> </ul>
Physical commodities	Valued using observable market prices or data

Product/instrument	Valuation methodology
Derivatives	<p>Exchange-traded derivatives that are actively traded and valued using the exchange price, and over-the-counter contracts where quoted prices are available in an active market.</p> <p>Derivatives that are valued using models such as the Black-Scholes option pricing model, simulation models, or a combination of models, that use observable or unobservable valuation inputs (e.g., plain vanilla options and interest rate and credit default swaps). Inputs include:</p> <ul style="list-style-type: none"> <li>• Contractual terms including the period to maturity</li> <li>• Readily observable parameters including interest rates and volatility</li> <li>• Credit quality of the counterparty and of the Firm</li> <li>• Market funding levels</li> <li>• Correlation levels</li> </ul> <p>In addition, the following specific inputs are used for the following derivatives that are valued based on models with significant unobservable inputs:</p> <p><i>Structured credit derivatives specific inputs include:</i></p> <ul style="list-style-type: none"> <li>• CDS spreads and recovery rates</li> <li>• Credit correlation between the underlying debt instruments (levels are modeled on a transaction basis and calibrated to liquid benchmark tranche indices)</li> <li>• Actual transactions, where available, are used to regularly recalibrate unobservable parameters</li> </ul> <p><i>Certain long-dated equity option specific inputs include:</i></p> <ul style="list-style-type: none"> <li>• Long-dated equity volatilities</li> </ul> <p><i>Certain interest rate and FX exotic options specific inputs include:</i></p> <ul style="list-style-type: none"> <li>• Interest rate correlation</li> <li>• Interest rate spread volatility</li> <li>• Foreign exchange correlation</li> <li>• Correlation between interest rates and foreign exchange rates</li> <li>• Parameters describing the evolution of underlying interest rates</li> </ul> <p><i>Certain commodity derivatives specific inputs include:</i></p> <ul style="list-style-type: none"> <li>• Commodity volatility</li> <li>• Forward commodity price</li> </ul> <p>Adjustments to reflect counterparty credit quality (credit valuation adjustments or “CVA”), the Firm’s own creditworthiness (debit valuation adjustments or “DVA”), and funding valuation adjustments (“FVA”) to incorporate the impact of funding.</p>
Fund investments (i.e., mutual/collective investment funds, and real estate funds)	<p>Net asset value (“NAV”)</p> <ul style="list-style-type: none"> <li>• NAV is validated by sufficient level of observable activity (i.e., purchases and sales)</li> <li>• Adjustments to the NAV as required, for restrictions on redemption (e.g., lock up periods or withdrawal limitations) or where observable activity is limited</li> </ul>

For further discussion of the Firm’s valuation policy and methodologies, see Note 3 on pages 195-215 of JPMorgan Chase’s 2013 Form 10-K.