

SUMMARY INSTRUCTIONS AND GUIDANCE

March 1, 2018

Accompanying Order Nos. 2018-OR-B-1, 2018-OR-FNMA-1, AND 2018-OR-FHLMC-1



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Introduction

Section 165(i)(2) of the Dodd-Frank Act requires certain financial companies with total consolidated assets of more than \$10 billion, and which are regulated by a primary federal financial regulatory agency, to conduct annual stress tests to determine whether the companies have the capital necessary to absorb losses as a result of adverse economic conditions. The Federal Housing Finance Agency (FHFA) is the primary federal financial regulator of Fannie Mae and Freddie Mac (the Enterprises), and the eleven Federal Home Loan Banks (Banks). These entities are referred to herein as regulated entities.

Each regulated entity has total consolidated assets of more than \$10 billion and, therefore, each is required to conduct the annual stress test. The Enterprises' capital positions, supported and restricted by the Senior Preferred Stock Purchase Agreements with the Department of the Treasury, are unique. Nonetheless, the Enterprises incorporate capital into their business decision-making processes. FHFA expects the Enterprises to have processes and procedures for managing their businesses notwithstanding Treasury's support. Therefore, FHFA's rule on Stress Testing of Regulated Entities, 12 C.F.R. pt. 1238, and these instructions and guidance apply equally to the Enterprises and the Banks.

FHFA's stress testing rule establishes the basic requirements for each regulated entity to conduct Dodd-Frank Act Stress Tests (DFAST) and report the results. This summary instructions and guidance document supplements the rule. FHFA expects each regulated entity to follow the instructions and guidance in conducting stress tests and reporting and publishing results under the rule. FHFA may communicate specific instructions to address particular issues relevant only to some of the regulated entities' completion of the stress tests. Each regulated entity is also expected to adhere to such individualized instructions.

General instructions and guidance are provided relating to:

- Scenario assumptions,
- Reporting and timing,
- Stress test process governance,
- Use of stress test results,
- Incomplete data,
- Evaluation of stress test processes, and
- Correspondence related to stress tests.

Stress Test Scenarios

The stress tests are based on portfolios as of December 31, 2017. The planning horizon for the stress test is nine quarters starting with the first quarter of 2018 and extending through the first quarter of 2020. The regulated entities are required to submit the results of stress tests based on three scenarios: Baseline, Adverse, and Severely Adverse. Assumptions for the variables in each scenario are contained in Appendices 4 through 9.

FHFA expects each regulated entity to use those variables that are relevant to the entity's line of

business and that are consumed by the entity's models. However, FHFA expects each regulated entity to apply all of the relevant global market shocks provided. Each regulated entity is expected to indicate which variables are included in its stress tests in its report to FHFA and the Federal Reserve Board of Governors (Board). FHFA also expects each regulated entity to extrapolate any of the aforementioned variables beyond the projection date as required. A year of scenario assumptions beyond the nine-quarter planning horizon will be provided and may be utilized, if needed. Historical data is provided in the event that models require that information.

It is important to note that the scenarios and assumptions provided are not forecasts, but instead are hypothetical scenarios and assumptions to assess the financial strength of the regulated entities.

Global Market Shock Assumptions

The global market assumptions provided by FHFA are to be applied to the regulated entities' trading securities, available-for-sale securities and other fair value assets as of December 31, 2017 for the Adverse and Severely Adverse scenarios.

The result of the global market shock is to be taken as an instantaneous loss and reduction of capital in the first quarter of the planning horizon. The global market shock should be treated as an add-on that is exogenous to the macroeconomic and financial market environment specified in the supervisory stress scenarios. The regulated entities should assume no recoveries of the losses generated by the global market shock over the nine quarters. The capital impact of the global

market shock is carried over the planning horizon.

If a regulated entity can demonstrate that its loss-estimation methodology stresses identical positions under both the global market shock and the macroeconomic scenario, the regulated entity may assume that the combined losses from such positions do not exceed the losses resulting from the greater of the global market shock losses or the macroeconomic losses.

Counterparty Default Scenario Component

The counterparty default scenario component of the global market shock should be treated as an add-on to the macroeconomic and financial market scenarios specified in the Adverse and Severely Adverse scenarios. The counterparty default scenario component involves an instantaneous and unexpected default of one of the following:

- a regulated entity's largest
 counterparty across the regulated
 entity's secured and unsecured
 lending, securities lending,
 repurchase/reverse repurchase
 agreements (collectively Securities
 Financing Transactions or SFTs) and
 derivative exposures, and the
 potential losses and effects on capital
 associated with such a default;
- a regulated entity's largest counterparty across the regulated entity's single-family mortgage insurance providers, and the potential losses and effects on capital associated with such a default; or
- a regulated entity's largest counterparty across the regulated entity's providers of multifamily

credit enhancements, and the potential losses and effects on capital associated with such a default.

The regulated entity should identify its largest counterparty as the counterparty that represents the largest total net stressed loss if the counterparty defaulted on its obligations. Net stressed losses for SFT counterparties are calculated after applying the instantaneous market shock to any non-cash SFT assets (securities/collateral) posted or received, and for derivatives, to the value of the trade position and non-cash collateral exchanged.¹

The as-of date for the counterparty default scenario component is December 31, 2017 – the same date as the global market shock.

All estimated losses from the counterparty default scenario component should be assumed to occur instantaneously and should be reported in the initial quarter of the planning horizon.

More detailed instructions for implementing certain assumptions follow:

House Prices

The House Price Index assumptions provided by FHFA describe the path of national house prices. Each regulated entity should extrapolate the national house price path beyond the projection date as needed.

Each regulated entity should also translate the national house price path in each scenario to regional house price paths as appropriate for each regulated entity's models, and should interpolate the house price paths to accommodate the frequency of data required by their models.

Missing Variables

Each regulated entity should use its internal assumptions for variables that its models consume but that FHFA does not provide.

Balance Sheet Evolution

Each regulated entity should also use its internal assumptions to roll its balance sheets forward through the nine-quarter projection period. The assumptions should reflect reasonable expectations for future business and should conform to the regulated entity's internal strategic plan. The Enterprise should ensure that the size and composition of its book of business during the stress test is consistent with the goals in FHFA's Conservatorship Scorecard.

Capital Actions

For capital actions, each Bank should take into account its actual capital actions as of the end of the calendar quarter preceding the first quarter of the nine-quarter planning horizon. For each succeeding quarter, each Bank should either assume payment of stock dividends equal to those paid in the year ending immediately prior to the first quarter of the planning horizon or follow any established rules it has for dividend payments.

Each Bank should either assume that it does not redeem or repurchase any capital instrument over the planning horizon or that

¹ In selecting its largest counterparty, a regulated entity will not consider certain sovereign entities (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) or designated central clearing counterparties.

its capital actions will accord with its established capital plans. It should also assume that it will redeem all mandatorily redeemable capital stock per its usual practice unless restricted from doing so by FHFA actions.

Finally, each Bank should assume that it will cease dividend payments, capital redemptions, or repurchases (as applicable) when retained earnings fall to zero.

The Enterprises should comply with the terms of the Senior Preferred Stock Purchase Agreements, as amended, to determine the level of dividends to pay over the planning horizon.

Operational Risk Losses

Operational risk losses are losses that arise from external events or from inadequate internal processes, people, or systems. The regulated entities should estimate operational risk losses for each scenario and submit the results to FHFA.

Impact of the Tax Cut and Jobs Act

Regulated entities must reflect the impact of the new tax law, which was enacted on December 22, 2017, in their December 31, 2017 financial statements and regulatory reports and DFAST 2018 projections.

Changes in Accounting Standards

The Financial Accounting Standards Board (FASB) periodically makes revisions to U.S. Generally Accepted Accounting Principles (U.S. GAAP). These changes affect an entity's financial reporting upon adoption by the entity. The FASB has made major revisions to accounting standards associated with recognition and

measurement of financial instruments, revenue recognition, leases, credit losses, and derivatives and hedging. The effective dates for these standards range from fiscal years beginning after December 15, 2017, to fiscal years beginning after December 15, 2020.

A regulated entity should not reflect the adoption of new accounting standards in its projections unless the firm has already adopted the accounting standard for financial reporting purposes.

With regard to Accounting Standards
Update No. 2016-13, Financial Instruments –
Credit Losses (Topic 326): Measurement of
Credit Losses on Financial Instruments
(CECL), all regulated entities should exclude
the potential effect of CECL for DFAST
reporting cycles 2018 and 2019, even if a
regulated entity chooses to early adopt
CECL for financial reporting purposes in
2019. FHFA will provide further guidance on
reflecting CECL in the 2020 DFAST
reporting cycle.

Reporting Format and Timing

The Enterprises must submit results of the Baseline, Adverse, and Severely Adverse scenarios to FHFA and the Board on or before May 20, 2018 and must publicly disclose a summary of the results of only the Severely Adverse scenario between August 1 and August 15. The Banks are to report results of the Baseline, Adverse, and Severely Adverse scenarios to FHFA and the Board by August 31 and publicly disclose a summary of the results of only the Severely Adverse scenario between November 15 and November 30.

The results of a regulated entity's analysis for

each scenario should encompass all potential losses and other impacts to net income and capital that the regulated entity might experience under the scenarios. In all cases, each regulated entity should substantiate that its results are consistent with the specified macroeconomic and financial environment and that the components of its results are internally consistent within each scenario.

The regulated entities are required to report the results using the DFAST templates provided in Appendices 2 and 3.

The regulated entities are also required to submit qualitative information describing the methodologies, including any simplifying or other assumptions used to produce the estimates, as well as any other information necessary to fully support the reasonableness of the stress test results.

Each regulated entity must submit its results and any supporting information to FHFA through a secure site. The Enterprises must use the secure server. The Banks must use the secure bank portal.

Stress Test Governance

The board of directors of each regulated entity or a designated committee thereof is responsible for reviewing and approving policies and procedures established to comply with the rule. Each board of directors should also receive and review the results of the stress tests for compliance with the rule and established policies and procedures. Senior management of each regulated entity is responsible for establishing and testing controls. Senior management and each

member of the board of directors are to receive a summary of the stress test results.

Use of Stress Test Results

The rule requires that each regulated entity take the results of the annual stress test into account in making changes as appropriate to its capital structure (including the level and composition of capital); and any changes to its exposures, concentrations, and risk positions; plans for recovery and resolution; or to improve overall risk management. Consultation with FHFA staff is expected in making any such changes. If a regulated entity is under FHFA conservatorship, any post-assessment actions would require FHFA's prior approval.

Results should include effects on capital, as required under the DFAST rule. Specifically, and in accordance with the rule, each regulated entity must calculate how each of the following is affected during each quarter of the stress test planning horizon, for each scenario:

- Potential losses, pre-provision net revenues, allowance for loan losses, and capital positions over the planning horizon; and
- Capital levels and capital ratios, including regulatory capital and net worth, each Bank's leverage and permanent capital ratios, and any other capital ratios, as specified by FHFA.

Incomplete Data

All regulated entities are required to report all data elements in the attached FHFA DFAST templates. Failure to submit complete data to FHFA in a timely manner may result in

remedy or penalty authorized under the Federal Housing Enterprises Financial Safety and Soundness Act of 1992, as amended (12 U.S.C. 4501 et seq.) (Safety and Soundness Act) and the Federal Home Loan Bank Act, as amended (12 U.S.C. 1421 through 1449).

Evaluation of Stress Test Processes and Results

FHFA will focus particular attention on the processes related to the implementation of the scenarios to ensure that these processes are robust and that they capture and stress key vulnerabilities and idiosyncratic risks facing the firm and that the translation of the scenario into loss, revenue, and capital projections is conceptually sound and implemented in a well-controlled manner. FHFA will evaluate the extent to which stress testing processes at the regulated entities adhere to the regulatory principles outlined in Appendix 1. FHFA will also review the stress results for reasonableness.

FHFA will review each regulated entity's assumptions for reasonableness and consistency with the assumptions used by other regulated entities. FHFA may require a regulated entity to adjust its assumptions or resubmit its results where FHFA deems the stress test results, assumptions, or processes are unacceptable.

Appendix 1: Regulatory Expectations for a Stress Testing Process

A regulated entity's stress testing process should adhere to the following principles:

Principle 1: The regulated entity has a sound risk measurement and management infrastructure that supports the identification, measurement, assessment, and control of all material risks arising from its exposures and business activities.

- A satisfactory stress testing process requires (1) a comprehensive risk identification process, and (2) complete and accurate measurement and assessment of all material risks.
- A regulated entity should measure or assess the full spectrum of risks that face the regulated entity, using both quantitative and qualitative methods, where applicable.
- The regulated entity should have data capture and retention systems that allow for the input, use, and storage of information required for sound risk identification and measurement and to produce reliable inputs for assessments of capital adequacy.
- Quantitative processes for measuring risks should meet supervisory expectations for model effectiveness and be supported by robust model development, documentation, validation, and overall model governance practices.

Both qualitative and quantitative processes for assessing risk should be transparent, repeatable, and reviewable by an independent party.

• Any identified weaknesses in risk measures used as inputs to the stress testing process should be documented and reported to relevant parties, with an assessment of the potential impact of risk-measurement weaknesses on the reliability of the stress test results.

Principle 2: The regulated entity has effective processes for translating risk measures into estimates of potential losses over a range of stressful scenarios and environments and for aggregating those estimated losses across the regulated entity.

- Stress tests should include methodologies that generate estimates of potential losses for all material risk exposures, one of which should be an enterprise-wide stress test using scenario analysis. Methodologies should be complementary, not suffer from common limitations, and minimize reliance on common assumptions.
- Using the loss estimation methodologies for its various risk exposures, a regulated entity should develop consistent and repeatable processes to aggregate its loss estimates on an enterprise-wide basis.
- A regulated entity should demonstrate that its loss estimation tools are developed

using sound modeling approaches, appropriate for the manner in which they are being employed, and that the most relevant limitations are clearly identified, well documented, and appropriately communicated.

• A regulated entity should recognize that its loss projections are estimates and should have a good understanding of the uncertainty around those estimates, including the potential margin of error and the sensitivity of the estimates to changes in inputs and key assumptions.

Principle 3: The regulated entity has a clear definition of available capital resources and an effective process for estimating available capital resources (including any projected revenues) over the same range of stressful scenarios and environments used for estimating losses.

- Management and the board of directors should understand the loss absorption capabilities of the components of the regulated entity's capital base, and maintain projection methodologies for each of the capital components included in relevant capital adequacy metrics.
- In estimating available capital resources, a regulated entity will need to consider not only its current positions and mix of capital instruments, but also how its capital resources may evolve over time under varying circumstances and stress scenarios.
- As part of a comprehensive enterprisewide stress testing program, projections of

pre-provision net revenue (PPNR) should be consistent with balance sheet and other exposure assumptions used for related loss estimation. Projections should estimate all key elements of PPNR, including net interest income, non-interest income, and non-interest expense at a level of granularity consistent with material revenue and expense components.

- A regulated entity should demonstrate that its capital resource estimation tools are developed using sound modeling approaches, appropriate for the manner in which they are being employed, and that the most relevant limitations are clearly identified, well documented, and appropriately communicated.
- A regulated entity should recognize that its projections of capital resources are estimates and should have a good understanding of the uncertainty around those estimates, including the potential margin of error and the sensitivity of the estimates to changes in inputs and key assumptions.

Principle 4: The regulated entity has processes for bringing together estimates of losses and capital resources to assess the combined impact on capital adequacy in relation to the regulated entity's stated goals for the level and composition of capital.

• A regulated entity should have a comprehensive and consistently executed process for combining loss, resource, and balance sheet estimates to assess the baseline and post-stress impact of those estimates on capital measures.

- A regulated entity should calculate and use several capital measures that represent both leverage and risk at specified time horizons under both baseline and stressful conditions, consistent with its capital policy framework. Measures should include quarterly estimates for the impact on capital and leverage ratios as well as other capital and risk measures useful in assessing overall capital adequacy.
- The processes for bringing together estimates of losses and capital resources should ensure that appropriately stressful conditions over the regulated entity's planning horizon have been incorporated to properly address the institution's unique vulnerabilities.
- The processes should provide for the presentation of any information that may have material bearing on the regulated entity's capital adequacy assessment, including all relevant risks and strategic factors, as well as key uncertainties and process limitations.

Principle 5: The regulated entity has a comprehensive capital policy and robust capital planning practices for establishing capital goals, determining appropriate capital levels and composition of capital, making decisions about capital actions, and maintaining capital contingency plans.

Capital Policy

• A capital policy is defined as a regulated entity's written assessment of the principles and guidelines used for capital planning, capital issuance, and usage and distributions, including internal capital

- goals, the quantitative or qualitative guidelines for dividend and stock repurchase decisions, the strategies for addressing potential capital shortfalls, and the internal governance procedures around capital policy principles and guidelines.
- A regulated entity should establish capital goals aligned with its risk appetite and risk profile as well as expectations of stakeholders, providing specific targets for the level and composition of capital. The regulated entity should ensure that maintaining its internal capital goals will allow it to continue its operations under stressful conditions.
- The capital policy should describe the decision making processes regarding capital goals, the level and composition of capital, capital actions, and capital contingency plans, including an explanation of the roles and responsibilities of key decision makers and information and analysis used to make decisions.
- The regulated entity should outline in its policy specific capital contingency actions it would consider to remedy any current or prospective deficiencies in its capital position, including any triggers and escalation procedures. The policy should also include a detailed explanation of the circumstances in which it will reduce or suspend a dividend or repurchase program, or will not execute a previously planned capital action.
- A regulated entity should establish a minimum frequency with which its capital plan is reevaluated (at least annually). In addition, a regulated entity should review its capital policy at least annually to ensure

it remains relevant and current.

Capital Planning Practices

- At regular intervals, a regulated entity should compare the estimates of baseline and post-stress capital measures (see Principle 4) to the capital goals established in the capital policy for purposes of informing capital decisions.
- For capital decisions, consideration should be given to any information that may have material bearing on the regulated entity's capital adequacy assessment, including all relevant risks and strategic factors, key uncertainties, and limitations of the stress test.
- Assessments of capital adequacy and decisions about capital should be supported by high quality data and information, informed by current and relevant analysis, and subject to challenge by senior management and the board of directors.
- Periodically, the regulated entity should conduct a thorough assessment of its capital contingency strategies, including their feasibility under stress, impact, timing, and potential stakeholder reactions.
- A regulated entity should administer its capital planning activities and capital decision processes in conformance with its policy framework, documenting, and justifying any divergence from policy.

Principle 6: The regulated entity has robust internal controls governing capital adequacy process components, including

policies and procedures, change control, model validation and independent review, comprehensive documentation, and review by internal audit.

- The internal control framework should encompass the entire stress test, including the risk measurement and management systems used to produce input data, the models and other techniques used to estimate loss and resource estimates, the process for making capital adequacy decisions, and the aggregation and reporting framework used to produce management and board reporting. The set of control functions in place should provide confirmation that all aspects of the stress test are functioning as intended.
- Policies and procedures should ensure a consistent and repeatable process and provide transparency to third parties for their understanding of a regulated entity's stress test processes and practices. Policies and procedures should be comprehensive, relevant to their use in the stress test, periodically updated and approved, and cover the entire stress test and all of its components.
- Specific to the stress test, a regulated entity should have internal controls that ensure the integrity of reported results and that all material changes to the stress test and its components are appropriately documented, reviewed, and approved. A regulated entity should have controls to ensure that management information systems are robust enough to support stress tests with sufficient flexibility to run ad hoc analysis as needed.

- Expectations for validation and independent review for components of the stress test are consistent with existing supervisory guidance on model risk management. Models should be independently validated or otherwise reviewed in line with model risk management and model governance expectations.
- A regulated entity should have clear and comprehensive documentation for all aspects of its stress test, including its risk measurement and management infrastructure, loss- and resource-estimation methodologies, the process for making capital decisions, and efficacy of control and governance functions.
- A regulated entity's internal audit should play a strong role in evaluating the stress test and its components. A full review of the capital adequacy process component should be done by audit periodically to ensure that as a whole the stress test is functioning as expected and in accordance with the regulated entity's policies and procedures. Internal audit should review the manner in which stress test deficiencies are identified, tracked, and remediated.
- Principle 7: The regulated entity has effective board and senior management oversight of the stress test, including periodic review of the regulated entity's risk infrastructure and loss and resource estimation methodologies, evaluation of capital goals, assessment of the appropriateness of stressful scenarios considered, regular review of any limitations and uncertainties in all aspects of the stress test, and approval of capital decisions.
 - The board of directors should make informed decisions on capital adequacy for its regulated entity by receiving sufficient information detailing the risks the regulated entity faces, its exposures and activities, and the impact that loss

- and resource estimates may have on its capital position.
- Information provided to the board of directors about capital adequacy should be framed against the capital goals established by the regulated entity and by obligations to external stakeholders, and consider capital adequacy for the regulated entity with respect to the current circumstances as well as on a pro forma, post-stress basis.
- The information the board of directors reviews should include a representation of key limitations, assumptions, and uncertainties within the stress test, enabling the board of directors to have the perspective to effectively understand and challenge reported results. The board of directors should take action when weaknesses in the stress test are identified, giving full consideration to the impact of those weaknesses in their capital decisions.
- Senior management should ensure that all weaknesses in the stress test are identified, as well as key assumptions, limitations, and uncertainties, and evaluate them for materiality (both individually and collectively). Senior management also should have remediation plans for any weaknesses affecting stress test reliability or results.
- Using appropriate information, senior management should make informed recommendations to the board of directors about the regulated entity's capital, including capital goals and distribution decisions. Senior management should include supporting information to highlight key assumptions, limitations, and uncertainties in the stress test that may affect capital decisions.
- A regulated entity should appropriately document the key decisions about capital

adequacy—including capital actions—made by the board of directors and senior management,

and describe the information used to make those decisions.

Appendix 2: FHFA DFAST Reporting Templates - Enterprises

Scenario Templates Cover Sheet
Each regulated entity is expected to provide input data for all the tabs in this spreadsheet.
Institution Name:
Date of Data Submission:
Institution Contact Name:
Institution Contact Phone Number:
Institution Contact Email Address:

Supplied Scenario Variables

(Please indicate which scenarios were used in your model by checking the appropriate box:)

Domestic Variables	International Variables
Real GDP Growth	☐ Euro Area Real GDP Growth
☐ Nominal GDP Growth	Euro Area Inflation
Real Disposable Income Growth	☐ Euro Area Bilateral Dollar Exchange Rate (\$/euro)
Nominal Disposable Income Growth	Developing Asia Real GDP Growth
Unemployment Rate	Developing Asia Inflation
CPI Inflation Rate	Developing Asia Bilateral Dollar Exchange Rate (F/UDS, indes, base = 2000,Q1)
3-month Treasury Yield	☐ Japan Real GDP Growth
5-year Treasury Yield	☐ Japan Inflation
10-year Treasury Yield	☐ Japan Bilateral Dollar Exchange Rate (yen/USD)
BBB Corporate Yield	U.K. Real GDP Growth
☐ Mortgage Rate	U.K. Inflation
☐ Prime Rate	U.K. Bilaeral Dollar Exchange Rate (USD/pound)
Dow Jones Total Stock Market Index	
☐ House Price Index	
Commercial Real Estate Price Index	
Market Volatility Index (VIX)	
Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Assetbased Securities (ABS), Commercial Mortgage-backed Securities (CMBS) and other collateral	
Agency Securities Option-Adjusted Spreads (OAS)	
Municipal Securities	
Counterparty Default Risk	
For variables not used, please provide a brief explanation belo	ow as to why it was not used:
Variable Name	Explanation
1	
2	
3	
4	
5	

Scenario Variables Beyond Those Supplied

	Baseline Scenario (additional variables	used beyond those supplied)
/ariable		
Number	Variable Name	Variable Definition
	variable ivallie	variable Definition
1		
2		
3		
4		
5		
	Adverse Scenario (additional variables	used bevond those supplied)
Variable	,	, ,
Number	Variable Name	Variable Definition
1		
2		
- 3		
4		
5		
•		
	Severely Adverse Scenario (additional varia	oles used beyond those supplied)
Variable		
Number	Variable Name	Variable Definition
1		
2		
3		
4		
7		

Baseline

Spread Assumptions

Spread to Benchmark

		Actual					Projected				
Category	Benchmark	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Example: Advance	3-Month LIBOR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0

Variables Used Beyond Those Supplied

	Actual				1	Projected				
Variable Name	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9

Forward Curve

	Actual									
Maturity	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
3-Month Treasury	1.2	1.4	1.7	1.9	2.1	2.2	2.4	2.5	2.6	2.7
6-Month										
1 year										
2 year										
5 year Treasury	2.1	2.2	2.4	2.5	2.7	2.8	2.8	2.9	2.9	3.0
10 year Treasury	2.4	2.6	2.7	2.8	2.9	3.1	3.1	3.2	3.3	3.5
15 year										
30 year										

House Price Index

 $(NOTE: For \ printing \ purposes \ dates \ only \ goes \ to \ Oct-18. \ However, the \ underlying \ excel \ spreadsheet \ collects \ 30 \ years \ of \ data.)$

	Actual		Projected								
Region	4Q 2017	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18

Region 1

Region 2

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Adverse

Spread Assumptions

Spread to Benchmark

		Actual					Projected				
Category	Benchmark	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Evample: Advance	3-Month LIBOR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0
Example: Advance	3-MOHTH LIBUR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0

Variables Used Beyond Those Supplied

	Actual					Projected				
Variable Name	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9

Forward Curve

	Actual									
Maturity	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
3-Month Treasury	1.2	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6-Month										
1 year										
2 year										
5 year Treasury	2.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.7
10 year Treasury	2.4	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.6
15 year										
30 year										

House Price Index

 $(NOTE: For \ printing \ purposes \ dates \ only \ goes \ to \ Oct-18. \ However, \ the \ underlying \ excel \ spreadsheet \ collects \ 30 \ years \ of \ data.)$

	Actual					Projected					
Region	4Q 2017	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18

Region 1

Region 2

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Severely Adverse

Spread Assumptions

Spread to Benchmark

		Actual					Projected				
Category	Benchmark	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Example: Advance	3-Month LIBOR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0

Variables Used Beyond Those Supplied

	Actual				P	rojected				
Variable Name	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9

Forward Curve

	Actual				Pr	ojected				
Maturity	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
3-Month Treasury	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6-Month										
1 year										
2 year										
5 year Treasury	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
10 year Treasury	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
15 year										
30 year										

House Price Index

(NOTE: For printing purposes dates only go to Oct-18. However, the underlying excel spreadsheet collects 30 years of data.)

	Actual				P	rojected					
Region	4Q 2017	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18

Region 1 Region 2

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Stress Test Template Instructions
1. All numbers should be reported in millions
2. Reported numbers should reflect the 12/31/2017 start date.

Income Statement (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
Net interest income (excluding management and guaranty fee income)		i i									
2 Management and guaranty fee income ¹		į									
3 Total net interest income											
		į									
4 Other income		<u> </u>									
5 Total revenue											
6 REO (foreclosed property expense)		į									
7 SOP 03-3 losses, net		}									
8 Security impairments		į									
9 Operational risk losses		ł									
10 Administrative expenses		İ									
11 Other expenses		!									
12 Pre-provision net revenue		İ									
12 1 10 provided monotonia		į									
13 (Provision) benefit for credit losses											
14 Derivatives gains (losses)		İ									
15 Trading gains (losses)		!									
16 Other gains (losses)		İ									
17 Global market shock impact on trading securities and held-for-sale loans		!									
18 Counterparty default losses											
19 Pre-Tax income (loss)											
20 (Provision) benefit for federal income taxes		İ									
21 Extraordinary gains (losses), net of tax effect		İ									
21 Extraordinary game (100000), not or tax offoot											
22 Net income (loss)											
23 Global market shock impact on available-for-sale securities											
23 Other comprehensive income		1									
21 Salot comprehensive income		İ									
25 Comprehensive income (loss)											

¹ Includes guaranty fees received for managing credit risk on mortgage loans of consolidated trusts/PCs.

Capital Roll Forward (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
CAPITAL											
1 Beginning capital		! !									
2 Senior preferred Treasury draw (prior period)		ļ									
3 Net income (loss)		! !									
4 Less: Dividends5 Other capital actions		ļ									
6 Change in AOCI		! 									
7 Change in non-controlling/minority interest		•									
8 Other		 									
9 Ending capital (deficit)											
10 Beginning PSPA funding commitment available		<u> </u>									
11 Treasury draw required		 									
12 Remaining PSPA funding commitment available											
-											
OTHER		! !									
13 Deferred tax assets, net of allowance											
14 Total Assets		i i									

<u>Poi</u>	tfolio Balances (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
1 2 3 4 5 6 7	AINED PORTFOLIO Agency securities Single-family Multifamily Non-Agency securities Private Label Securities (PLS) Commercial Mortgage-backed Securities (CMBS) Other¹ Whole loans Single-family Multifamily										
8	Total retained portfolio Single-family guaranty book of business										

¹ Other includes mortgage revenue bonds and other

	edit Overview - Quarterly (BASELINE) cludes single-family and multifamily)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
то	TAL PORTFOLIO		! ! !									
1 2 3 4	CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses											
5	Credit Expenses											
6 7 8 9	LOAN LOSS RESERVE (\$s in millions) Beginning loan loss reserve Net charge-offs Provison (benefit) for loan losses Other											
10	Ending Total Loan Loss Reserve											
11	Unpaid Principal Balance (\$s in millions)											

¹ Amount depicts the summation of foreclosed property expense and provision for credit losses.

Multifamily - Income Statement (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
 Net interest income¹ Management and guaranty fee income Other non-interest income Total revenue 											
 5 REO (foreclosed property exp.) 6 Security impairments 7 Other expenses² 											
 8 Pre-provision net revenue 9 (Provision) benefit for credit losses 10 Derivatives gains (losses) 11 Gains (losses) on loans 12 Other fair value gains (losses) 13 Global market shock impact on trading securities and held-for-sale loans 											
14 Pre-Tax income (loss)											
15 Provision (benefit) for federal income taxes16 Extraordinary gains (losses), net of tax effect											
17 Net income (loss)											
18 Global market shock impact on available-for-sale securities19 Other comprehensive income											
20 Comprehensive income (loss)											

¹ Includes net interest income on multifamily whole loans, GSE multifamily MBS held in the retained portfolio, CMBS, and multifamily MRBs.

 $^{^{\}rm 2}$ Includes operational risk losses, administrative expenses, and gains from partnership investments.

<u>Mu</u>	ultifamily Credit Overview - Quarterly (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
то	TAL PORTFOLIO											
1 2 3 4	CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses Credit Expenses											
3	Credit Expenses		İ									
6 7 8 9	LOAN LOSS RESERVE (\$s in millions) Beginning loan loss reserve Net charge-offs Provison (benefit) for loan losses Other											
10	Ending Total Loan Loss Reserve		1									
11	Unpaid Principal Balance (\$s in millions)											

¹ Amount depicts the summation of foreclosed property expense and provision for credit losses.

	Multifamily Key Metrics (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
	(\$s in millions)											
1	Total multifamily market volume (industry)											
3 4	Enterprise market share percentage New acquisition volume Liquidation volume Securitization volume											
6	Effective guaranty fee rate ² (bps)											
	Guaranty portfolio balance Loans and securities held in portfolio											

 $^{^{\}rm 1}$ Includes property sales and other run-off/prepayments.

² Guaranty fee income divided by weighted average portfolio balance.

Single-Family Credit Overview - Quarterly (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
	quartor	Q1	W2	Q3	Q-7	Q 0	QU	Q,	Q 0	43	rotar
TOTAL PORTFOLIO CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses											
5 Credit Expenses 1											
LOAN LOSS RESERVE (\$s in millions) 6 Beginning loan loss reserve 7 Net charge-offs 8 Provison (benefit) for loan losses/guaranty losses 9 Other 10 Ending Total Loan Loss Reserve											
Memo: 11 FAS 5 Loan Loss Reserve 12 FAS 114 Loan Loss Reserve 13 Concessions in FAS 114 Loan Loss Reserve											
14 Unpaid Principal Balance (\$s in millions)											
CURRENT BOOK (as of 12/31/17) CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses Provision for credit losses Credit Provision for credit losses Provision for credit losses											
LOAN LOSS RESERVE (\$s in millions) Beginning loan loss reserve the charge-offs Provison (benefit) for loan losses/guaranty losses Other											
24 Ending Loan Loss Reserve - Current Book											
25 Unpaid Principal Balance (\$s in millions)											
NEW BUSINESS											
CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses Credit Cosses Ordit Expenses 1											
LOAN LOSS RESERVE (\$s in millions) 31 Beginning loan loss reserve 32 Net charge-offs											
33 Provison (benefit) for loan losses/guaranty losses 34 Other											
35 Ending Loan Loss Reserve - New Business											
36 Unpaid Principal Balance (\$s in millions)											

¹ Amount depicts the summation of foreclosed property expense, provision for credit losses, and SOP 03-3 losses. ² Amount includes the impact of all troubled debt restructuring (TDR) related impairments.

	Single-Family Credit Overview - Quarterly (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	SERIOUSLY DELINQUENT LOAN ACTIVITY (count in '000s)										
1	Beginning seriously delinquent loans	į									
2	Seriously delinquent inflows - new SDQ	-									
3	Seriously delinquent inflows - cured	į									
4	Seriously delinquent cured by modification	}									
5	Seriously delinquent - cured	ļ									
6	Seriously delinquent to default	}									
7	Seriously delinquent to payoff	i									
8	Ending Seriously Delinquent Loans										
	Ending seriously delinquent rate (%) Aggregate UPB of seriously delinquent loans (\$s in millions)										

11 Loan modifications (count in 000s)

(\$s in millions)

PRIVATE MORTGAGE INSURERS - OVERVIEW (Nine Quarter Cumulative Totals)

Arch		Genworth	Mortgage	PMI		Republic		United	
	Essent		. 5.5.		Radian		Triad Guaranty	Guarantv	
Mortgage	Guaranty.	Mortgage	Guaranty	Mortgage	Guaranty	Mortgage	Insurance	Residential	Other
Insurance	Guaranty,	Insurance	Insurance	Insurance	Guaranty	Insurance		Resideritiai	Other
	Inc.		Corporation		Inc.		Corporation	Insurance	
Company		Corporation	Corporation	Co.		Company		Co.	

- 12 Gross Claims
- 13 Less: Reinsurance Proceeds
- 14 Subtotal (net of reinsurance)15 Less: Haircut Amount

16 Net Claims

- 17 Gross MI Benefit included in ending Loan Loss Reserves
 18 Less: Haircut Amount
- 19 Net MI Benefit included in ending Loan Loss Reserves¹

20 Total Net MI Benefit

¹ Represents amount of MI benefit included in loan loss reserves at the end of the nine-quarter projection period.

NOTE: Seriously delinquent loans are 90 days or more delinquent, or in the process of foreclosure.

Single-Family Credit Summary (BASELINE)

Delinquency Status - CURRENT BOOK

	(\$s in millions)	End of Quarter Unpaid Principal Balance (UPB)											
	Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q 9	_	
3	MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total												
6 7	NON-MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total												
	(\$s in millions)					Loan Loss	Reserve						
	Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q 7	Q8	Q9		
10 11	MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total											_	
14 15	NON-MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total												
	(\$s in millions)			E	nd of Quar	ter Proiecte	ed Charge-	Offs (Undi	scounted \$	is)			
		Most Recent										Nine Quarter Cumulative	
	Loan Status Modified Non-Modified	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total	

Single-Family Credit Summary (BASELINE)

Mark-to-Market Loan-to-Value - CURRENT BOOK

(\$s in millions)				End of Qu	arter Unpaid	Principal Bala	ance (UPB)				
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	_
1 <=80% 2 >80% - 100% 3 >100% 4 Total											
(\$s in millions)					Loan Loss	s Reserve					
Loan Status 5 <=80% 6 >80% - 100% 7 >100% 8 Total	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	_
(\$s in millions)				End of C	uarter Projec	ted Charge-C	Offs (Undiscou	unted \$s)			
Loan Status 9 <=80% 10 >80% - 100%	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
9 <=80%	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	_

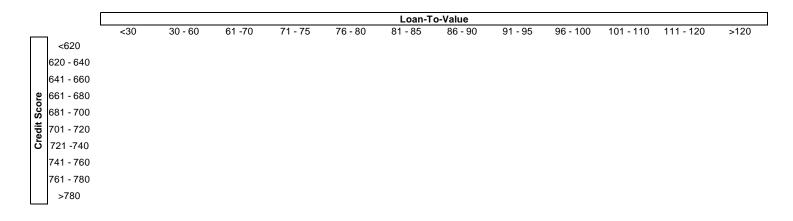
Single-Family Credit Summary (BASELINE)

Vintage Status - CURRENT BOOK

(\$s in millions)				End of Qu	arter Unpaid	Principal Bala	nce (UPB)				
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q 7	Q8	Q9	_
1 2004 and prior 2 2005 3 2006 4 2007 5 2008 6 2009 7 2010 8 2011 9 2012 10 2013 11 2014 12 2015 13 2016 14 2017											
(\$s in millions)					Loan Loss	Reserve					
	Most Recent										
Loan Status	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	<u> </u>
15 2004 and prior 16 2005 17 2006 18 2007 19 2008 20 2009 21 2010 22 2011 23 2012 24 2013 25 2014 26 2015 27 2016 28 2017											
(\$s in millions)				End of Q	uarter Projec	ted Charge-C	offs (Undiscou	inted \$s)			
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
29 2004 and prior 30 2005 31 2006 32 2007 33 2008 34 2009 35 2010 36 2011 37 2012 38 2013 39 2014 40 2015 41 2016 42 2017											

(\$s in millions)

Single-Family - 9 Quarter Cumulative Credit Losses (BASELINE)



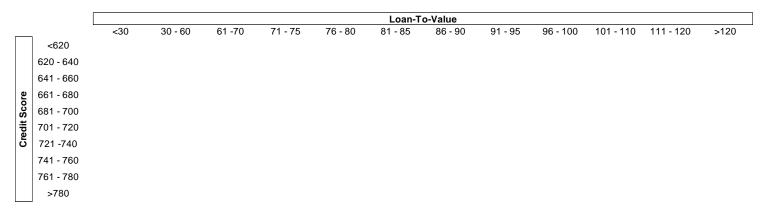
Credit losses represent the summation of net charge-offs and foreclosed property expenses (REO).

Use LTV and credit score as of December 31, 2017.

(\$s in millions)

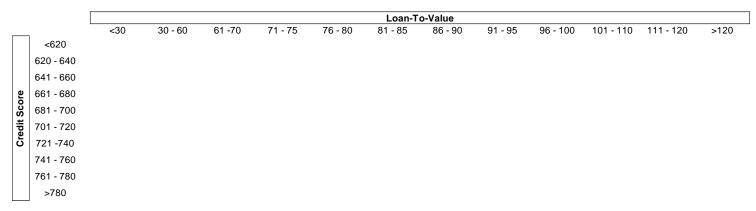
Single-Family - Loan Loss Reserves (BASELINE)

Loan Loss Reserves as of 12/31/17



Use LTV and credit score as of December 31, 2017

Loan Loss Reserves at 3/31/20 (end of nine quarters)



Use LTV and credit score as of December 31, 2017

Single-Family Credit Summary (BASELINE) Vintage and MTMLTV Status - CURRENT BOOK

s in millions)		End of Quarter (UPB)			Cumi	ılative Unpaid Pri	incipal Balance ((UPB)			End of Quarter (UPB)
Loan Status at	10/21/17	Most Recent Quarter	Inflows	Cumulative Defaults ¹	Cumulative Prepays ²	Run-off ³	Other ⁴	Migrate to <=80%	Migrate to 80% - 100%	Migrate to >100%	Q9
LUAIT Status at	<=80%	Quarter	IIIIOWS	Deraulis	Fiepays	Ruiroii	Other	X=0076	- 100 /6	>10078	Qə
2004 and prior	80% - 100%	}									
·	>100%	j									
	<=80%	į									
2005 - 2008	80% - 100%	}									
	>100%										
	<=80%	i									
2009 and Later	80% - 100%	ļ									
	>100%	}									

s in millions)		Loan Loss Reserves									
			Cumulative	Provision for							
Loan Status a	t 12/31/17	Beginning	Charge-offs	Credit Losses	Other	Ending					
	<=80%										
2004 and prior	80% - 100%										
	>100%										
	<=80%										
2005 - 2008	80% - 100%										
	>100%										
	<=80%										
2009 and Later	80% - 100%										
	>100%										

¹ Amount depicts principal balance of loans that are in the process of foreclosure.

 $^{^{2}\,\}mathrm{Amount}$ depicts principal balance of loans that have prepaid through refinance.

³ Amount depicts reduction in principal balance due to amortization.

 $^{^{\}rm 4}$ Amount includes NPL sales and other miscellaneous items.

Single-Family Credit Summary (BASELINE)
Vintage and Delinquency Status - CURRENT BOOK

(\$s in millions)			End of Quarter (UPB)					Cumulative U	Jnpaid Principal B	alance (UPB)					End of Quarter (UPB)
			Most Recent		Cumulative	Cumulative	- 43	a., 4	Migrate to Modified	Migrate to Modified	Migrate to Modified	Migrate to Non-Modified	Migrate to Non-Modified	Migrate to Non-Modified	
Lc	an Status at 12/31/17		Quarter	Inflows	Defaults ¹	Prepays ²	Run-off ³	Other ⁴	Current	<90 Days	SDQ	Current	<90 Days	SDQ	Q9
	Modified	Current <90 Days SDQ													
2004 and prior															
	Non-Modified	Current <90 Days SDQ													
		SDQ													
	Modified	Current <90 Days SDQ													
2005 - 2008			ļ												
	Non-Modified	Current <90 Days SDQ													
	Modified	Current <90 Days SDQ													
2009 and Later															
	Non-Modified	Current <90 Days SDQ													

(\$s in millions)				L	oan Loss Reserves Provision for	i	
Loan	Status at 12/31/17		Beginning	Charge-offs	Credit Losses	Other	Ending
	Modified	Current <90 Days SDQ					
2004 and prior							
	Non-Modified	Current <90 Days SDQ					
	Modified	Current <90 Days SDQ					
2005 - 2008							
	Non-Modified	Current <90 Days SDQ					
	Modified	Current <90 Days SDQ					
2009 and Later							
	Non-Modified	Current <90 Days SDQ					

¹ Amount depicts principal balance of loans that are in the process of foreclosure.
² Amount depicts principal balance of loans that have prepaid through refinance.
³ Amount depicts reduction in principal balance due to amontzation.
⁴ Amount depicts evaction in principal balance due to amontzation.

Single-Family Credit Summary (BASELINE) MTMLTV and Delinquency Status - CURRENT BOOK

(\$s in millions)			End of Quarter (UPB)					Cumulative L	Inpaid Principal B						End of Quarter (UPB)
ı	_oan Status at 12/31/17		Most Recent Quarter	Inflows	Cumulative Defaults ¹	Cumulative Prepays ²	Run-off ³	Other ⁴	Migrate to Modified Current	Migrate to Modified <90 Days	Migrate to Modified SDQ	Migrate to Non-Modified Current	Migrate to Non-Modified <90 Days	Migrate to Non-Modified SDQ	Q9
	Modified	Current <90 Days SDQ				-1-2-									
<=80%	Non-Modified	Current <90 Days SDQ													
80% - 100%	Modified	Current <90 Days SDQ													
30 % - 100 %	Non-Modified	Current <90 Days SDQ													
>100%	Modified	Current <90 Days SDQ													
>100%	Non-Modified	Current <90 Days SDQ													

s in millions)				L	oan Loss Reserves		
	n Status at 12/31/17		Beginning	Cumulative Charge-offs	Provision for Credit Losses	Other	Ending
<=80%	Modified	Current <90 Days SDQ	Degirining	Charge-ons	Credit Losses	Other	Ending
<=80%	Non-Modified	Current <90 Days SDQ					
000/ 4000/	Modified	Current <90 Days SDQ					
80% - 100%	Non-Modified	Current <90 Days SDQ					
>100%	Modified	Current <90 Days SDQ					
>100%	Non-Modified	Current <90 Days SDQ					

Amount depicts principal balance of loans that are in the process of foreclosure.
 Amount depicts principal balance of loans that have prepaid through refinance.
 Amount depicts reduction in principal balance due to amortization.
 Amount includes NPL sales and other miscellaneous items.

(&s in millions) CAS/STACR 1 Interest Expense 2 Fair Value Gain (Loss) 3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt I suances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter) 16 Outstanding Reference Pool		Credit Risk Transfers - Quarterly (BASELINE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q 5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
1 Interest Expense 2 Fair Value Gain (Loss) 3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions		(\$s in millions)											
2 Fair Value Gain (Loss) 3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions		CAS/STACR											
3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	1												
CIRT/ACIS Premiums Premium Expense Other Expenses Recoveries OTHER Fair Value Gain (Loss) Recoveries Total Income (Loss) CAS/STACR Debt Issuances CIRT/ACIS Transactions CIRT/ACIS Transactions CIRT/ACIS Premiums Expenses CIRT/ACIS Transactions CIRT/ACIS Transactions CIRT/ACIS Transactions CIRT/ACIS Transactions													
CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	4	Recoveries											
6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		CIRT/ACIS Premiums											
OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	7	Recoveries											
9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		OTHER											
10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	8	Fair Value Gain (Loss)	i										
11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		Other Expenses											
12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	10	Recoveries											
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	11	Total Income (Loss)											
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
14 Other Transactions 15 Reference Pool (Quarter)													
15 Reference Pool (Quarter)													
	14	Other Fransactions											
16 Outstanding Reference Pool	15	Reference Pool (Quarter)											
	16	Outstanding Reference Pool											

Income Statement (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
Net interest income (excluding management and guaranty fee income)											
2 Management and guaranty fee income ¹		į									
3 Total net interest income											
4 Other income		!									
5 Total revenue											
O DEO (formalis and proposition and proposition)		į									
6 REO (foreclosed property expense) 7 SOP 03-3 losses, net		į									
8 Security impairments		1									
9 Operational risk losses		į									
10 Administrative expenses											
11 Other expenses		i i									
11 Other expenses											
12 Pre-provision net revenue		i									
13 (Provision) benefit for credit losses											
14 Derivatives gains (losses)		i									
15 Trading gains (losses)		į									
16 Other gains (losses)											
17 Global market shock impact on trading securities and held-for-sale loans		İ									
18 Counterparty default losses		1									
,											
19 Pre-Tax income (loss)		!									
20 (Provision) benefit for federal income taxes		1									
21 Extraordinary gains (losses), net of tax effect		į									
21 Extraordinary game (100000), not or tax offoot											
22 Net income (loss)											
23 Global market shock impact on available-for-sale securities		İ									
23 Global market shock impact on available-ior-sale securities 24 Other comprehensive income		ļ									
24 Other comprehensive income											
25 Comprehensive income (loss)											

¹ Includes guaranty fees received for managing credit risk on mortgage loans of consolidated trusts/PCs.

Capital Roll Forward (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
CAPITAL 1 Beginning capital 2 Senior preferred Treasury draw (prior period) 3 Net income (loss) 4 Less: Dividends 5 Other capital actions 6 Change in AOCI 7 Change in non-controlling/minority interest 8 Other											
9 Ending capital (deficit)											
 Beginning PSPA funding commitment available Treasury draw required Remaining PSPA funding commitment available 											_
OTHER 13 Deferred tax assets, net of allowance 14 Total Assets											

Po	rtfolio Balances (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
RET	AINED PORTFOLIO Agency securities Single-family Multifamily										
3 4 5	Non-Agency securities Private Label Securities (PLS) Commercial Mortgage-backed Securities (CMBS) Other ¹										
6 7	Whole loans Single-family Multifamily										
8	Total retained portfolio										
9	Single-family guaranty book of business										

¹ Other includes mortgage revenue bonds and other

(\$s in millions)

Global Market Shock (ADVERSE)

Applicable

UPB

Q1 Loss

- 1 Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS)
- 2 Commercial Mortgage-backed Securities (CMBS)
- 3 Asset-based Securities (ABS) and other collateral
- 4 Single-Family Agency Securities
- 5 Multifamily Agency Securities
- 6 Municipal Securities
- 7 Single-Family Loans
- 8 Multifamily Loans
- 9 Counterparty Default Risk*
- * Please provide the name and attribution of counterparty default risk by type (eg: derivatives, repo, etc.) of the largest counterparty below:

Counterparty rype Total Fotential income Statement impact		Counterparty Name	Counterparty Type	Total Potential Income Statement Impact
---	--	-------------------	-------------------	---

Derivatives

Repo

Single-Family Mortgage Insurance Provider Multifamily Credit Enhancement Provider

Other

Total

(\$s in millions)

Global Market Shock (ADVERSE)

Applicable UPB

Q1 Loss

TRADING SECURITIES

- 1 Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS)
- 2 Commercial Mortgage-backed Securities (CMBS)
- 3 Asset-based Securities (ABS) and other collateral
- 4 Single Family Agency Securities
- 5 Multifamily Agency Securities
- 6 Municipal Securities
- 7 Counterparty Default Risk

AVAILABLE-FOR-SALE SECURITIES (Post-Tax Amounts)

- 8 Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS)
- 9 Commercial Mortgage-backed Securities (CMBS)
- 10 Asset-based Securities (ABS) and other collateral
- 11 Single Family Agency Securities
- 12 Multifamily Agency Securities
- 13 Municipal Securities

HELD-FOR-SALE LOANS

- 14 Single Family Loans
- 15 Multifamily Loans

(*Credit ratings should be as of December 31, 2017)

										RMBS			D-I	N 5 :			
	Grand Total	Non- Agency Prime	Sub- prime	Option ARMS	Other AltA	Unspec Non- Prime	HELOC	RMBS CDO	RMBS CDS	Credit Basket	PrimeX	ABX / TABX	Prime Whole Loans	Non-Prime Whole Loans	European	Other / Unspecified	R Su
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(*Credit ratings should be as of December 31, 2017)

		mber 31,				ABS							(CMBS				Co	rporate CDO	/ CLO		Warehous	e
							Index			Cash Non										Corporate			
	Grand Total	Autos	Credit Cards	Student Loans		Credit Basket	Tranche s	Other / Unspecified	ABS SubTotal		CMBS CDS	CMBS CDO	Credit Basket	Index Tranches	Whole Loans	Other / Unspecified	CMBS SubTotal	CLO	Other / Unspecified	CDO/CLO SubTotal	Total Size	Total Protection	Other / Unspecified
MV* (\$MM) AAA Total			\$0										\$0			\$0							
Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	ψU	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
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Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
AA Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007	\$0								\$0								\$0			\$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
A Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0								\$0								\$0			\$0			
BBB Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007	\$0								\$0								\$0			\$0			
Unspecified Vintage	\$0	**	60	***	**	**	**	**	\$0	ro.	**		**	***		60	\$0		***	\$0	***	**	**
BB Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007	\$0								\$0								\$0			\$0			
Unspecified Vintage B Total	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
Pre 2006 2006	\$0			-					\$0								\$0 \$0			\$0			
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Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
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Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
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Unspecified Vintage	\$0								\$0								\$0			\$0			
NR Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0								\$0								\$0			\$0			
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Profit/Loss (\$MM)	**	60	60	**	**	**	**	ŧ0		r.	**	**	**	£0.	**	***		L 60	f 0	I to	£0	ŧ0	to.
AAA Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
AA Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007	\$0								\$0								\$0			\$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
A Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0								\$0								\$0			\$0			
BBB Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007	\$0								\$0								\$0			\$0			
Unspecified Vintage BB Total	\$0 \$0	**	\$0	\$0	\$0	\$0	\$0	**	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0			$\vdash \exists$					\$0 \$0			\$0 \$0			
Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage B Total	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006	\$0			-			-	-	\$0							-	\$0		-	\$0	Ψυ	Ψ-	
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0						\vdash		\$0 \$0			$\vdash \exists$					\$0 \$0			\$0 \$0			
<b td="" total<=""><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0			
2007	\$0								\$0								\$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0		\vdash	\$0 \$0			
NR Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0				L	<u> </u>			\$0 \$0		<u> </u>						\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0								\$0		<u> </u>			<u> </u>			\$0			\$0			
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Trading and Other Fair Value Assets Munis (ADVERSE)

Bonds	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening (AFS)	Profit/Loss from OAS Widening (Trading Secs)
AAA				
AA				
A				
BBB				
ВВ				
В				
В <В				
NR				
Bonds Total	\$0	\$0	\$0	\$0
	ą0	\$ 0	40	\$0
1M				
3M 6M				
9M				
1Y				
2Y				
3Y				
5Y				
7Y				
10Y				
15Y				
20Y				
30Y				
Bonds Total	\$0	\$0	\$0	\$0
Loans AAA AA				
A				
BBB				
ВВ				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR				
Loans Total	\$0	\$0	\$0	\$0
1M				
3M				
6M				
9M				
1Y				
2Y				
3Y				
5Y				
7Y				
10Y				
15Y				
20Y				+
30Y				
Loans Total CDS	\$0	\$0	\$0	\$0
AAA				
AA		1		
A				
BBB				
BB		+		1
B				1
<b< td=""><td></td><td></td><td></td><td>1</td></b<>				1
NR CDS Total	**	£0	**	60
CDS Total	\$0	\$0	\$0	\$0
1M				+
3M				1
6M				
9M				
1Y				1
2Y				
3Y				
5Y				
7Y				
10Y				
15Y				
20Y				
30Y				
CDS Total	\$0	\$0	\$0	\$0
CDG I Otal	ΨU	ΨΟ	ΨU	40

Trading and Other Fair Value Assets Munis (ADVERSE)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening (AFS)	Profit/Loss from OAS Widening (Trading Secs)
Indices				,
AAA				
AA				
Α				
BBB				
BB				
B				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR	* 0	*	**	#0
Indices Total	\$0	\$0	\$0	\$0
1M				
3M 6M				
9M				
1Y				
2Y				
3Y				
5Y				
7Y				1
10Y	 			
15Y	 			1
20Y				1
30Y	 			1
Indices Total	\$0	\$0	\$0	\$0
Other / Unspecified Munis	4 5	43	40	
AAA	1			1
AA				1
A				1
BBB				
BB				
В				
<b< td=""><td><u> </u></td><td></td><td></td><td></td></b<>	<u> </u>			
NR				
Other / Unspecified Munis Total	\$0	\$0	\$0	\$0
1M	1	**	7-0	
3M				
6M				
9M				
1Y				
2Y				
3Y				
5Y				
7Y				
10Y				
15Y				
20Y				
30Y				
Other / Unspecified Munis Total	\$0	\$0	\$0	\$0
Grand Total				
AAA	\$0	\$0	\$ 0	\$0
AA	\$0	\$0	\$0	\$0
A	\$0	\$0	\$O	\$0
ввв	\$0	\$0	\$O	\$0
ВВ	\$0	\$0	\$ 0	\$0
В	\$0	\$0	\$O	\$0
<b< td=""><td>\$0</td><td>\$0</td><td>\$O</td><td>\$0</td></b<>	\$0	\$0	\$ O	\$0
NR	\$0	\$0	\$ 0	\$0
Grand Total	\$0	\$0	\$0	\$0
1M	\$0	\$0	\$O	\$0
3M	\$0	\$0	\$O	\$0
6M	\$0	\$0	\$O	\$0
9M	\$0	\$0	\$O	\$0
1Y	\$0	\$ 0	\$O	\$0
2Y	\$0	\$ 0	\$O	\$0
3Y	\$0	\$0	\$ 0	\$0
5Y	\$0	\$ 0	\$O	\$0
7Y	\$0	\$0	\$O	\$0
10Y	\$0	\$ 0	\$O	\$0
15Y	\$0	\$ 0	\$O	\$0
20Y	\$0	\$0	\$O	\$0
30Y	\$0	\$0	\$O	\$0
Grand Total	\$0	\$0	\$0	\$0

Trading & Other Fair Value Assets Template

Agencies (ADVERSE)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening	Profit/Loss from OAS Widening
			(AFS)	(Trading Secs)
US Residential Agency Products	S			
IOs				
POs				
Other CMOs				
Pass-Throughs				
Agency Debt/Debentures				
IOS Index				
POS Index				
MBX Index				
Other Agency Derivatives				
TBA's				
Reverse Mortgages				
Residential Other / Unspecified				
Total	\$0	\$0	\$0	\$0
US Commercial Agency Product Cash Agency CMBS	s]	
Agency CMBS Derivatives				
Commercial Other / Unspecified				
Total	\$0	\$0	\$0	\$0
Non-US Agency Products				ı
AAA			<u> </u>	
AA				
A				
BBB				
BB				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR				
Total	\$0	\$0	\$0	\$0

	Multifamily - Income Statement (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
1 2 3 4	0 0 ,											
5 6 7												
10 11 12	Pre-provision net revenue (Provision) benefit for credit losses Derivatives gains (losses) Gains (losses) on loans Other fair value gains (losses) Global market shock impact on trading securities and held-for-sale loans											
14	Pre-Tax income (loss)											
	Provision (benefit) for federal income taxes Extraordinary gains (losses), net of tax effect											
17	Net income (loss)											
	Global market shock impact on available-for-sale securities Other comprehensive income											
20	Comprehensive income (loss)											

¹ Includes net interest income on multifamily whole loans, GSE multifamily MBS held in the retained portfolio, CMBS, and multifamily MRBs.

 $^{^{2}}$ Includes operational risk losses, administrative expenses, and gains from partnership investments.

(\$s in millions) CAS/STACR 1 Interest Expense 2 Fair Value Gain (Loss) 3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt I Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter) 16 Outstanding Reference Pool		Credit Risk Transfers - Quarterly (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q 5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
1 Interest Expense 2 Fair Value Gain (Loss) 3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions		(\$s in millions)											
2 Fair Value Gain (Loss) 3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions		CAS/STACR											
3 Other Expenses 4 Recoveries CIRT/ACIS Premiums 5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	1	Interest Expense	į										
CIRT/ACIS Premiums Premium Expense Other Expenses Recoveries OTHER Fair Value Gain (Loss) Other Expenses Recoveries Total Income (Loss) CIRT/ACIS Transactions CIRT/ACIS Transactions Other Expenses Recoveries Reference Pool (Quarter)													
CIRT/ACIS Premiums Premium Expense Other Expenses Recoveries OTHER Fair Value Gain (Loss) Recoveries Total Income (Loss) CAS/STACR Debt Issuances CIRT/ACIS Transactions CIRT/ACIS Transactions Other Transactions Reference Pool (Quarter)													
5 Premium Expense 6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	4	Recoveries											
6 Other Expenses 7 Recoveries OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		CIRT/ACIS Premiums											
OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
OTHER 8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
8 Fair Value Gain (Loss) 9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	7	Recoveries											
9 Other Expenses 10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		OTHER											
10 Recoveries 11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		Fair Value Gain (Loss)											
11 Total Income (Loss) 12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)		Other Expenses											
12 CAS/STACR Debt Issuances 13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	10	Recoveries											
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)	11	Total Income (Loss)											
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
13 CIRT/ACIS Transactions 14 Other Transactions 15 Reference Pool (Quarter)													
14 Other Transactions 15 Reference Pool (Quarter)													
15 Reference Pool (Quarter)			i										
	14	Other Transactions											
16 Outstanding Reference Pool	15	Reference Pool (Quarter)											
	16	Outstanding Reference Pool	· ·										

Income Statement (SEVERELY ADVERSE) (without establishing DTA)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
Net interest income (excluding management and guaranty fee income)		i i									
2 Management and guaranty fee income ¹		İ									
3 Total net interest income											
4. Other income											
4 Other income 5 Total revenue		İ									
3 Total revenue		į									
6 REO (foreclosed property expense)		}									
7 SOP 03-3 losses, net		į									
8 Security impairments		}									
9 Operational risk losses		į									
10 Administrative expenses		•									
11 Other expenses		į									
12 Pre-provision net revenue		ļ									
13 (Provision) benefit for credit losses		 									
14 Derivatives gains (losses)		! i									
15 Trading gains (losses)		į									
16 Other gains (losses)		}									
17 Global market shock impact on trading securities and held-for-sale loans		į									
18 Counterparty default losses		į									
19 Pre-Tax income (loss)		i İ									
		!									
20 (Provision) benefit for federal income taxes		į									
21 Extraordinary gains (losses), net of tax effect		ļ									
22 Net income (loss)											
23 Global market shock impact on available-for-sale securities		į									
23 Global market shock impact on available-for-sale securities 24 Other comprehensive income		!									
24 Other comprehensive income		į									
25 Comprehensive income (loss)											

¹ Includes guaranty fees received for managing credit risk on mortgage loans of consolidated trusts/PCs.

Income Statement (SEVERELY ADVERSE) (with establishing DTA)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
 Net interest income (excluding management and guaranty fee income) Management and guaranty fee income¹ Total net interest income 											
4 Other income 5 Total revenue											
6 REO (foreclosed property exp.) 7 SOP 03-3 losses, net 8 Security impairments 9 Operational risk losses 10 Administrative expenses 11 Other expenses											
12 Pre-provision net revenue											
13 (Provision) benefit for credit losses		i 									
 Derivatives gains (losses) Trading gains (losses) Other gains (losses) Global market shock impact on trading securities and held-for-sale loans Counterparty default losses 											
19 Pre-Tax income (loss)		į									
20 (Provision) benefit for federal income taxes21 Extraordinary gains (losses), net of tax effect											
22 Net income (loss)		ļ									
23 Global market shock impact on available-for-sale securities24 Other comprehensive income		 									
25 Comprehensive income (loss)											

¹ Includes guaranty fees received for managing credit risk on mortgage loans of consolidated trusts/PCs.

Capital Roll Forward (SEVERELY ADVERSE) (without establishing DTA)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
CAPITAL											
1 Beginning capital											
 Senior preferred Treasury draw (prior period) 											
3 Net income (loss)											
4 Less: Dividends											
5 Other capital actions6 Change in AOCI											
7 Change in non-controlling/minority interest											
8 Other											
9 Ending capital (deficit)											
Beginning PSPA funding commitment availableTreasury draw required											
12 Remaining PSPA funding commitment available											
OTHER											
13 Deferred tax assets, net of allowance											
13 Deletied tax assets, fiet of allowalice											
14 Total Assets											

(\$s in millions)

Capital Roll Forward (SEVERELY ADVERSE) (with establishing DTA)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
CAPITAL 1 Beginning capital											
Senior preferred Treasury draw (prior period)											
3 Net income (loss)											
4 Less: Dividends											
5 Other capital actions											
6 Change in AOCI											
7 Change in non-controlling/minority interest											
8 Other											
9 Ending capital (deficit)											
10 Beginning PSPA funding commitment available											
11 Treasury draw required											
12 Remaining PSPA funding commitment available											
OTHER											
13 Deferred tax assets, net of allowance											
14 Total Assets											

Portfolio Balances (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
RETAINED PORTFOLIO Agency securities Single-family Multifamily Non-Agency securities Private Label Securities (PLS) Commercial Mortgage-backed Securities (CMBS) Other¹ Whole loans Single-family Multifamily										
8 Total retained portfolio										
9 Single-family guaranty book of business										

¹ Other includes mortgage revenue bonds and other

(\$s in millions)

Global Market Shock (SEVERELY ADVERSE)

Applicable

UPB

Q1 Loss

- 1 Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS)
- 2 Commercial Mortgage-backed Securities (CMBS)
- 3 Asset-based Securities (ABS) and other collateral
- 4 Single-Family Agency Securities
- 5 Multifamily Agency Securities
- 6 Municipal Securities
- 7 Single-Family Loans
- 8 Multifamily Loans
- 9 Counterparty Default Risk*
- * Please provide the name and attribution of counterparty default risk by type (eg: derivatives, repo, etc.) of the largest counterparty below:

Counterparty Name Counterparty Type I otal Potential Income Statement Imp	Counterparty Name	Counterparty Type	Total Potential Income Statement Impact
---	-------------------	-------------------	---

Derivatives

Repo

Single-Family Mortgage Insurance Provider Multifamily Credit Enhancement Provider

Other

Total

(\$s in millions)

Global Market Shock (SEVERELY ADVERSE)

Applicable UPB

Q1 Loss

TRADING SECURITIES

- 1 Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS)
- 2 Commercial Mortgage-backed Securities (CMBS)
- 3 Asset-based Securities (ABS) and other collateral
- 4 Single Family Agency Securities
- 5 Multifamily Agency Securities
- 6 Municipal Securities
- 7 Counterparty Default Risk

AVAILABLE-FOR-SALE SECURITIES (Post-Tax Amounts)

- 8 Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS)
- 9 Commercial Mortgage-backed Securities (CMBS)
- 10 Asset-based Securities (ABS) and other collateral
- 11 Single Family Agency Securities
- 12 Multifamily Agency Securities
- 13 Municipal Securities

HELD-FOR-SALE LOANS

- 14 Single Family Loans
- 15 Multifamily Loans

(*Credit ratings should be as of December 31, 2017)

		mber 31, 2	:017)							RMBS							
	Grand Total	Non- Agency Prime	Sub- prime	Option ARMS	Other AltA	Unspec Non- Prime	HELOC	RMBS CDO	RMBS CDS	Credit Basket	PrimeX	ABX / TABX	Prime Whole Loans	Non-Prime Whole Loans	European RMBS	Other / Unspecified	RMI SubT
IV* (\$MM) AA Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006	\$0	Ψ0	ΨΟ	40	40	J	40	ΨΟ	40	40	40	Ψ0	40	Ψ0	ΨΟ	40	\$0
2006 2007	\$0 \$0																\$0 \$0
Post 2007	\$0																\$0
Inspecified Vintage	\$0				L	1			<u> </u>	L					!	ļ.	\$0
Total re 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0
006	\$0																\$0
007 ost 2007	\$0 \$0																\$0 \$0
nspecified Vintage	\$0																\$0
otal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
e 2006 106	\$0 \$0																\$0 \$0
007 ost 2007	\$0 \$0																\$0 \$0
specified Vintage	\$0																\$0
3 Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
e 2006 06	\$0 \$0																\$1
07	\$0																\$0
ost 2007 ospecified Vintage	\$0 \$0																\$0 \$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
e 2006	\$0				-	-				-			-				\$
06 07	\$0 \$0																\$1
st 2007	\$0																\$
specified Vintage	\$0				<u> </u>				<u> </u>	<u> </u>							\$
otal e 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ \$
06	\$0																\$
07 st 2007	\$0 \$0															<u> </u>	\$ \$
specified Vintage	\$0																\$
Total e 2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
e 2006 06	\$0 \$0																\$ \$
07 st 2007	\$0 \$0																\$ \$
specified Vintage	\$0 \$0																\$
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
e 2006	\$0																\$
006 007	\$0 \$0																\$0 \$0
ost 2007	\$0 \$0																\$0
nspecified Vintage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$(
	ΨΟ	Ψ0	ΨΟ	40	40	Ψ0	ΨΟ	ΨΟ	40	40	Ψ0	40	40	ΨΟ	Ψ	40	φ.
ofit/Loss (\$MM) A Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
re 2006	\$0												1				\$0
006 007	\$0 \$0																\$0 \$0
ost 2007	\$0																\$
nspecified Vintage	\$0		••					••									\$0
Total e 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1
006	\$0																\$
007 ost 2007	\$0 \$0																\$1
specified Vintage	\$0			1					l					L		L	\$
otal	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
e 2006 06	\$0 \$0			<u> </u>												<u>L</u>	\$ \$
07 ost 2007	\$0																\$1
st 2007 specified Vintage	\$0 \$0																\$ \$
B Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
e 2006	\$0 \$0																\$
06 07	\$0														<u></u>		\$
st 2007 specified Vintage	\$0 \$0																\$
Specified Vintage	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
≥ 2006	\$0	\$U	φU	⊅ U	φU	φU	φU	φ 0	φU	φU	φU	φU	φ U	φU	φU	φU	\$
06 07	\$0 \$0																\$
st 2007	\$0																\$
specified Vintage	\$0																\$
otal	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ \$
	\$0 \$0																\$
∋ 2006 06	\$0																\$1
9 2006 06 07	\$0																\$
⊇ 2006 06 07 st 2007	\$0 \$0 \$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
e 2006 06 07 st 2007 specified Vintage Total	\$0 \$0 \$0	\$0															\$
e 2006 06 07 sst 2007 ispecified Vintage Total e 2006	\$0 \$0 \$0 \$0	\$0	40														
a 2006 06 07 st 2007 specified Vintage Total a 2006 06 07	\$0 \$0 \$0	\$0															\$
a 2006 06 07 st 2007 specified Vintage Total a 2006 06 07 st 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0															\$
e 2006 06 07 sst 2007 sspecified Vintage Total e 2006 06 07 sst 2007 sspecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0			60	60	60	60	**	60	60		60	60		***		\$
e 2006 06 07 sst 2007 sspecified Vintage Total e 2006 06 07 sspecified Vintage Total total e 2006 Total total	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ \$
e 2006 06 07 07 sspecified Vintage Total e 2006 06 07 Total e 2007 sspecified Vintage Total e 2006 06	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1
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e 2006 006 007 0012007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

(*Credit ratings should be as of December 31, 2017)

	e as of Dec					ABS							СМВ	S				Co	rporate CDO	/CLO		Warehouse	,
							Index			Cash Non										Corporate			
	Grand Total	Autos	Credit Cards	Student Loans	ABS CDS	Credit Basket	Tranche	Other / Unspecified	ABS SubTotal	Agency CMBS	CMBS				Whole Loans	Other / Unspecified	CMBS SubTotal	CLO	Other / Unspecified	CDO/CLO	Total Size	Total Protection	Other / Unspecified
MV* (\$MM) AAA Total																					\$0	\$0	
Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
AA Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
A Total	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0								\$0 \$0								\$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0								\$0								\$0			\$0			
BBB Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0			_					\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
BB Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0	-	-	-		-			\$0	V		Ŧ			-		\$0			\$0		V	
2007	\$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
B Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0								\$0								\$0			\$0			
<b total<br="">Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006	\$0								\$0								\$0			\$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage	\$0							••	\$0							••	\$0	••		\$0	••	•	••
NR Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Profit/Loss (\$MM)																							
AAA Total	\$0	\$0																					
Pre 2006 2006	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2007	\$0	- V-	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
Post 2007	\$0 \$0 \$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0	\$0	\$0	\$0
Unspecified Vintage	\$0 \$0 \$0								\$0 \$0 \$0 \$0 \$0								\$0 \$0 \$0 \$0 \$0			\$0 \$0 \$0 \$0 \$0			
	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0 \$0 \$0 \$0	\$0	\$0	\$0		\$0	\$0 \$0	\$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
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Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage A Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Post 2007 Unspecified Vintage BB Total Pre 2006 2007 Post 2007 Unspecified Vintage B Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage B Total Pre 2006 2007 Post 2006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$50	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Post 2007 Unspecified Vintage Company Comp	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$50	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Post 2007 Unspecified Vintage B Total Pre 2006 2007 Post 2007 Unspecified Vintage CB Total Pre 2006 2007 Post 2007 Unspecified Vintage Vintage CB Total Pre 2006 2007 Post 2007 Unspecified Vintage R Total Pre 2006 2007 Post 2007 Unspecified Vintage R Total Pre 2006 2007 Post 2007 Po	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	50 50 50 50 50	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0
Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BT Total Pre 2006 2007 Unspecified Vintage BT Total Pre 2006 2007 Unspecified Vintage Unspecified Vintage BT Total Pre 2006 2007 Unspecified Vintage BT Total Pre 2006 2007 Unspecified Vintage BT Total Pre 2006 2007 Post 2007 Unspecified Vintage BT Total Pre 2006 2007 Post 2007 Unspecified Vintage BT Total Pre 2006 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007 Post 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	50 50 50 50 50	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0
Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage A Total Pre 2006 2007 Post 2007 Unspecified Vintage BBB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage BB Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Unspecified Vintage B Total Pre 2006 2007 Post 2007 Unspecified Vintage B Total Pre 2006 2007 Prest 2007 Unspecified Vintage NR Total Pre 2006 2006 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	50 50 50 50 50	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0

Trading and Other Fair Value Assets Munis (Severely Adverse)

	M∨ (\$MM)	M∨ (\$MM)	Profit/Loss	Profit/Loss
	Available-for-Sale	Trading	from OAS	from OAS
	Securities	Securities	Widening	Widening
	000000	occai ince	(AFS)	(Trading Secs)
Bonds				
AAA				
AA				
A				
BBB				
вв				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR				
Bonds Total	\$0	\$0	\$0	\$0
1M				
3M				1
6M				
9M		1		1
1Y				
2Y				
3Y				+
5Y				1
7Y	4		-	1
	4			1
10Y				1
15Y	4			+
20Y				+
30Y				
Bonds Total	\$0	\$0	\$0	\$0
Loans				
AAA				
AA				
A				
BBB				
BB				
В		1		
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR				
Loans Total	\$0	\$0	\$0	\$0
1M	\$0	40	30	\$0
3M				+
6M				+
9M				
1Y				
2Y				
3Y				
5Y				
7Y				
10Y				
15Y				
20Y				
30Y				
Loans Total	\$0	\$0	\$0	\$0
			·	
CDS				
AAA	1			
AA				
A				1
BBB				1
BB	 			1
BB B	1			1
	1		-	1
<b ND</b 				1
NR CDS Total	60	\$0	**	40
CDS Total	\$0	\$0	\$0	\$0
1M	4		<u> </u>	+
3M	4			+
6M				1
9M				1
1Y				1
2Y				
3Y				
5Y				
7Y				
10Y				
15Y				
20Y				
30Y				1
CDS Total	\$0	\$0	\$0	\$0
	4 5	~~	Ψ	

Trading and Other Fair Value Assets Munis (Severely Adverse)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening	Profit/Loss from OAS Widening
Indices			(AFS)	(Trading Secs)
AAA				
AA				-
A				
BBB				
вв				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR				
Indices Total	\$0	\$0	\$0	\$0
1M		-	-	
3M				
6M				
9M				
1Y				
2Y				
3Y				
5Y				
7Y				1
10Y		1		1
15Y		1		1
20Y				1
30Y				
Indices Total	\$0	\$0	\$0	\$0
Other / Unspecified Munis				
AAA				
AA				
A				
ввв				
вв				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR				
Other / Unspecified Munis Total	\$0	\$0	\$0	\$0
1M		-	-	
3M				
6M				
9M				
1Y				
2Y				
3Y				
5Y				
7Y				
10Y				-
15Y				
20Y				
30Y				
Other / Unspecified Munis Total	\$0	\$0	\$0	\$0
	* -	* -	• -	
Grand Total				
AAA	\$0	\$ 0	\$0	\$0
AA	\$0	\$0	\$0	\$0
A	\$0	\$0	\$0	\$0
ВВВ	\$0	\$0	\$0	\$0
BB	\$0	\$0	\$0	\$0
В	\$0	\$O	\$0	\$0
<b< td=""><td>\$0</td><td>\$O</td><td>\$0</td><td>\$0</td></b<>	\$0	\$O	\$0	\$0
NR	\$0	\$O	\$0	\$0
Grand Total	\$0	\$0	\$0	\$0
1M	\$0	\$0	\$0	\$0
3M	\$0	\$0	\$0	\$0
6M	\$0	\$0	\$0	\$0
9M	\$0	\$0	\$0	\$0
1Y	\$0	\$0	\$0	\$0
2Y	\$0	\$0	\$0	\$0
3Y	\$0	\$0	\$0	\$0
5Y	\$0	\$0	\$0	\$0
7Y	\$0	\$0	\$0	\$0
10Y	\$0	\$0	\$0	\$0
15Y	\$0	\$0	\$0	\$0
20Y	\$0	\$0	\$0	\$0
30Y	\$0	\$0	\$0	\$0
Grand Total	\$0	\$0	\$0	\$0
	+ -		ΨΟ	

Trading & Other Fair Value Assets Template

Agencies (Severely Adverse)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening	Profit/Loss from OAS Widening
	Securities	Securities	(AFS)	(Trading Secs)
US Residential Agency Products	S			
IOs .				
POs				
Other CMOs				
Pass-Throughs				
Agency Debt/Debentures				
IOS Index				
POS Index				
MBX Index				
Other Agency Derivatives				
TBA's				
Reverse Mortgages				
Residential Other / Unspecified				
Total	\$0	\$0	\$0	\$0
US Commercial Agency Produc	ts			1
Cash Agency CMBS			-	
Agency CMBS Derivatives				
Commercial Other / Unspecified	40	40		**
Total	\$0	\$0	\$0	\$0
Non-US Agency Dreducts				
Non-US Agency Products AAA	T T			
IAA			+ -	
A			1	
BBB			+ -	
BB			+ -	
B			+ -	
D < B			+ -	
INR				
Total	\$0	\$0	\$0	\$0
i Otai	φυ	Ψυ	ΨΟ	ΨU

<u>(</u>	Credit Overview - Quarterly (SEVERELY ADVERSE) (includes single-family and multifamily)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
то	TAL PORTFOLIO											
1 2 3 4	CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses											
5	Credit Expenses											
6 7 8 9	LOAN LOSS RESERVE (\$s in millions) Beginning loan loss reserve Net charge-offs Provison (benefit) for loan losses Other											
10	Ending Total Loan Loss Reserve		 									
11	Unpaid Principal Balance (\$s in millions)											

¹ Amount depicts the summation of foreclosed property expense and provision for credit losses.

Multifamily - Income Statement (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
 Net interest income¹ Management and guaranty fee income Other non-interest income Total revenue 											
 5 REO (foreclosed property exp.) 6 Security impairments 7 Other expenses² 											
 8 Pre-provision net revenue 9 (Provision) benefit for credit losses 10 Derivatives gains (losses) 11 Gains (losses) on loans 12 Other fair value gains (losses) 13 Global market shock impact on trading securities and held-for-sale loans 											
14 Pre-Tax income (loss)											
15 Provision (benefit) for federal income taxes16 Extraordinary gains (losses), net of tax effect											
17 Net income (loss)											
18 Global market shock impact on available-for-sale securities19 Other comprehensive income											
20 Comprehensive income (loss)											

¹ Includes net interest income on multifamily whole loans, GSE multifamily MBS held in the retained portfolio, CMBS, and multifamily MRBs.

 $^{^{2}}$ Includes operational risk losses, administrative expenses, and gains from partnership investments.

	ultifamily Credit Overview - Quarterly (SEVERELY ADVERSE) TAL PORTFOLIO	Most Recent Quarter	Q1	Q2	Q3	Q4_	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
1 2 3 4 5	Credit losses											
6 7 8 9 10	LOAN LOSS RESERVE (\$s in millions) Beginning loan loss reserve Net charge-offs Provison (benefit) for loan losses Other Ending Total Loan Loss Reserve Unpaid Principal Balance (\$s in millions)											

 $^{^{\}rm 1}$ Amount depicts the summation of foreclosed property expense and provision for credit losses.

	Multifamily Key Metrics (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
	(\$s in millions)											
1	Total multifamily market volume (industry)											
3 4	Enterprise market share percentage New acquisition volume Liquidation volume Securitization volume											
6	Effective guaranty fee rate ² (bps)											
	Guaranty portfolio balance Loans and securities held in portfolio											

 $^{^{\}rm 1}$ Includes property sales and other run-off/prepayments.

² Guaranty fee income divided by weighted average portfolio balance.

	Most Recent										Nine Quarter Cumulative
Single-Family Credit Overview - Quarterly (SEVERELY ADVERSE)	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total
TOTAL PORTFOLIO CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses Credit Expenses 1											_
LOAN LOSS RESERVE (\$s in millions) 6 Beginning loan loss reserve 7 Net charge-offs 8 Provison (benefit) for loan losses/guaranty losses 9 Other 10 Ending Total Loan Loss Reserve											
Memo: 11 FAS 5 Loan Loss Reserve 12 FAS 114 Loan Loss Reserve 13 Concessions in FAS 114 Loan Loss Reserve 2 14 Unpaid Principal Balance (\$s in millions)											
The company state of (40 th thin state)											
		! !									
CURRENT BOOK (as of 12/31/17) CREDIT EXPENSES (\$s in millions) 15 Foreclosed property expense (REO) 16 Net charge-offs 17 Credit losses 18 Provision for credit losses 19 Credit Expenses 1											
LOAN LOSS RESERVE (\$s in millions) 20 Beginning loan loss reserve 21 Net charge-offs 22 Provison (benefit) for loan losses/guaranty losses 23 Other 24 Ending Loan Loss Reserve - Current Book											
25 Unpaid Principal Balance (\$s in millions)											
NEW BUSINESS											
CREDIT EXPENSES (\$s in millions) Foreclosed property expense (REO) Net charge-offs Credit losses Provision for credit losses Credit Expenses 1											
LOAN LOSS RESERVE (\$s in millions) Beginning loan loss reserve Net charge-offs Provison (benefit) for loan losses/guaranty losses Other											
35 Ending Loan Loss Reserve - New Business											
36 Unpaid Principal Balance (\$s in millions)		ļ									

¹ Amount depicts the summation of foreclosed property expense, provision for credit losses, and SOP 03-3 losses. ² Amount includes the impact of all troubled debt restructuring (TDR) related impairments.

	Single-Family Credit Overview - Quarterly (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q 5	Q6	Q7	Q8	Q9
	SERIOUSLY DELINQUENT LOAN ACTIVITY (count in '000s)										
1	Beginning seriously delinquent loans	j									
2	Seriously delinquent inflows - new SDQ										
3	Seriously delinquent inflows - cured	İ									
4	Seriously delinquent cured by modification										
5	Seriously delinquent - cured	İ									
6	Seriously delinquent to default										
7	Seriously delinquent to payoff										
8	Ending Seriously Delinquent Loans										
9 10	Ending seriously delinquent rate (%) Aggregate UPB of seriously delinquent loans (\$s in millions)										

11 Loan modifications (count in 000s)

(\$s in millions)

PRIVATE MORTGAGE INSURERS - OVERVIEW (Nine Quarter Cumulative Totals)

Arch		Genworth	Mortgage	PMI		Republic		United	
	Essent	Mortgage	Guaranty	Mortgage	Radian	Mortgage	Triad Guaranty	Guaranty	
Mortgage	Guaranty.	wortgage	Guaranty	wortgage	Guaranty	wortgage	Insurance	Residential	Other
Insurance		Insurance	Insurance	Insurance	,	Insurance			Other
Company	Inc.	Corporation	Corporation	Co.	Inc.	Company	Corporation	Insurance	
Company		Corporation	Corporation	CO.		Company		Co.	

- 12 Gross Claims
- Less: Reinsurance Proceeds
 Subtotal (net of reinsurance)
 Less: Haircut Amount

16 Net Claims

- 17 Gross MI Benefit included in ending Loan Loss Reserves
 18 Less: Haircut Amount
- 19 Net MI Benefit included in ending Loan Loss Reserves¹

20 Total Net MI Benefit

¹ Represents amount of MI benefit included in loan loss reserves at the end of the nine-quarter projection period.

NOTE: Seriously delinquent loans are 90 days or more delinquent, or in the process of foreclosure.

Single-Family Credit Summary (SEVERELY ADVERSE)

Delinquency Status - CURRENT BOOK

	(\$s in millions)			En	d of Quarte	er Unpaid F	rincipal Ba	alance (UP	В)			
	Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	_
3	MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total											
6 7	NON-MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total											-
	(\$s in millions)					Loan Loss	Reserve					_
	Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	
10 11	MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total											_
14 15	NON-MODIFIED LOANS Current Less than 90 days delinquent Seriously delinquent (90 days or more delinquent or in the process of foreclosure) Total											
	(\$s in millions)			E	nd of Quar	ter Projecte	ed Charge-	-Offs (Undi	scounted \$	Ss)		
		Most Recent						_				Nine Quarter Cumulative
	Loan Status Modified Non-Modified	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total

Single-Family Credit Summary (SEVERELY ADVERSE)

Mark-to-Market Loan-to-Value - CURRENT BOOK

(\$s in millions)	End of Quarter Unpaid Principal Balance (UPB)											
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	_	
1 <=80% 2 >80% - 100% 3 >100% 4 Total												
(\$s in millions)					Loan Loss	s Reserve						
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9		
5 <=80% 6 >80% - 100% 7 >100% 8 Total												
(\$s in millions)				End of C	uarter Projec	ted Charge-C	Offs (Undisco	unted \$s)				
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q 5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total	
9 <=80% 10 >80% - 100% 11 >100%												

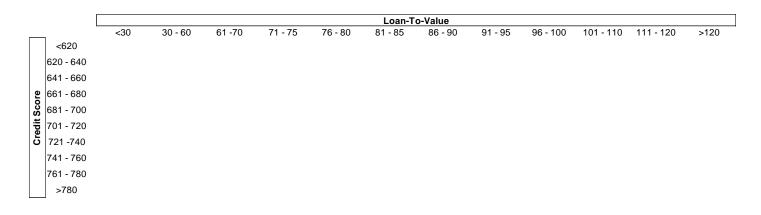
Single-Family Credit Summary (SEVERELY ADVERSE)

Vintage Status - CURRENT BOOK

(\$s in millions)	End of Quarter Unpaid Principal Balance (UPB)										
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	_
1 2004 and prior 2 2005 3 2006 4 2007 5 2008 6 2009 7 2010 8 2011 9 2012 10 2013 11 2014 12 2015 13 2016 14 2017											
(\$s in millions)	Loan Loss Reserve										
Loan Status	Most Recent Quarter	Q1	Q2	Q3	Q4	Q 5	Q6	Q 7	Q8	Q9	
15 2004 and prior 16 2005 17 2006 18 2007 19 2008 20 2009 21 2010 22 2011 23 2012 24 2013 25 2014 26 2015 27 2016 28 2017											
(\$s in millions)	End of Quarter Projected Charge-Offs (Undiscounted \$s)										
Loan Status 29 2004 and prior 30 2005 31 2006 32 2007 33 2008 34 2009 35 2010 36 2011 37 2012 38 2013 39 2014 40 2015 41 2016	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
36 2011 37 2012 38 2013 39 2014											

(\$s in millions)

Single-Family - 9 Quarter Cumulative Credit Losses (SEVERELY ADVERSE)



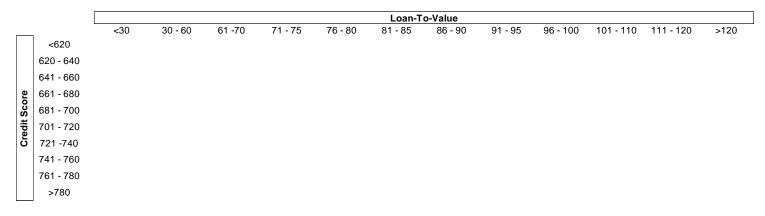
Credit losses represent the summation of net charge-offs and foreclosed property expenses (REO).

Use LTV and credit score as of December 31, 2017.

(\$s in millions)

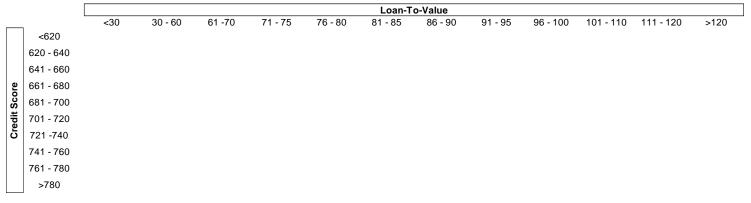
Single-Family - Loan Loss Reserves (SEVERELY ADVERSE)

Loan Loss Reserves as of 12/31/17



Use LTV and credit score as of December 31, 2017

Loan Loss Reserves at 3/31/20 (end of nine quarters)



Use LTV and credit score as of December 31, 2017

Single-Family Credit Summary (SEVERELY ADVERSE)

Vintage and MTMLTV Status - CURRENT BOOK

Ss in millions)		End of Quarter (UPB)										
		Most Recent		Cumulative	Cumulative			Migrate to	Migrate to 80%	Migrate to	1	
Loan Status at 12/31/17		Quarter	Inflows	Defaults ¹	Prepays ²	Run-off ³	Other ⁴	<=80%	- 100%	>100%	Q9	
2004 and prior	<=80% 80% - 100% >100%											
	<=80%	-										
2005 - 2008	80% - 100%											
	>100%											
2009 and Later	<=80% 80% - 100% >100%											

is in millions)			L	oan Loss Reserves	3	
			Cumulative	Provision for		
Loan Status a	t 12/31/17	Beginning	Charge-offs	Credit Losses	Other	Ending
	<=80%					
2004 and prior	80% - 100%					
	>100%					
	<=80%					
2005 - 2008	80% - 100%					
	>100%					
	<=80%					
2009 and Later	80% - 100%					
	>100%					

¹ Amount depicts principal balance of loans that are in the process of foreclosure.

 $^{^2\,\}mathrm{Amount}$ depicts principal balance of loans that have prepaid through refinance.

³ Amount depicts reduction in principal balance due to amortization.

 $^{^{\}rm 4}$ Amount includes NPL sales and other miscellaneous items.

Single-Family Credit Summary (SEVERELY ADVERSE) Vintage and Delinquency Status - CURRENT BOOK

(\$s in millions)			End of Quarter (UPB)					Cumulative L	Inpaid Principal B	alance (UPB)					End of Quarter (UPB)
Loa	n Status at 12/31/17		Most Recent Quarter	Inflows	Cumulative Defaults ¹	Cumulative Prepays ²	Run-off ³	Other ⁴	Migrate to Modified Current	Migrate to Modified <90 Days	Migrate to Modified SDQ	Migrate to Non-Modified Current	Migrate to Non-Modified <90 Days	Migrate to Non-Modified SDQ	Q9
	Modified	Current <90 Days SDQ													
2004 and prior	Non-Modified	Current <90 Days SDQ						_		_					=
2005 - 2008	Modified	Current <90 Days SDQ													
	Non-Modified	Current <90 Days SDQ													
2009 and Later	Modified	Current <90 Days SDQ													
2009 and Later	Non-Modified	Current <90 Days SDQ													

					I D		
s in millions)				Cumulative	oan Loss Reserves Provision for	3	
Loan	Status at 12/31/17		Beginning	Charge-offs	Credit Losses	Other	Ending
	Modified	Current <90 Days SDQ					
2004 and prior	Non-Modified	Current <90 Days SDQ					
2005 - 2008	Modified	Current <90 Days SDQ					
2003 - 2008	Non-Modified	Current <90 Days SDQ					
0000 11	Modified	Current <90 Days SDQ					
2009 and Later	Non-Modified	Current <90 Days SDQ					

¹ Amount depicts principal balance of loans that are in the process of foreclosure.
² Amount depicts principal balance of loans that have prepaid through refinance.
³ Amount depicts reduction in principal balance due to amortization.
⁴ Amount includes NPL sales and other miscellaneous items.

Single-Family Credit Summary (SEVERELY ADVERSE) MTMLTV and Delinquency Status - CURRENT BOOK

(\$s in millions)			End of Quarter (UPB)					Cumulative L	Inpaid Principal B						End of Quarter (UPB)
	Loan Status at 12/31/17		Most Recent Quarter	Inflows	Cumulative Defaults ¹	Cumulative Prepays ²	Run-off ³	Other ⁴	Migrate to Modified Current	Migrate to Modified <90 Days	Migrate to Modified SDQ	Migrate to Non-Modified Current	Migrate to Non-Modified <90 Days	Migrate to Non-Modified SDQ	Q9
<=80%	Modified	Current <90 Days SDQ				. ,							·		
<=00%	Non-Modified	Current <90 Days SDQ													
80% - 100%	Modified	Current <90 Days SDQ													
80% - 100%	Non-Modified	Current <90 Days SDQ													
>100%	Modified	Current <90 Days SDQ													
210078	Non-Modified	Current <90 Days SDQ													

s in millions)				L	oan Loss Reserves	3	
Loa	n Status at 12/31/17		Beginning	Cumulative Charge-offs	Provision for Credit Losses	Other	Ending
<=80%	Modified	Current <90 Days SDQ					
<=00%	Non-Modified	Current <90 Days SDQ					
	Modified	Current <90 Days SDQ					
80% - 100%	Non-Modified	Current <90 Days SDQ					
>100%	Modified	Current <90 Days SDQ					
>100%	Non-Modified	Current <90 Days SDQ					

<sup>Amount depicts principal balance of loans that are in the process of foreclosure.
Amount depicts principal balance of loans that have prepaid through refinance.
Amount depicts reduction in principal balance due to amortization.
Amount includes NPL sales and other miscellaneous items.</sup>

	Credit Risk Transfers - Quarterly (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q 5	Q6	Q7	Q8	Q9	Nine Quarter Cumulative Total
	(\$s in millions)											
	CAS/STACR											
1	Interest Expense											
2	Fair Value Gain (Loss)		! !									
3	Other Expenses											
4	Recoveries											
	CIRT/ACIS Premiums											
5	Premium Expense		İ									
6	Other Expenses											
7	Recoveries		 									
	OTHER		İ									
8	Fair Value Gain (Loss)											
9	Other Expenses											
10	Recoveries											
11	Total Income (Loss)											
			İ									
12	CAS/STACR Debt Issuances	}										
13	CIRT/ACIS Transactions											
14	Other Transactions											
15	Reference Pool (Quarter)		i I									
	· · · · · · · · · · · · · · · · · · ·											
16	Outstanding Reference Pool	ļ	!									

Enterprise Dodd-Frank Act Stress Test Template - SEVERELY ADVERSE (Disclosure to the Public)

Cumulative Projected Financial Metrics (Q1 2018 - Q1 2020)

Results without establishing valuation allowance on deferred tax assets

Billions of

dollars

Percent of average assets⁶

Impact of establishing valuation allowance on deferred tax assets

Results with establishing valuation allowance on deferred tax assets

Billions of Percent of average assets⁶

- 1 Pre-provision net revenue¹
- 2 (Provision) benefit for credit losses
- 3 Mark-to-market gains (losses)²
- 4 Global market shock impact on trading securities and counterparty
- 5 Net income before taxes
- 6 (Provision) benefit for taxes
- 7 Other comprehensive income (loss)³
- 8 Total comprehensive income (loss)
- 9 Dividends paid
- 10 PSPA funding commitment as of December 31, 2017
- 11 Treasury draws required
- 12 Remaining PSPA funding commitment
- 13 Credit losses⁴
- 14 Credit losses (% of average portfolio balance)⁵

¹ Includes net interest income, security impairments, operational risk losses, foreclosed property income (expense), and other non-interest income/expenses.

² Includes fair value gains (losses) on derivative and trading securities, and other gains (losses) on investment securities.

³ Includes global market shock impact on available-for-sale securities.

⁴ Credit losses are defined as charge-offs, net plus foreclosed property expenses.

⁵ Average portfolio balance over the nine-quarter planning horizon.

⁶ Average total assets over the nine-quarter planning horizon.

Appendix 3: FHFA DFAST Reporting Templates - FHLBanks

Stress Test Template Instructions
All numbers should be report in millions to two decimal places, except for capital ratios and credit enhancements in percentage.
2. Reported numbers should reflect the 12/31/2017 start date.

Scenario Templates Cover Sheet										
Each regulated entity is expected to provide input data for all the tabs in this spreadsheet.										
Institution Name:										
Date of Data Submission:										
Institution Contact Name:										
Institution Contact Phone Number:										
Institution Contact Email Address:										

Supplied Scenario Variables

(Please indicate which scenarios were used in your model by checking the appropriate box:)

Domestic Variables	International Variables
Real GDP Growth	☐ Euro Area Real GDP Growth
☐ Nominal GDP Growth	☐ Euro Area Inflation
Real Disposable Income Growth	☐ Euro Area Bilateral Dollar Exchange Rate (\$/euro)
Nominal Disposable Income Growth	Developing Asia Real GDP Growth
Unemployment Rate	Developing Asia Inflation
CPI Inflation Rate	Developing Asia Bilateral Dollar Exchange Rate (F/UDS, indes, base = 2000,Q1)
3-month Treasury Yield	☐ Japan Real GDP Growth
5-year Treasury Yield	☐ Japan Inflation
10-year Treasury Yield	☐ Japan Bilateral Dollar Exchange Rate (yen/USD)
BBB Corporate Yield	U.K. Real GDP Growth
☐ Mortgage Rate	U.K. Inflation
Prime Rate	U.K. Bilaeral Dollar Exchange Rate (USD/pound)
☐ Dow Jones Total Stock Market Index	
☐ House Price Index	
Commercial Real Estate Price Index	
Market Volatility Index (VIX)	
Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Assetbased Securities (ABS), Commercial Mortgage-backed Securities (CMBS) and other collateral	
Agency Securities Option-Adjusted Spreads (OAS)	
Municipal Securities	
Counterparty Default Risk	
For variables not used, please provide a brief explanation belo	w as to why it was not used:
Variable Name	Explanation
1	
2	
3	
4	
5	

Scenario Variables Beyond Those Supplied

	Baseline Scenario (additional v	ariables used beyond those supplied)
Variable		
Number	Variable Name	Variable Definition
1		
2		
3		
4		
5		
	Advances to to different	
	Adverse Scenario (additional vo	ariables used beyond those supplied)
Variable		
Number	Variable Name	Variable Definition
1		
2		
3		
4		
5		
	Severely Adverse Scenario (addition	nal variables used beyond those supplied)
Variable		
Number	Variable Name	Variable Definition
1		
2		
<i>3</i>		
4		
5		

Baseline

Spread Assumptions

Spread to Benchmark

		Actual					Projected				
Category	Benchmark	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Example: Advance	3-Month LIBOR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0

Variables Used Beyond Those Supplied

	Actual				l	Projected				
Variable Name	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9

Forward Curve

	Actual				Projected						
Maturity	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	
3-Month Treasury	1.2	1.4	1.7	1.9	2.1	2.2	2.4	2.5	2.6	2.7	
6-Month											
1 year											
2 year											
5 year Treasury	2.1	2.2	2.4	2.5	2.7	2.8	2.8	2.9	2.9	3.0	
10 year Treasury	2.4	2.6	2.7	2.8	2.9	3.1	3.1	3.2	3.3	3.5	
15 year											
30 year											

House Price Index

 $(\textit{NOTE: For printing purposes dates only goes to Oct-18.}\ However, the underlying excel spreadsheet collects 30\ years of data.)$

	Actual		Projected								
Region	4Q 2017	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18

Region 1

Region 2

.

Adverse

Spread Assumptions

Spread to Benchmark

		Actual					rojected				
Category	Benchmark	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Example: Advance	3-Month LIBOR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0

Variables Used Beyond Those Supplied

	Actual					Projected				
Variable Name	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9

Forward Curve

	Actual					Projected						
Maturity	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9		
3-Month Treasury	1.2	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
6-Month												
1 year												
2 year												
5 year Treasury	2.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.7		
10 year Treasury	2.4	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.6		
15 year												
30 year												

House Price Index

 $(\textit{NOTE: For printing purposes dates only goes to Oct-18.}\ However, the underlying excel spreadsheet collects 30\ years of data.)$

	Actual					Projected					
Region	4Q 2017	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18

Region 1

Region 2

.

.

Severely Adverse

Spread Assumptions

Spread to Benchmark

		Actual			-	1	Projected				
Category	Benchmark	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Example: Advance	3-Month LIBOR	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0	15.0

Variables Used Beyond Those Supplied

_		Actual				P	rojected				
	Variable Name	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9

Forward Curve

	Actual				Pro	ojected				
Maturity	4Q 2017	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
3-Month Treasury	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6-Month										
1 year										
2 year										
5 year Treasury	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
10 year Treasury	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
15 year										
30 year										

House Price Index

(NOTE: For printing purposes dates only go to Oct-18. However, the underlying excel spreadsheet collects 30 years of data.)

	Actual				P	rojected					
Region	40 2017	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18

Region 1 Region 2

Most Recent Income Statement - Aggregate (BASE) Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Interest Income: Advances Whole loans held for portfolio 3 **Investment Securities** 4 Fed Funds 5 Other Interest Income 6 Total Interest Income Interest Expense: CO Bonds **Discount Notes** Member Deposits 10 Other Interest Expense **Total Interest Expense** 11 12 Net interest income 13 Provision (reversal) for credit losses on mortgage loans 14 Net Interest Income after mortgage loan loss provision 15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value 18 Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments 24 Net Income (Loss)

Most Recent <u>Income Statement - Existing (BASE)</u> Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Interest Income: Advances Whole loans held for portfolio 3 **Investment Securities** Fed Funds 5 Other Interest Income 6 Total Interest Income Interest Expense: CO Bonds **Discount Notes** Member Deposits 10 Other Interest Expense Total Interest Expense 11 12 Net interest income 13 Provision (reversal) for credit losses on mortgage loans 14 Net Interest Income after mortgage loan loss provision 15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value 18 Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments 24 Net Income (Loss)

Most Recent Income Statement - Replacement (BASE) Quarter Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Interest Income: Advances Whole loans held for portfolio 3 **Investment Securities** 4 Fed Funds 5 Other Interest Income 6 Total Interest Income Interest Expense: CO Bonds **Discount Notes** Member Deposits 10 Other Interest Expense Total Interest Expense 11 12 Net interest income 13 Provision (reversal) for credit losses on mortgage loans 14 Net Interest Income after mortgage loan loss provision 15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value 18 Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments

24 Net Income (Loss)

Most Recent **Balance Sheet - Aggregate (BASE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities **Total liabilities** 12 **CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) **Total capital** 20 Total liabilities and capital

Most Recent **Balance Sheet - Existing (BASE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities 12 **Total liabilities CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) **Total capital** 20 Total liabilities and capital

Most Recent **Balance Sheet - Replacement (BASE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities **Total liabilities** 12 **CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) 19 **Total capital**

20 Total liabilities and capital

<u>Ca</u>	pital Roll Forward (BASE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
1 2 3 4 5 6	CAPITAL Beginning Capital Net Income Less: Dividends Other Capital Actions Change in AOCI Other										
7	Ending Capital										
8	Regulatory Capital	ļ									
<u>Ca</u>	pital Ratios										
9 10 11	Regulatory Capital Leverage Capital Permanent Capital										

	Credit (BASE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
1	CREDIT EXPENSES Provision for credit losses	 									
2 3 4 5	PLS CREDIT QUALITY Principal Principal writedown Balance Credit support										
6 7 8 9	COUNTERPARTY CREDIT Net Exposure Secured Credit Unsecured Credit Unsecured derivative counterparty exposure										
10	Payment from private mortgage insurers										

Most Recent **Income Statement - Aggregate (ADVERSE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Interest Income: Advances 1 Whole loans held for portfolio 3 Investment Securities 4 Fed Funds 5 Other Interest Income Total Interest Income Interest Expense: CO Bonds 7 Discount Notes 9 Member Deposits 10 Other Interest Expense Total Interest Expense 11 12 Net interest income 13 Provision (reversal) for credit losses on mortgage loans 14 Net Interest Income after mortgage loan loss provision 15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value 18 Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments 24 Net Income (Loss)

Most Recent **Income Statement - Existing (ADVERSE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Interest Income: Advances Whole loans held for portfolio Investment Securities 4 Fed Funds 5 Other Interest Income Total Interest Income 6 Interest Expense: 7 CO Bonds 8 Discount Notes 9 Member Deposits 10 Other Interest Expense Total Interest Expense 11 12 Net interest income 13 Provision (reversal) for credit losses on mortgage loans Net Interest Income after mortgage loan loss provision 15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments 24 Net Income (Loss)

Most Recent

Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Income Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Income Interest Expense Interest Expense Interest Expense Interest Expense Interest Expense Interest Income Interest Expense Interest Income Interest Income Interest Income Interest Income Interest Expense Interest Income Interest In	_		Recent									
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Myole loans held for portfolio Investment Securities Fed Funds Other Interest Income Total Interest Income Interest Expense: CO Bonds Discount Notes Member Deposits Other Interest Expense Total Interest Expense Total Interest Expense Provision (reversal) for credit losses on mortgage loans Net Interest Income after mortgage loan loss provision Derivatives gains (losses) Gains (losses) on securities Total OTTI credit charge Operating expenses Other gains (losses) Coperating expenses Operating expenses Coperating expenses Coperating expenses Conditions Conditions Comments Conditions Cond												<u> </u>
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15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value 18 Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments	14	Net Interest Income after mortgage loan loss provision										
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19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments												
20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments												
21 Other expenses 22 Income (loss) before assessments 23 Total assessments	19	Other gains (losses)	ļ									
21 Other expenses 22 Income (loss) before assessments 23 Total assessments	20	Operating expenses										
22 Income (loss) before assessments 23 Total assessments			İ									
23 Total assessments		·	į									
	22	Income (loss) before assessments										
24 Net Income (Loss)	23	Total assessments	į									
	24	Net Income (Loss)	į									

Most Recent Balance Sheet-Aggregate (ADVERSE) Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities 12 **Total liabilities** CAPITAL 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) Total capital 20 Total liabilities and capital

Most Recent Balance Sheet - Existing (ADVERSE) Quarter Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** 7 LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities 12 **Total liabilities CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted)

18 Accumulated other comprehensive income (loss)

Total capital

20 Total liabilities and capital

19

Most Recent **Balance Sheet - Replacement (ADVERSE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 ASSETS 1 Advances 2 Investment Securities 3 Mortgage Loans 4 Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities **Total liabilities** 12 **CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) 19 Total capital 20 Total liabilities and capital

Capital Roll Forward (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
CAPITAL 1 Beginning Capital 2 Net Income 3 Less: Dividends 4 Other Capital Actions 5 Change in AOCI 6 Other										
7 Ending Capital										
8 Regulatory Capital										
Capital Ratios 9 Regulatory Capital										
Leverage Capital Permanent Capital										

	Credit (ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
1	CREDIT EXPENSES Provision for credit losses										
2 3 4 5	Principal writedown Balance										
6 7 8	Unsecured derivative counterparty exposure										

Global Market Shock (ADVERSE)

Q1 Loss

Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Asset-based Securities (ABS), Commercial Mortgage-

- 1 backed Securities (CMBS) and other collateral
- 2 Agency Securities Option-Adjusted Spread
- 3 Municipal Securities
- 4 Counterparty Default Risk*

* Please provide the name and type (eg: derivatives, repo, etc.) of the largest counterparty below:

Counterparty Name	Counterparty Type	
Counterparty Name	Counterparty Type	

Global Market Shock (ADVERSE)

Q1 Loss

TRADING SECURITIES

Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Asset-based Securities (ABS), Commercial Mortgage-backed

- 1 Securities (CMBS) and other collateral
- 2 Agency Securities Option-Adjusted Spread
- 3 Municipal Securities

AVAILABLE-FOR-SALE SECURITIES

Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Asset-based Securities (ABS), Commercial Mortgage-backed

- 4 Securities (CMBS) and other collateral
- 5 Agency Securities Option-Adjusted Spread
- 6 Municipal Securities

(*Credit ratings should be as of December 31, 2017)

	Grand	Non- Agency	Sub-	Option	Other	Unspec Non-				RMBS			Prime Whole	Non-Prime Whole	European	Other/
(\$MM)	Total	Prime	prime	ARMS	AltA	Prime	HELOC	RMBS CDO	RMBS CDS	Basket	PrimeX	ABX / TABX	Loans	Loans	RMBS	Unspecified
(SMM) otal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0 \$0															
	\$0															
2007 ecified Vintage	\$0 \$0															
al	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0	ŞU	ŞU	ŞU	ŞU	ŞU	ŞU	ŞU	ŞU	3 0	ŞU	ŞU	ŞU	ŞU	,50 	ŞU
	\$0 \$0															
2007	\$0															
ecified Vintage	\$0					<u> </u>	<u> </u>	<u> </u>			ļ					
006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
500	\$0															
2007	\$0 \$0															
ecified Vintage	\$0															
tal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0 \$0															
	\$0															
2007 ecified Vintage	\$0 \$0															
al –	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0															
	\$0 \$0															
2007	\$0															
ecified Vintage	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0	\$0	ŞU	\$U	ŞU	\$0	ŞU	\$0	ŞU	\$U	\$0	ŞU	ŞU	\$U	\$U	\$U
	\$0 \$0															
2007	\$0															
ecified Vintage	\$0							ļ								
ı l 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
506	\$0															
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ecified Vintage	\$0															
al	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0 \$0	_														
	\$0															
2007 ecified Vintage	\$0 \$0															
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
/Loss (\$MM) otal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0 \$0															
	\$0 \$0															
007 cified Vintage	\$0 \$0															
	30															
al		\$0	¢n.	¢n.	¢n.	\$0	¢n.	¢n.	\$0	\$0	\$0	¢n.	\$0	¢n.	¢n.	¢n.
	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2007	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2007 ecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0															
2007 ecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0
2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0															
2007 ecified Vintage 0006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0															
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2007 ecified Vintage 2006 2007 ecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$															
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2007 2016 2007 2006 2007 2017 2016 2007 2016 2006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2007 2007 2007 2007 2016 2007 2016 2006 2006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2006 2007 2007 2007 2016 2007 2006 2007 2007 2007 2007 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2007 2007 2007 2007 2007 2007 201fied Vintage 2007 201fied Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
2007 ecified Vintage 2007 ecified Vintage tal 2006 2007 ecified Vintage tal 2006 2007 ecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
2007 2007 2007 2007 2007 2007 2007 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
2007 2007 2007 2007 2007 2007 2016ed Vintage 2007 2016fed Vintage al 2006 2007 2016fed Vintage 2007 2016fed Vintage 2007 2016fed Vintage 2007 2016fed Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0 \$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0
2006 2007 2007 2016 2007 2017 2017 2017 2017 2017 2017 2017	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0
2006 2007 2007 2016 2007 2017 2017 2017 2017 2017 2017 2017	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0 \$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0
2007 ecified Vintage 2007 ecified Vintage tal 2007 ecified Vintage tal 2007 ecified Vintage tal 2007 ecified Vintage al 2007 ecified Vintage 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0 \$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0
2007 ecified Vintage 2007 ecified Vintage tal 2006 2007 ecified Vintage al 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
2007 2007 2007 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0 \$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0
2007 ecified Vintage 2006 2007 ecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
2007 ecified Vintage 2007 ecified Vintage tal 2007 ecified Vintage tal 2007 ecified Vintage al 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
2007 2007 2007 2007 2007 2007 2007 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
2007 ecified Vintage 2007 ecified Vintage tal 2006 2007 ecified Vintage al 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
2007 2007 2007 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage 2007 2016id Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0
2007 ecified Vintage 2007 ecified Vintage tal 2006 2007 ecified Vintage tal 2006 2007 ecified Vintage 2007 ecified Vintage 1006 2007 ecified Vintage 1006 2007 ecified Vintage 1006 2007 ecified Vintage 1006 2007 ecified Vintage 1006 2007 ecified Vintage 1006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0
2007 ecified Vintage 2007 ecified Vintage tal 2006 2007 ecified Vintage al 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007 ecified Vintage 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0

(*Credit ratings should be as of December 31, 2017)

						ABS				Cash Non-			CI	MBS			ı	C	orporate CDO		Wan	ehouse	
	Grand Total	Autos	Credit Cards	Student Loans	ABS CDS	Credit Basket	Index Tranches	Other / Unspecified	ABS SubTotal	Agency CMBS	CMBS CDS	CMBS CDO	Credit Basket	Index Tranches	Whole Loans	Other / Unspecified	CMBS SubTotal	CLO	Other / Unspecified	Corporate CDO/CLO SubTotal	Total Size	Total Protection	Other / Unspecified
MV* (\$MM) AAA Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
Pre 2006 2006 2007	\$0 \$0 \$0								\$0 \$0 \$0								\$0 \$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
AA Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
A Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007 Post 2007	\$0 \$0 \$0								\$0 \$0 \$0								\$0 \$0 \$0			\$0 \$0 \$0			
Unspecified Vintage	\$0								\$0								\$0			\$0			
BBB Total Pre 2006 2006	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage BB Total	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0	50	30	,JU	90	30	30	30	\$0 \$0	30	30	30	30	,,0	30	,,0	\$0 \$0	30	,,,	\$0 \$0	30	-	,,0
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage B Total	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
Pre 2006 2006	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
2007 Post 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Unspecified Vintage <b td="" total<=""><td>\$0 \$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0 \$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0</td><td>\$0 \$0</td><td>\$0</td><td>\$0</td><td>\$0 \$0</td><td>\$0</td><td>\$0</td><td>\$0</td>	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
Pre 2006 2006 2007	\$0 \$0 \$0								\$0 \$0 \$0								\$0 \$0 \$0			\$0 \$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0 \$0								\$0 \$0			\$0 \$0			
NR Total Pre 2006	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0
2006 2007	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Post 2007 Unspecified Vintage	\$0 \$0								\$0 \$0								\$0 \$0			\$0 \$0			
Total	\$0	\$0	^^									^^	\$0	\$0	\$0								
		, , o	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	ŞU	3 0	ŞU	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Profit/Loss (\$MM) AAA Total	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0
	\$0 \$0								\$0 \$0 \$0								\$0 \$0 \$0			\$0 \$0 \$0			
AAA Total Pre 2006 2006	\$0								\$0 \$0								\$0 \$0			\$0 \$0			
AAA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage AA Total	\$0 \$0 \$0 \$0 \$0 \$0								\$0 \$0 \$0 \$0 \$0								\$0 \$0 \$0 \$0 \$0			\$0 \$0 \$0 \$0 \$0			
AAA Total Pre 2006 2007 Post 2007 Unspecified Vintage AA Total Pre 2006 2007 2007	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0
AAA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage AA Total Pre 2006 2006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0
AAA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage AA Total Pre 2006 2007 Unspecified Vintage AA Total Pre 2006 AA Total Pre 2006 AA Total Pre 2006 Post 2007 Unspecified Vintage A Total	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0
AAA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage AA Total Pre 2006 2007 Unspecified Vintage AA Total Pre 2006 2007 Unspecified Vintage A Total Pre 2006 2007 2007 2007 2007 2006 2006 2006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0
AAA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage A Total Pre 2006 2006 2007 Unspecified Vintage A Total Pre 2006 2007 Unspecified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0	\$0 \$0 \$0	\$0
AAA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage AA Total Pre 2006 2006 2007 Post 2007 Unspecified Vintage A Total Pre 2006 2006 2007 Unspecified Vintage BB Total Pre 2006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0
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Trading and Other Fair Value Assets Munis (Adverse)

	M∨ (\$MM)	MV (\$MM)	Profit/Loss	Profit/Loss
	Available-for-Sale	Trading	from OAS	from OAS
	Securities	Securities	Widening (AFS)	Widening (Trading Secs)
			(A 3)	(Trading Secs)
Bonds				
AAA				
AA A				
BBB				
вв				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR Bonds Total	\$0	\$0	\$0	\$0
1M	\$0	40	30	\$0
3M				
6M				
9M				
1Y 2Y				
3Y				
5Y				
7Y				
10Y				
15Y 20Y				
30Y				
Bonds Total	\$0	\$0	\$0	\$0
Loans		1		
AAA AA				
A				
ВВВ				
вв				
В				
<b< td=""><td></td><td></td><td></td><td></td></b<>				
NR		20	20	
Loans Total 1M	\$0	\$0	\$0	\$0
3M				
6M				
9M				
1Y				
2Y				
3Y 5Y				
7Y				
10Y				
15Y				
20Y				
30Y		0.0		
Loans Total	\$0	\$0	\$0	\$0
CDS				
AAA				
AA				
A				
BBB BB				
B BB				
Б <В	+	<u> </u>		
NR				
CDS Total	\$0	\$0	\$0	\$0
1M				
3M				
6M				
6M 9M 1Y 2Y				
6M 9M 1Y 2Y 3Y				
6M 9M 1Y 2Y 3Y 5Y				
6M 9M 1Y 2Y 3Y 5Y				
6M 9M 1Y 2Y 3Y 5Y 7Y				
6M 9M 1Y 2Y 3Y 5Y 7Y 10Y				
6M 9M 1Y 2Y 3Y 5Y 7Y				

Trading and Other Fair Value Assets Munis (Adverse)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening	Profit/Loss from OAS Widening
			(AFS)	(Trading Secs)
Indices				1
AAA AA	-			1
AA				
ВВВ				
вв				
В				
<b NR</b 				
Indices Total	\$0	\$0	\$0	\$0
1M				
3M				
6M 9M				
1Y				+
2Y				†
3Y				
5Y				1
7Y				
10Y 15Y				
20Y				
30Y				
Indices Total	\$0	\$0	\$0	\$0
Other / Uneposition Munic				
Other / Unspecified Munis AAA				1
AA				1
A				
ввв				
ВВ				
В				
<b NR</b 				+
	# 0	*		
- Juner / Unspecified Wunis I	g 50 I	30	l \$0	1 50
Other / Unspecified Munis T	\$0	\$0	\$0	\$0
1M 3M	\$0	\$0	\$0	\$0
1M 3M 6M	\$0	\$0	\$0	\$0
1M 3M 6M 9M	\$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y	\$0	\$0	\$0	\$0
1M 3M 6M 9M	\$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y	\$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y	\$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y	\$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y	50	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y		\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y		\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T				
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T	c \$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T	\$0	\$0	\$0	\$0
1M	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0	\$0 \$0 \$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T	\$0	\$0	\$0	\$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA ABBBB BBB BBB BBB	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0
1M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
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1M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA BBB BB BB BB BR BR BR Grand Total 1M 3M 6M 9M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA AA BBB BB BB BB BB BB BB BB BB	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA AA BBB BB BB BB BB BB BB BB BB	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA AA BBB BB BB BB BB BB BB BB BB	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA BBB BB BB BR BR Grand Total 1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 11Y 2Y 3Y 5Y 7Y 10Y	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA ABBB BB BB BR BR BR BR BR BR BR BR BR BR	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Other / Unspecified Munis T Grand Total AAA AA BBB BB BB BR BR Grand Total 1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 11Y 2Y 3Y 5Y 7Y 10Y	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$

Trading & Other Fair Value Assets Template

Agencies (Adverse)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening (AFS)	Profit/Loss from OAS Widening (Trading Secs)
US Residential Agency Produc	ts			T
IOs				
POs				
Other CMOs				
Pass-Throughs				
Agency Debt/Debentures				
IOS Index				
POS Index				
MBX Index				
Other Agency Derivatives				
TBA's				
Reverse Mortgages				
Residential Other / Unspecified				
Total	\$0	\$0	\$0	\$0
US Commercial Agency Production Cash Agency CMBS Agency CMBS Derivatives Commercial Other / Unspecified	ets			
Total	\$0	\$0	\$0	\$0
Non-US Agency Products AAA				
AA				
A				
BBB				
BB				
B				
<b< td=""><td></td><td></td><td></td><td>ļ</td></b<>				ļ
NR Total				
	\$0	\$0	\$0	\$0

Most Recent **Income Statement-Aggregate (SEVERELY ADVERSE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Interest Income: 1 Advances 2 Whole loans held for portfolio 3 Investment Securities 4 Fed Funds 5 Other Interest Income Total Interest Income Interest Expense: CO Bonds 8 Discount Notes 9 Member Deposits 10 Other Interest Expense 11 Total Interest Expense 12 Net interest income 13 Provision (reversal) for credit losses on mortgage loans 14 Net Interest Income after mortgage loan loss provision 15 Derivatives gains (losses) 16 Gains (losses) on securities 17 Total net gain (loss) on changes in fair value 18 Total OTTI credit charge 19 Other gains (losses) 20 Operating expenses 21 Other expenses 22 Income (loss) before assessments 23 Total assessments 24 Net Income (Loss)

Most Recent

		Recent									
<u>Inc</u>	come Statement - Existing (SEVERELY ADVERSE)	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	Interest Income:	Ì									
1	Advances										
2	Whole loans held for portfolio										
3	Investment Securities										
4	Fed Funds										
5	Other Interest Income										
6	Total Interest Income										
	Interest Expense:	i									
7	CO Bonds	ŀ									
8	Discount Notes	ŀ									
9	Member Deposits	ŀ									
10	Other Interest Expense										
11	Total Interest Expense										
12	Net interest income	i									
	Provision (reversal) for credit losses on mortgage loans										
14	Net Interest Income after mortgage loan loss provision										
15	Derivatives gains (losses)										
16	Gains (losses) on securities	İ									
17	,	İ									
18	Total OTTI credit charge										
19	<u> </u>										
	g ()										
20	Operating expenses	ļ									
21	Other expenses										
22	Income (loss) before assessments										
22	Total assessments										
23	i Ulai assessiiieliis										

24 Net Income (Loss)

Most Recent

Inc	ome Statement - Replacement (SEVERELY ADVERSE)	Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
ا	nterest Income:										
1	Advances	İ									
2	Whole loans held for portfolio Investment Securities	İ									
3 4	Fed Funds	-									
5	Other Interest Income										
6	Total Interest Income										
-		i									
	Interest Expense:	İ									
7	CO Bonds	ł									
8	Discount Notes										
9	Member Deposits										
10 11	Other Interest Expense Total Interest Expense										
11	rotal interest Expense										
12	Net interest income	İ									
13	Provision (reversal) for credit losses on mortgage loans										
14	Net Interest Income after mortgage loan loss provision										
15	Derivatives gains (losses)										
	Gains (losses) on securities	i									
	Total net gain (loss) on changes in fair value	į									
	Total OTTI credit charge										
	Other gains (losses)										
	3()										
	Operating expenses										
21	Other expenses	i									
22	Income (loss) before assessments										
23	Total assessments										
0.4	Net Income (Loss)										

Most Recent **Balance Sheet-Aggregate (SEVERELY ADVERSE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans 4 Allowance for loan losses 5 Fed Funds 6 Other assets 7 **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities **Total liabilities** 12 **CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) 19 Total capital 20 Total liabilities and capital

Most Recent **Balance Sheet - Existing (SEVERELY ADVERSE)** Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans 4 Allowance for loan losses 5 Fed Funds 6 Other assets **Total assets** LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities **Total liabilities** 12 **CAPITAL** 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) 19 Total capital 20 Total liabilities and capital

Most Recent Balance Sheet - Replacement (SEVERELY ADVERSE) Quarter Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 **ASSETS** 1 Advances 2 Investment Securities 3 Mortgage Loans 4 Allowance for loan losses 5 Fed Funds 6 Other assets Total assets LIABILITIES 8 CO bonds 9 Discount notes 10 Member deposits 11 Other liabilities 12 **Total liabilities** CAPITAL 13 Class B capital stock 14 Class A capital stock 15 Capital stock pre-conversion 16 Retained earnings (unrestricted) 17 Retained earnings (restricted) 18 Accumulated other comprehensive income (loss) 19 Total capital 20 Total liabilities and capital

<u>Car</u>	oital Roll Forward (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	CAPITAL Beginning Capital Net Income Less: Dividends Other Capital Actions Change in AOCI Other										
7	Ending Capital										
	Regulatory Capital pital Ratios	 									
10	Regulatory Capital Leverage Capital Permanent Capital	 									

	Credit (SEVERELY ADVERSE)	Most Recent Quarter	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
1	CREDIT EXPENSES Provision for credit losses										
	PLS CREDIT QUALITY										
2 3 4	Principal writedown										
5											
6											
7 8	Unsecured derivative counterparty exposure Payment from private mortgage insurers										

Global Market Shock (SEVERELY ADVERSE)

Q1 Loss

Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Asset-based Securities (ABS), Commercial Mortgage-

- 1 backed Securities (CMBS) and other collateral
- 2 Agency Securities Option-Adjusted Spread
- 3 Municipal Securities
- 4 Counterparty Default Risk*
- * Please provide the name and type (eg: derivatives, repo, etc.) of the largest counterparty below:

Global Market Shock (SEVERELY ADVERSE)

Q1 Loss

TRADING SECURITIES

Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Asset-based Securities (ABS), Commercial Mortgage-backed

- 1 Securities (CMBS) and other collateral
- 2 Agency Securities Option-Adjusted Spread
- 3 Municipal Securities

AVAILABLE-FOR-SALE SECURITIES

Private Label Securities (PLS) or Non-Agency Prices for Residential Mortgage-backed Securities (RMBS), Asset-based Securities (ABS), Commercial Mortgage-backed

- 4 Securities (CMBS) and other collateral
- 5 Agency Securities Option-Adjusted Spread
- 6 Municipal Securities

(*Credit ratings should be as of December 31, 2017)

		er 31, 2017								RMBS						
	Grand Total	Non- Agency Prime	Sub- prime	Option ARMS	Other AltA	Unspec Non- Prime	HELOC	RMBS CDO	RMBS CDS	Credit Basket	PrimeX	ABX / TABX	Prime Whole Loans	Non-Prime Whole Loans	European RMBS	Other / Unspecified
\$MM) otal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
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2007	\$0															+
ecified Vintage	\$0															
al	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0 \$0														 	+
	\$0															
2007 ecified Vintage	\$0 \$0														 	+
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
006	\$0	70	J U	Ģ.	-	70	J U	,,,,	, ,	Ģ.	70	, , , , , , , , , , , , , , , , , , ,	70	J U	70	
	\$0 \$0															4
2007	\$0															
cified Vintage	\$0														L	
al oe	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
06	\$0 \$0															+
207	\$0															1
007 cified Vintage	\$0 \$0															
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cified Vintage	\$0											!				
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cified Vintage	\$0															
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007 cified Vintage	\$0 \$0															+
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cified Vintage	\$0															
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Loss (\$MM)																
tal 06	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
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cified Vintage	\$0 \$0															+
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cified Vintage	\$0															30
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	\$0							\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
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cified Vintage al	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0										\$0
cified Vintage al 06	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0										\$0
cified Vintage al 06	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0										\$0
cified Vintage al D6 D07 cified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
cified Vintage al D6 D07 cified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0										\$0
cified Vintage al 06 007 cified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
cified Vintage al 006 007 cified Vintage 006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
cified Vintage al 26 207 cified Vintage 26 26	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0
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cified Vintage al 006 007 cified Vintage 006 007 cified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0
cified Vintage al 006 007 cified Vintage 1 006 007 cified Vintage 006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0
al Discovery of the Control of the C	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0
al Document of the Control of the Co	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0
al 006 007 007 cified Vintage 1 006 007 cified Vintage 006 007 cified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0
al Discovery of the Control of the C	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0
cified Vintage al 006 007 cified Vintage 106 007 cified Vintage 006 007 cified Vintage 006 007 cified Vintage	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0
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ciclied Vintage al 006 007 ciclied Vintage 1 006 007 ciclied Vintage 1 006 007 ciclied Vintage 1 006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
007 cdfied Vintage al 006 007 cdfied Vintage I 006 007 cdfied Vintage I 006 007 cdfied Vintage I 006 007 cdfied Vintage I 006 007 cdfied Vintage I 006	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0	\$0	\$0	\$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0	\$0 \$0 \$0	\$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
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(*Credit ratings should be as of December 31, 2017)

						ABS				Cash Non-			C	MBS				Co	orporate CDO /		Warel	house	L
Grand	••			Student	****	Credit	Index	Other /	ABS	Agency	CMBS	CMBS	Credit	Index	Whole	Other/	CMBS		Other/	CDO/CLO	T-1-16'	Total	Other /
Total	Autos	Caro	rds	Loans	ABS CDS	Basket	Tranches	Unspecified	SubTotal	CMBS	CDS	CDO	Basket	Tranches	Loans	Unspecified	SubTotal	CLO	Unspecified	SubTotal	Total Size	Protection	Unspecifi
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Trading and Other Fair Value Assets Munis (Severely Adverse)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening (AFS)	Profit/Loss from OAS Widening (Trading Secs)
Bonds		<u>-</u>	_	
AAA	1		1	T
AA				
Α				
BBB BB			 	
В				
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NR				
Bonds Total	\$0	\$0	\$0	\$0
1M 3M				
6M			 	
9M				
1Y				
2Y				
3Y 5Y				
7Y			 	
10Y				
15Y				
20Y				
30Y	***	¢ο.	#0	# 0
Bonds Total	\$0	\$0	\$0	\$0
Loans				
AAA				
AA				
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BBB				
BB B				
в <В			-	
NR				
Loans Total	\$0	\$0	\$0	\$0
1M				
3M			<u> </u>	
6M 9M			 	
1Y				
2Y				
3Y				
5Y				
7Y 10Y				
10Y 15Y			 	
20Y			 	
30Y				
Loans Total	\$0	\$0	\$0	\$0
CDS	1		1	
AAA AA			 	
A			-	
BBB				
BB				
В				
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NR		•		-
CDS Total 1M	\$0	\$0	\$0	\$0
3M			<u> </u>	
6M				
9M				
1Y				
2Y			<u> </u>	
3Y 5Y			1	
7Y			1	
10Y	 		1	
15Y			1	
20Y				
30Y				
CDS Total	\$0	\$0	\$0	\$0

Trading and Other Fair Value Assets

Munis (Severely Adverse)

	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening (AFS)	Profit/Loss from OAS Widening (Trading Secs
Indices				
AAA				
AA				
A BBB				
BB				
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Indices Total	\$0	\$0	\$0	\$0
<u>1М</u> 3М	-			
6M				
9M				
1Y 2Y	+			
3Y				
5Y				
7Y 10Y	+			1
15Y				
20Y	 			
30Y Indices Total	\$0	\$0	\$0	\$0
Other / Unspecified Munis AAA	 			T
AAA				
A				
BBB				
BB B				
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Other / Unspecified Munis To 1M	\$0	\$0	\$0	\$0
3M				
6M 9M	+			
1Y				
2Y				
3Y 5Y	+			
7Y				
10Y	4			
15Y 20Y				
20Y 30Y				
20Y	\$0	\$0	\$0	\$0
20Y 30Y Other / Unspecified Munis To	\$0	\$0	\$0	\$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA	\$0	\$0	\$ 0	\$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA ABBB BBB BB	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA A BBB BB BB	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA BBB BB BB BB	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0
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20Y 30Y Other / Unspecified Munis To Grand Total AAA AA BBB BB BB BB CB NR Grand Total	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA BBB BB BB CB NR Grand Total 1M 3M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA BBB BB BB BN BC Crand Total 1M 3M 6M 9M	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA BBB BB B C R Grand Total 1M 3M 6M 9M 1Y	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA BBB BB BB CB NR Grand Total 1M 3M 6M 9M 1Y 2Y	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
20Y 30Y Other / Unspecified Munis To Grand Total AAA AA ABBB BB BB BNR Grand Total 1M 3M 6M 9M 1Y 2Y 3Y 5Y	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
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Trading & Other Fair Value Assets Template Agencies (Severely Adverse)

verely Adverse)				
	MV (\$MM) Available-for-Sale Securities	MV (\$MM) Trading Securities	Profit/Loss from OAS Widening (AFS)	Profit/Loss from OAS Widening (Trading Secs)
US Residential Agency Products	.		<u> </u>	
IOs				
POs				
Other CMOs				
Pass-Throughs				
Agency Debt/Debentures				
IOS Index				
POS Index				
MBX Index				
Other Agency Derivatives				
TBA's				
Reverse Mortgages				
Residential Other / Unspecified				
Total	\$0	\$0	\$0	\$0
US Commercial Agency Product Cash Agency CMBS Agency CMBS Derivatives Commercial Other / Unspecified				
Total	\$0	\$0	\$0	\$0
Non-US Agency Products AAA				
AA				
Α				
BBB				
ВВ				
В				
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NR				
Total	\$0	\$0	\$0	\$0

FHLBank Dodd-Frank Act Stress Test Template - SEVERELY ADVERSE (Disclosure to the Public)

Cumulative Projected Financial Metrics (Q1 2018 - Q1 2020)

- 1 Net interest income + other non-interest income, net
- 2 (Provision) benefit for credit losses on mortgage loans
- 3 OTTI credit losses
- 4 Mark-to-market gains (losses)
- 5 Global market shock impact on trading securities
- 6 Counterparty default losses
- 7 AHP assessments
- 8 Net income (loss)
- 9 Other comprehensive income (loss)
- 10 Total comprehensive income (loss)
- 11 Total capital (GAAP) starting
- 12 Total capital (GAAP) ending
- 13 Regulatory capital ratio starting
- 14 Regulatory capital ratio ending

Appendix 4: Baseline Scenario - Domestic

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index (Level)	House Price Index (Level)	Commercial Real Estate Price Index (Level)	Market Volatility Index (Level)
2003 Q1	2.1	4.6	1.1	4.0	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,051.9	131.8	150.5	34.7
2003 Q2	3.8	5.1	5.9	6.3	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342.4	134.6	151.1	29.1
2003 Q3	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.0	4.0	9,649.7	138.5	149.3	22.7
2003 Q4	4.8	6.8	1.6	3.3	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,799.6	143.1	147.0	21.1
2004 Q1	2.3	5.9	2.9	6.1	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039.4	148.1	153.2	21.6
2004 Q2	3.0	6.6	4.0	7.0	5.6	3.2	1.1	3.7	4.7	6.1	6.1	4.0	11,144.6	153.9	163.8	20.0
2004 Q3	3.7	6.3	2.1	4.5	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,893.8	159.5	175.1	19.3
2004 Q4	3.5	6.4	5.1	8.5	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,951.5	165.4	178.1	16.6
2005 Q1	4.3	8.3	-3.8	-1.8	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637.3	172.3	179.3	14.7
2005 Q2	2.1	5.1	3.2	6.0	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,856.7	179.1	185.3	17.7
2005 Q3	3.4	7.3	2.1	6.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,282.9	185.3	190.3	14.2
2005 Q4	2.3	5.4	3.4	6.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497.2	190.7	198.5	16.5
2006 Q1	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.2	7.4	13,121.6	193.8	203.9	14.6
2006 Q2	1.2	4.5	0.6	3.7	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,808.9	193.2	212.8	23.8
2006 Q3	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.6	8.3	13,322.5	191.7	220.2	18.6
2006 Q4	3.2	4.6	5.3	4.6	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,215.8	191.2	222.4	12.7
2007 Q1	0.2	4.8	2.6	6.5	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354.0	189.1	229.9	19.6
2007 Q2	3.1	5.4	0.8	4.0	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163.1	183.6	239.1	18.9
2007 Q3	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,317.8	177.8	247.1	30.8
2007 Q4	1.4	3.2	0.3	4.4	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,753.6	172.0	249.2	31.1
2008 Q1	-2.7	-0.5	2.9	6.5	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284.1	164.8	236.3	32.2
2008 Q2	2.0	4.0	8.7	13.3	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016.4	156.9	224.2	24.1
2008 Q3	-1.9	0.8	-8.9	-5.1	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826.0	149.6	231.1	46.7
2008 Q4	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.9	4.1	9,056.7	141.9	218.6	80.9
2009 Q1	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.1	3.3	8,044.2	137.7	207.9	56.7
2009 Q2	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.0	3.3	9,342.8	137.6	180.0	42.3
2009 Q3	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.2	3.3	10,812.8	138.2	160.2	31.3
2009 Q4	3.9	5.2	-0.5	2.2	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385.1	138.7	159.5	30.7
2010 Q1	1.7	3.2	0.4	1.8	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,032.5	138.7	152.5	27.3
2010 Q2	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.9	3.3	10,645.8	137.8	165.2	45.8
2010 Q3	2.7	4.6	2.0	3.2	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814.0	135.2	165.4	32.9
2010 Q4	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.4	3.3	13,131.5	133.9	167.3	23.5
2011 Q1	-1.5	0.2	5.0	8.2	9.0	4.3	0.1	2.1	3.5	5.4	4.8	3.3	13,908.5	132.7	171.7	29.4
2011 Q2	2.9	6.0	-0.6	3.5	9.1	4.6	0.0	1.8	3.3	5.1	4.7	3.3	13,843.5	132.2	173.4	22.7
2011 Q3	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.3	3.3	11,676.5	132.8	172.1	48.0
2011 Q4	4.6	5.2	0.2	1.6	8.6	1.8	0.0	1.0	2.1	5.0	4.0	3.3	13,019.3	132.8	177.7	45.5

Appendix 4: Baseline Scenario - Domestic (Cont.)

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index (Level)	House Price Index (Level)	Commercial Real Estate Price Index (Level)	Market Volatility Index (Level)
2012 Q1	2.7	4.9	6.7	9.2	8.3	2.3	0.1	0.9	2.1	4.7	3.9	3.3	14,627.5	134.3	179.8	23.0
2012 Q2	1.9	3.8	3.1	4.4	8.2	8.0	0.1	0.8	1.8	4.5	3.8	3.3	14,100.2	137.6	180.8	26.7
2012 Q3	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.6	3.3	14,894.7	140.4	187.2	20.5
2012 Q4	0.1	1.7	10.9	13.3	7.8	2.7	0.1	0.7	1.7	3.9	3.4	3.3	14,834.9	143.3	186.8	22.7
2013 Q1	2.8	4.4	-15.7	-14.5	7.7	1.6	0.1	0.8	1.9	4.0	3.5	3.3	16,396.2	147.0	190.0	19.0
2013 Q2	0.8	1.6	2.4	2.5	7.5	-0.5	0.1	0.9	2.0	4.1	3.7	3.3	16,771.3	151.0	199.1	20.5
2013 Q3	3.1	5.1	2.4	3.9	7.2	2.2	0.0	1.5	2.7	4.9	4.4	3.3	17,718.3	154.7	208.4	17.0
2013 Q4	4.0	6.1	0.9	2.6	6.9	1.6	0.1	1.4	2.8	4.8	4.3	3.3	19,413.2	157.9	212.2	20.3
2014 Q1	-0.9	0.7	4.3	6.5	6.7	2.6	0.0	1.6	2.8	4.6	4.4	3.3	19,711.2	159.9	211.0	21.4
2014 Q2	4.6	7.0	5.3	7.1	6.2	1.9	0.0	1.7	2.7	4.3	4.2	3.3	20,568.7	161.0	219.6	17.0
2014 Q3	5.2	7.1	4.2	5.5	6.1	1.0	0.0	1.7	2.5	4.2	4.1	3.3	20,458.8	163.1	223.2	17.0
2014 Q4	2.0	2.6	5.9	5.7	5.7	-0.7	0.0	1.6	2.3	4.2	4.0	3.3	21,424.6	165.7	234.0	26.3
2015 Q1	3.2	3.2	4.3	2.6	5.6	-2.5	0.0	1.5	2.0	4.0	3.7	3.3	21,707.6	168.0	249.4	22.4
2015 Q2	2.7	5.0	3.8	5.6	5.4	2.4	0.0	1.5	2.2	4.2	3.8	3.3	21,630.9	170.1	250.8	18.9
2015 Q3	1.6	3.0	1.8	3.2	5.1	1.5	0.0	1.6	2.3	4.5	4.0	3.3	19,959.3	172.4	257.2	40.7
2015 Q4	0.5	1.3	2.9	3.1	5.0	0.4	0.1	1.6	2.2	4.6	3.9	3.3	21,100.9	174.9	254.4	24.4
2016 Q1	0.6	0.8	0.2	0.9	4.9	0.1	0.3	1.4	2.0	4.6	3.7	3.5	21,179.4	177.2	244.6	28.1
2016 Q2	2.2	4.7	1.9	4.0	4.9	2.3	0.3	1.3	1.8	4.1	3.6	3.5	21,621.5	179.3	248.1	25.8
2016 Q3	2.8	4.2	0.7	2.5	4.9	1.8	0.3	1.2	1.6	3.7	3.4	3.5	22,468.6	181.6	265.8	18.1
2016 Q4	1.8	3.8	-1.8	0.1	4.7	3.0	0.4	1.7	2.2	4.1	3.8	3.5	23,276.7	184.1	268.5	22.5
2017 Q1	1.2	3.3	2.9	5.2	4.7	3.1	0.6	2.0	2.5	4.2	4.2	3.8	24,508.3	187.1	262.3	13.1
2017 Q2	3.1	4.1	2.7	3.0	4.3	-0.3	0.9	1.8	2.3	4.0	4.0	4.0	25,125.0	190.0	272.1	16.0
2017 Q3	3.2	5.3	0.5	2.1	4.3	2.0	1.0	1.8	2.3	3.9	3.9	4.3	26,148.5	193.2	275.2	16.0
2017 Q4	2.7	5.0	1.9	5.6	4.1	3.7	1.2	2.1	2.4	4.0	3.9	4.3	27,673.2	194.4	278.7	13.1
2018 Q1	2.5	4.6	4.0	6.1	4.0	2.1	1.4	2.2	2.6	4.1	4.1	4.6	28,019.2	195.6	282.2	15.3
2018 Q2	2.8	4.8	2.9	4.8	4.0	1.9	1.7	2.4	2.7	4.3	4.3	4.8	28,382.0	196.9	285.7	17.5
2018 Q3	2.6	4.7	2.9	4.9	3.9	2.1	1.9	2.5	2.8	4.4	4.4	5.0	28,747.4	198.1	289.3	18.7
2018 Q4	2.5	4.6	2.8	4.8	3.8	2.1	2.1	2.7	2.9	4.5	4.5	5.2	29,110.2	199.3	292.9	20.0
2019 Q1	2.3	4.5	2.9	5.0	3.8	2.2	2.2	2.8	3.1	4.6	4.7	5.3	29,471.8	200.6	296.6	20.9
2019 Q2	2.3	4.4	2.5	4.5	3.8	2.2	2.4	2.8	3.1	4.7	4.8	5.5	29,829.5	201.9	300.4	21.5
2019 Q3	2.1	4.3	2.4	4.4	3.8	2.2	2.5	2.9	3.2	4.8	4.9	5.6	30,187.3	203.1	304.1	22.1
2019 Q4	2.0	4.2	2.3	4.4	3.7	2.4	2.6	2.9	3.3	4.9	4.9	5.7	30,537.8	204.4	308.0	22.1
2020 Q1	2.1	4.2	2.2	4.3	3.8	2.3	2.7	3.0	3.5	5.1	5.1	5.7	30,891.7	205.9	310.3	23.5
2020 Q2	2.1	4.2	2.3	4.4	3.9	2.3	2.7	3.0	3.5	5.1	5.2	5.7	31,255.1	207.5	312.6	23.6
2020 Q3	2.1	4.2	2.3	4.4	4.0	2.3	2.7	3.1	3.5	5.2	5.2	5.7	31,622.9	209.0	315.0	23.8
2020 Q4	2.1	4.2	2.3	4.4	4.0	2.3	2.7	3.1	3.6	5.2	5.2	5.8	31,994.9	210.6	317.3	23.8
2021 Q1	2.1	4.2	2.3	4.4	4.1	2.3	2.7	3.1	3.6	5.2	5.3	5.8	32,370.9	212.2	319.7	23.9

Appendix 5: Baseline Scenario - International

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
2003 Q1	-1.0	3.3	1.1	6.7	3.6	105.5	-0.5	0.0	118.1	2.5	1.7	1.6
2003 Q2	0.2	0.5	1.2	2.1	1.1	104.0	3.3	0.3	119.9	3.7	0.2	1.7
2003 Q3	2.1	2.1	1.2	14.3	0.1	102.6	1.6	-0.5	111.4	4.0	1.7	1.7
2003 Q4	3.1	2.3	1.3	13.0	5.5	103.4	4.5	-1.0	107.1	3.1	1.7	1.8
2004 Q1	2.3	2.2	1.2	5.6	4.0	101.4	3.1	0.8	104.2	2.1	1.4	1.8
2004 Q2	2.1	2.6	1.2	6.9	4.1	102.8	-0.1	-0.4	109.4	1.7	0.8	1.8
2004 Q3	1.2	2.0	1.2	8.2	4.1	102.7	2.1	-0.1	110.2	0.9	1.1	1.8
2004 Q4	1.5	2.4	1.4	6.4	0.8	98.9	-1.1	1.9	102.7	1.5	2.4	1.9
2005 Q1	0.7	1.4	1.3	10.6	2.9	98.6	1.9	-1.2	107.2	3.4	2.6	1.9
2005 Q2	2.7	2.2	1.2	8.6	1.5	98.9	3.2	-1.0	110.9	4.4	1.8	1.8
2005 Q3	3.0	3.1	1.2	9.3	2.4	98.6	3.9	-1.0	113.3	4.3	2.8	1.8
2005 Q4	2.4	2.4	1.2	11.7	1.6	98.1	0.8	0.1	117.9	6.0	1.4	1.7
2006 Q1	3.7	1.7	1.2	11.0	2.4	96.8	0.3	1.2	117.5	1.1	1.9	1.7
2006 Q2	4.3	2.5	1.3	7.0	3.2	96.7	1.4	0.4	114.5	0.8	3.0	1.8
2006 Q3	2.6	2.1	1.3	10.3	2.2	96.4	-0.7	0.4	118.0	0.3	3.3	1.9
2006 Q4	4.5	0.9	1.3	11.2	3.6	94.6	4.9	-0.5	119.0	1.5	2.6	2.0
2007 Q1	3.0	2.3	1.3	13.9	3.6	94.0	3.0	-0.7	117.6	3.7	2.5	2.0
2007 Q2	2.6	2.3	1.4	10.5	4.9	91.9	0.5	0.4	123.4	2.9	1.8	2.0
2007 Q3	2.0	2.1	1.4	8.7	7.6	90.6	-1.8	0.3	115.0	2.7	0.3	2.0
2007 Q4	2.1	4.8	1.5	12.8	5.9	89.4	2.0	2.2	111.7	3.3	4.0	2.0
2008 Q1	2.2	4.3	1.6	7.2	8.1	88.0	1.2	1.2	99.9	1.1	3.4	2.0
2008 Q2	-1.5	3.2	1.6	6.0	6.3	88.7	-2.0	1.8	106.2	-2.7	5.8	2.0
2008 Q3	-2.3	3.2	1.4	3.1	2.9	91.5	-5.0	3.4	105.9	-6.3	5.9	1.8
2008 Q4	-6.7	-1.4	1.4	0.3	-1.1	92.2	-8.8	-2.1	90.8	-8.4	0.4	1.5
2009 Q1	-11.2	-1.1	1.3	4.4	-1.4	94.2	-18.2	-3.6	99.2	-6.2	-0.2	1.4
2009 Q2	-1.1	0.0	1.4	15.1	2.3	92.2	8.7	-1.6	96.4	-0.9	2.3	1.6
2009 Q3	1.2	1.1	1.5	12.7	4.1	91.3	0.1	-1.4	89.5	0.6	3.6	1.6
2009 Q4	2.2	1.6	1.4	9.2	5.0	90.6	5.9	-1.5	93.1	1.1	2.8	1.6
2010 Q1	1.7	1.8	1.4	9.8	4.4	89.8	3.5	1.0	93.4	2.2	4.2	1.5
2010 Q2	3.8	2.0	1.2	9.7	3.4	91.0	5.1	-1.4	88.5	3.6	3.3	1.5
2010 Q3	1.8	1.6	1.4	8.8	4.2	88.4	7.5	-1.9	83.5	1.9	2.2	1.6
2010 Q4	2.4	2.6	1.3	9.2	7.5	87.4	-2.9	1.3	81.7	0.3	3.9	1.5
2011 Q1	3.4	3.7	1.4	9.8	6.2	86.4	-6.1	-0.1	82.8	2.4	7.0	1.6
2011 Q2	0.0	3.2	1.5	6.5	5.4	85.3	-1.9	-0.7	80.6	0.6	4.6	1.6
2011 Q3	0.0	1.3	1.3	5.4	5.3	87.3	10.1	0.3	77.0	1.5	3.5	1.6
2011 Q4	-1.4	3.5	1.3	6.7	3.0	87.3	-0.6	-0.6	77.0	0.8	3.4	1.6

Appendix 5: Baseline Scenario - International (Cont.)

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
2012 Q1	-0.6	2.8	1.3	7.4	3.2	86.2	4.6	2.2	82.4	2.6	2.3	1.6
2012 Q2	-1.4	2.3	1.3	5.9	3.9	88.0	-2.4	-1.4	79.8	-0.4	1.9	1.6
2012 Q3	-0.6	1.6	1.3	6.6	2.2	86.1	-1.5	-1.9	77.9	4.7	2.1	1.6
2012 Q4	-1.7	2.4	1.3	7.2	3.5	86.0	0.9	0.1	86.6	-0.6	4.2	1.6
2013 Q1	-1.3	1.2	1.3	6.5	4.3	86.2	4.5	0.7	94.2	2.6	3.0	1.5
2013 Q2	1.9	0.4	1.3	6.4	3.0	87.1	3.8	-0.1	99.2	2.2	1.5	1.5
2013 Q3	1.4	1.3	1.4	7.7	3.7	86.5	3.1	2.7	98.3	3.4	2.1	1.6
2013 Q4	1.0	0.3	1.4	6.7	4.0	85.8	0.0	2.6	105.3	2.1	1.7	1.7
2014 Q1	1.7	0.8	1.4	6.0	1.4	86.8	3.3	1.1	103.0	3.5	1.8	1.7
2014 Q2	0.5	0.0	1.4	7.4	2.6	86.6	-6.6	8.2	101.3	3.5	1.4	1.7
2014 Q3	1.7	0.3	1.3	6.7	2.3	86.9	-0.2	1.6	109.7	3.1	0.8	1.6
2014 Q4	2.0	-0.4	1.2	5.7	1.2	88.1	2.8	-0.5	119.9	3.1	-0.4	1.6
2015 Q1	3.0	-0.9	1.1	6.1	0.8	87.9	5.1	0.4	120.0	1.4	-1.3	1.5
2015 Q2	1.3	1.9	1.1	6.9	2.8	88.3	0.5	0.5	122.1	2.3	0.8	1.6
2015 Q3	1.7	-0.2	1.1	6.5	2.7	90.9	0.3	0.1	119.8	1.7	0.8	1.5
2015 Q4	1.9	-0.1	1.1	5.4	1.5	92.2	-0.9	-0.4	120.3	2.9	0.0	1.5
2016 Q1	2.0	-1.3	1.1	6.6	2.8	91.7	2.2	0.0	112.4	0.8	-0.1	1.4
2016 Q2	1.4	1.2	1.1	6.6	2.8	94.0	1.6	-1.1	102.8	1.9	0.7	1.3
2016 Q3	1.6	1.2	1.1	6.1	1.2	93.6	0.9	-0.5	101.2	2.2	2.2	1.3
2016 Q4	2.7	1.8	1.1	5.7	2.3	97.5	1.4	3.0	116.8	3.0	2.0	1.2
2017 Q1	2.5	2.8	1.1	6.7	0.6	95.2	1.5	-0.1	111.4	1.2	3.7	1.3
2017 Q2	2.9	0.2	1.1	6.0	2.0	94.5	2.9	-0.8	112.4	1.2	3.0	1.3
2017 Q3	2.9	1.0	1.2	6.6	2.4	93.5	2.5	0.4	112.6	1.6	2.4	1.3
2017 Q4	2.3	1.7	1.2	5.9	2.6	91.0	1.8	0.9	112.7	1.4	2.9	1.4
2018 Q1	2.1	1.5	1.2	6.0	2.5	91.5	1.5	0.9	112.7	1.4	2.6	1.4
2018 Q2	2.1	1.5	1.2	6.0	2.5	92.0	1.4	1.0	112.8	1.4	2.5	1.3
2018 Q3	2.0	1.6	1.2	6.0	2.5	92.5	1.2	1.0	112.8	1.4	2.4	1.3
2018 Q4	2.0	1.6	1.2	5.9	2.6	93.0	1.1	1.1	112.8	1.4	2.3	1.3
2019 Q1	1.9	1.6	1.2	5.8	2.7	93.2	1.1	1.2	112.6	1.4	2.2	1.3
2019 Q2	1.9	1.6	1.2	5.8	2.8	93.5	1.0	1.2	112.3	1.4	2.1	1.3
2019 Q3	1.8	1.7	1.2	5.7	2.9	93.7	1.0	1.3	112.0	1.4	2.1	1.4
2019 Q4	1.8	1.7	1.2	5.8	2.8	94.0	0.9	1.4	111.8	1.4	2.0	1.4
2020 Q1	1.8	1.8	1.2	5.8	2.8	94.0	0.8	1.4	111.8	1.5	2.0	1.4
2020 Q2	1.7	1.8	1.2	5.9	2.7	94.0	0.8	1.5	111.8	1.5	1.9	1.4
2020 Q3	1.7	1.9	1.2	5.9	2.7	94.0	0.8	1.5	111.8	1.5	1.9	1.4
2020 Q4	1.7	1.9	1.2	5.8	2.7	94.0	0.8	1.6	111.8	1.5	1.9	1.4
2021 Q1	1.6	1.9	1.2	5.7	2.8	94.0	0.8	1.6	111.8	1.6	1.9	1.4

Appendix 6: Adverse Scenario - Domestic

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index (Level)	House Price Index (Level)	Commercial Real Estate Price Index (Level)	Market Volatility Index (Level)
2003 Q1	2.1	4.6	1.1	4.0	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,051.9	131.8	150.5	34.7
2003 Q2	3.8	5.1	5.9	6.3	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342.4	134.6	151.1	29.1
2003 Q3	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.0	4.0	9,649.7	138.5	149.3	22.7
2003 Q4	4.8	6.8	1.6	3.3	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,799.6	143.1	147.0	21.1
2004 Q1	2.3	5.9	2.9	6.1	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039.4	148.1	153.2	21.6
2004 Q2	3.0	6.6	4.0	7.0	5.6	3.2	1.1	3.7	4.7	6.1	6.1	4.0	11,144.6	153.9	163.8	20.0
2004 Q3	3.7	6.3	2.1	4.5	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,893.8	159.5	175.1	19.3
2004 Q4	3.5	6.4	5.1	8.5	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,951.5	165.4	178.1	16.6
2005 Q1	4.3	8.3	-3.8	-1.8	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637.3	172.3	179.3	14.7
2005 Q2	2.1	5.1	3.2	6.0	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,856.7	179.1	185.3	17.7
2005 Q3	3.4	7.3	2.1	6.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,282.9	185.3	190.3	14.2
2005 Q4	2.3	5.4	3.4	6.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497.2	190.7	198.5	16.5
2006 Q1	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.2	7.4	13,121.6	193.8	203.9	14.6
2006 Q2	1.2	4.5	0.6	3.7	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,808.9	193.2	212.8	23.8
2006 Q3	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.6	8.3	13,322.5	191.7	220.2	18.6
2006 Q4	3.2	4.6	5.3	4.6	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,215.8	191.2	222.4	12.7
2007 Q1	0.2	4.8	2.6	6.5	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354.0	189.1	229.9	19.6
2007 Q2	3.1	5.4	0.8	4.0	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163.1	183.6	239.1	18.9
2007 Q3	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,317.8	177.8	247.1	30.8
2007 Q4	1.4	3.2	0.3	4.4	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,753.6	172.0	249.2	31.1
2008 Q1	-2.7	-0.5	2.9	6.5	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284.1	164.8	236.3	32.2
2008 Q2	2.0	4.0	8.7	13.3	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016.4	156.9	224.2	24.1
2008 Q3	-1.9	0.8	-8.9	-5.1	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826.0	149.6	231.1	46.7
2008 Q4	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.9	4.1	9,056.7	141.9	218.6	80.9
2009 Q1	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.1	3.3	8,044.2	137.7	207.9	56.7
2009 Q2	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.0	3.3	9,342.8	137.6	180.0	42.3
2009 Q3	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.2	3.3	10,812.8	138.2	160.2	31.3
2009 Q4	3.9	5.2	-0.5	2.2	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385.1	138.7	159.5	30.7
2010 Q1	1.7	3.2	0.4	1.8	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,032.5	138.7	152.5	27.3
2010 Q2	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.9	3.3	10,645.8	137.8	165.2	45.8
2010 Q3	2.7	4.6	2.0	3.2	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814.0	135.2	165.4	32.9
2010 Q4	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.4	3.3	13,131.5	133.9	167.3	23.5
2011 Q1	-1.5	0.2	5.0	8.2	9.0	4.3	0.1	2.1	3.5	5.4	4.8	3.3	13,908.5	132.7	171.7	29.4
2011 Q2	2.9	6.0	-0.6	3.5	9.1	4.6	0.0	1.8	3.3	5.1	4.7	3.3	13,843.5	132.2	173.4	22.7
2011 Q3	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.3	3.3	11,676.5	132.8	172.1	48.0
2011 Q4	4.6	5.2	0.2	1.6	8.6	1.8	0.0	1.0	2.1	5.0	4.0	3.3	13,019.3	132.8	177.7	45.5

Appendix 6: Adverse Scenario - Domestic (Cont.)

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index (Level)	House Price Index (Level)	Commercial Real Estate Price Index (Level)	Market Volatility Index (Level)
2012 Q1	2.7	4.9	6.7	9.2	8.3	2.3	0.1	0.9	2.1	4.7	3.9	3.3	14,627.5	134.3	179.8	23.0
2012 Q2	1.9	3.8	3.1	4.4	8.2	0.8	0.1	0.8	1.8	4.5	3.8	3.3	14,100.2	137.6	180.8	26.7
2012 Q3	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.6	3.3	14,894.7	140.4	187.2	20.5
2012 Q4	0.1	1.7	10.9	13.3	7.8	2.7	0.1	0.7	1.7	3.9	3.4	3.3	14,834.9	143.3	186.8	22.7
2013 Q1	2.8	4.4	-15.7	-14.5	7.7	1.6	0.1	0.8	1.9	4.0	3.5	3.3	16,396.2	147.0	190.0	19.0
2013 Q2	0.8	1.6	2.4	2.5	7.5	-0.5	0.1	0.9	2.0	4.1	3.7	3.3	16,771.3	151.0	199.1	20.5
2013 Q3	3.1	5.1	2.4	3.9	7.2	2.2	0.0	1.5	2.7	4.9	4.4	3.3	17,718.3	154.7	208.4	17.0
2013 Q4	4.0	6.1	0.9	2.6	6.9	1.6	0.1	1.4	2.8	4.8	4.3	3.3	19,413.2	157.9	212.2	20.3
2014 Q1	-0.9	0.7	4.3	6.5	6.7	2.6	0.0	1.6	2.8	4.6	4.4	3.3	19,711.2	159.9	211.0	21.4
2014 Q2	4.6	7.0	5.3	7.1	6.2	1.9	0.0	1.7	2.7	4.3	4.2	3.3	20,568.7	161.0	219.6	17.0
2014 Q3	5.2	7.1	4.2	5.5	6.1	1.0	0.0	1.7	2.5	4.2	4.1	3.3	20,458.8	163.1	223.2	17.0
2014 Q4	2.0	2.6	5.9	5.7	5.7	-0.7	0.0	1.6	2.3	4.2	4.0	3.3	21,424.6	165.7	234.0	26.3
2015 Q1	3.2	3.2	4.3	2.6	5.6	-2.5	0.0	1.5	2.0	4.0	3.7	3.3	21,707.6	168.0	249.4	22.4
2015 Q2	2.7	5.0	3.8	5.6	5.4	2.4	0.0	1.5	2.2	4.2	3.8	3.3	21,630.9	170.1	250.8	18.9
2015 Q3	1.6	3.0	1.8	3.2	5.1	1.5	0.0	1.6	2.3	4.5	4.0	3.3	19,959.3	172.4	257.2	40.7
2015 Q4	0.5	1.3	2.9	3.1	5.0	0.4	0.1	1.6	2.2	4.6	3.9	3.3	21,100.9	174.9	254.4	24.4
2016 Q1	0.6	0.8	0.2	0.9	4.9	0.1	0.3	1.4	2.0	4.6	3.7	3.5	21,179.4	177.2	244.6	28.1
2016 Q2	2.2	4.7	1.9	4.0	4.9	2.3	0.3	1.3	1.8	4.1	3.6	3.5	21,621.5	179.3	248.1	25.8
2016 Q3	2.8	4.2	0.7	2.5	4.9	1.8	0.3	1.2	1.6	3.7	3.4	3.5	22,468.6	181.6	265.8	18.1
2016 Q4	1.8	3.8	-1.8	0.1	4.7	3.0	0.4	1.7	2.2	4.1	3.8	3.5	23,276.7	184.1	268.5	22.5
2017 Q1	1.2	3.3	2.9	5.2	4.7	3.1	0.6	2.0	2.5	4.2	4.2	3.8	24,508.3	187.1	262.3	13.1
2017 Q2	3.1	4.1	2.7	3.0	4.3	-0.3	0.9	1.8	2.3	4.0	4.0	4.0	25,125.0	190.0	272.1	16.0
2017 Q3	3.2	5.3	0.5	2.1	4.3	2.0	1.0	1.8	2.3	3.9	3.9	4.3	26,148.5	193.2	275.2	16.0
2017 Q4	2.7	5.0	1.9	5.6	4.1	3.7	1.2	2.1	2.4	4.0	3.9	4.3	27,673.2	194.4	278.7	13.1
2018 Q1	-1.3	1.2	2.4	4.2	4.5	1.7	0.6	0.0	0.7	3.8	3.2	3.8	24,589.0	190.9	272.4	28.0
2018 Q2	-3.5	-1.4	-1.2	0.2	5.3	1.3	0.1	0.1	0.8	4.2	3.4	3.3	22,884.3	185.1	261.9	33.1
2018 Q3	-2.4	-0.4	-1.8	-0.2	5.8	1.6	0.1	0.2	0.9	4.4	3.6	3.3	21,104.3	180.4	253.6	33.7
2018 Q4	-1.3	0.6	-1.1	0.6	6.3	1.7	0.1	0.3	1.0	4.6	3.7	3.3	20,857.6	176.9	247.3	32.8
2019 Q1	-0.7	1.3	-0.3	1.5	6.6	1.8	0.1	0.4	1.1	4.8	3.9	3.2	19,718.4	174.0	242.1	31.7
2019 Q2	0.4	2.3	-0.1	1.6	6.9	1.9	0.1	0.5	1.2	4.8	3.9	3.2	19,997.9	172.3	238.9	28.8
2019 Q3	1.0	2.9	0.5	2.2	7.0	1.9	0.1	0.6	1.3	4.7	3.9	3.2	20,579.7	171.1	236.9	25.7
2019 Q4	2.5	4.3	1.0	2.9	7.0	2.1	0.1	0.6	1.4	4.6	3.9	3.2	21,349.8	171.1	236.9	23.1
2020 Q1	2.8	4.5	2.3	4.2	6.9	2.1	0.1	0.7	1.6	4.6	4.0	3.2	22,145.1	171.1	236.9	21.3
2020 Q2	3.0	4.7	2.4	4.2	6.8	2.0	0.1	0.7	1.7	4.4	4.0	3.2	23,212.5	171.6	237.7	20.1
2020 Q3	3.2	4.8	2.6	4.4	6.6	2.0	0.1	0.8	1.8	4.3	4.0	3.2	24,259.3	172.2	238.8	19.3
2020 Q4	3.3	4.9	2.8	4.5	6.5	2.0	0.1	0.9	1.8	4.2	3.9	3.2	25,405.5	172.9	240.2	18.7
2021 Q1	3.3	4.8	2.9	4.6	6.3	1.9	0.1	0.9	1.9	4.0	3.9	3.2	26,624.8	173.9	241.8	18.3

Appendix 7: Adverse Scenario – International

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
2003 Q1	-1.0	3.3	1.1	6.7	3.6	105.5	-0.5	0.0	118.1	2.5	1.7	1.6
2003 Q2	0.2	0.5	1.2	2.1	1.1	104.0	3.3	0.3	119.9	3.7	0.2	1.7
2003 Q3	2.1	2.1	1.2	14.3	0.1	102.6	1.6	-0.5	111.4	4.0	1.7	1.7
2003 Q4	3.1	2.3	1.3	13.0	5.5	103.4	4.5	-1.0	107.1	3.1	1.7	1.8
2004 Q1	2.3	2.2	1.2	5.6	4.0	101.4	3.1	0.8	104.2	2.1	1.4	1.8
2004 Q2	2.1	2.6	1.2	6.9	4.1	102.8	-0.1	-0.4	109.4	1.7	0.8	1.8
2004 Q3	1.2	2.0	1.2	8.2	4.1	102.7	2.1	-0.1	110.2	0.9	1.1	1.8
2004 Q4	1.5	2.4	1.4	6.4	0.8	98.9	-1.1	1.9	102.7	1.5	2.4	1.9
2005 Q1	0.7	1.4	1.3	10.6	2.9	98.6	1.9	-1.2	107.2	3.4	2.6	1.9
2005 Q2	2.7	2.2	1.2	8.6	1.5	98.9	3.2	-1.0	110.9	4.4	1.8	1.8
2005 Q3	3.0	3.1	1.2	9.3	2.4	98.6	3.9	-1.0	113.3	4.3	2.8	1.8
2005 Q4	2.4	2.4	1.2	11.7	1.6	98.1	0.8	0.1	117.9	6.0	1.4	1.7
2006 Q1	3.7	1.7	1.2	11.0	2.4	96.8	0.3	1.2	117.5	1.1	1.9	1.7
2006 Q2	4.3	2.5	1.3	7.0	3.2	96.7	1.4	0.4	114.5	0.8	3.0	1.8
2006 Q3	2.6	2.1	1.3	10.3	2.2	96.4	-0.7	0.4	118.0	0.3	3.3	1.9
2006 Q4	4.5	0.9	1.3	11.2	3.6	94.6	4.9	-0.5	119.0	1.5	2.6	2.0
2007 Q1	3.0	2.3	1.3	13.9	3.6	94.0	3.0	-0.7	117.6	3.7	2.5	2.0
2007 Q2	2.6	2.3	1.4	10.5	4.9	91.9	0.5	0.4	123.4	2.9	1.8	2.0
2007 Q3	2.0	2.1	1.4	8.7	7.6	90.6	-1.8	0.3	115.0	2.7	0.3	2.0
2007 Q4	2.1	4.8	1.5	12.8	5.9	89.4	2.0	2.2	111.7	3.3	4.0	2.0
2008 Q1	2.2	4.3	1.6	7.2	8.1	88.0	1.2	1.2	99.9	1.1	3.4	2.0
2008 Q2	-1.5	3.2	1.6	6.0	6.3	88.7	-2.0	1.8	106.2	-2.7	5.8	2.0
2008 Q3	-2.3	3.2	1.4	3.1	2.9	91.5	-5.0	3.4	105.9	-6.3	5.9	1.8
2008 Q4	-6.7	-1.4	1.4	0.3	-1.1	92.2	-8.8	-2.1	90.8	-8.4	0.4	1.5
2009 Q1	-11.2	-1.1	1.3	4.4	-1.4	94.2	-18.2	-3.6	99.2	-6.2	-0.2	1.4
2009 Q2	-1.1	0.0	1.4	15.1	2.3	92.2	8.7	-1.6	96.4	-0.9	2.3	1.6
2009 Q3	1.2	1.1	1.5	12.7	4.1	91.3	0.1	-1.4	89.5	0.6	3.6	1.6
2009 Q4	2.2	1.6	1.4	9.2	5.0	90.6	5.9	-1.5	93.1	1.1	2.8	1.6
2010 Q1	1.7	1.8	1.4	9.8	4.4	89.8	3.5	1.0	93.4	2.2	4.2	1.5
2010 Q2	3.8	2.0	1.2	9.7	3.4	91.0	5.1	-1.4	88.5	3.6	3.3	1.5
2010 Q3	1.8	1.6	1.4	8.8	4.2	88.4	7.5	-1.9	83.5	1.9	2.2	1.6
2010 Q4	2.4	2.6	1.3	9.2	7.5	87.4	-2.9	1.3	81.7	0.3	3.9	1.5
2011 Q1	3.4	3.7	1.4	9.8	6.2	86.4	-6.1	-0.1	82.8	2.4	7.0	1.6
2011 Q2	0.0	3.2	1.5	6.5	5.4	85.3	-1.9	-0.7	80.6	0.6	4.6	1.6
2011 Q3	0.0	1.3	1.3	5.4	5.3	87.3	10.1	0.3	77.0	1.5	3.5	1.6
2011 Q4	-1.4	3.5	1.3	6.7	3.0	87.3	-0.6	-0.6	77.0	0.8	3.4	1.6

Appendix 7: Adverse Scenario - International (Cont.)

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
2012 Q1	-0.6	2.8	1.3	7.4	3.2	86.2	4.6	2.2	82.4	2.6	2.3	1.6
2012 Q2	-1.4	2.3	1.3	5.9	3.9	88.0	-2.4	-1.4	79.8	-0.4	1.9	1.6
2012 Q3	-0.6	1.6	1.3	6.6	2.2	86.1	-1.5	-1.9	77.9	4.7	2.1	1.6
2012 Q4	-1.7	2.4	1.3	7.2	3.5	86.0	0.9	0.1	86.6	-0.6	4.2	1.6
2013 Q1	-1.3	1.2	1.3	6.5	4.3	86.2	4.5	0.7	94.2	2.6	3.0	1.5
2013 Q2	1.9	0.4	1.3	6.4	3.0	87.1	3.8	-0.1	99.2	2.2	1.5	1.5
2013 Q3	1.4	1.3	1.4	7.7	3.7	86.5	3.1	2.7	98.3	3.4	2.1	1.6
2013 Q4	1.0	0.3	1.4	6.7	4.0	85.8	0.0	2.6	105.3	2.1	1.7	1.7
2014 Q1	1.7	0.8	1.4	6.0	1.4	86.8	3.3	1.1	103.0	3.5	1.8	1.7
2014 Q2	0.5	0.0	1.4	7.4	2.6	86.6	-6.6	8.2	101.3	3.5	1.4	1.7
2014 Q3	1.7	0.3	1.3	6.7	2.3	86.9	-0.2	1.6	109.7	3.1	0.8	1.6
2014 Q4	2.0	-0.4	1.2	5.7	1.2	88.1	2.8	-0.5	119.9	3.1	-0.4	1.6
2015 Q1	3.0	-0.9	1.1	6.1	0.8	87.9	5.1	0.4	120.0	1.4	-1.3	1.5
2015 Q2	1.3	1.9	1.1	6.9	2.8	88.3	0.5	0.5	122.1	2.3	0.8	1.6
2015 Q3	1.7	-0.2	1.1	6.5	2.7	90.9	0.3	0.1	119.8	1.7	0.8	1.5
2015 Q4	1.9	-0.1	1.1	5.4	1.5	92.2	-0.9	-0.4	120.3	2.9	0.0	1.5
2016 Q1	2.0	-1.3	1.1	6.6	2.8	91.7	2.2	0.0	112.4	0.8	-0.1	1.4
2016 Q2	1.4	1.2	1.1	6.6	2.8	94.0	1.6	-1.1	102.8	1.9	0.7	1.3
2016 Q3	1.6	1.2	1.1	6.1	1.2	93.6	0.9	-0.5	101.2	2.2	2.2	1.3
2016 Q4	2.7	1.8	1.1	5.7	2.3	97.5	1.4	3.0	116.8	3.0	2.0	1.2
2017 Q1	2.5	2.8	1.1	6.7	0.6	95.2	1.5	-0.1	111.4	1.2	3.7	1.3
2017 Q2	2.9	0.2	1.1	6.0	2.0	94.5	2.9	-0.8	112.4	1.2	3.0	1.3
2017 Q3	2.9	1.0	1.2	6.6	2.4	93.5	2.5	0.4	112.6	1.6	2.4	1.3
2017 Q4	2.3	1.7	1.2	5.9	2.6	91.0	1.8	0.9	112.7	1.4	2.9	1.4
2018 Q1	-2.6	0.8	1.1	2.1	1.3	97.0	-1.7	-1.3	110.7	-2.8	1.3	1.3
2018 Q2	-3.4	0.3	1.1	2.5	0.5	99.8	-4.0	-1.9	109.6	-3.9	0.6	1.3
2018 Q3	-2.6	-0.1	1.1	3.7	0.1	101.1	-4.9	-2.2	109.6	-3.4	0.3	1.3
2018 Q4	-1.9	-0.4	1.1	4.4	-0.1	102.1	-5.1	-2.4	109.1	-2.8	0.2	1.3
2019 Q1	-0.9	-0.6	1.1	5.4	0.1	101.4	-4.0	-1.9	108.6	-1.6	0.4	1.3
2019 Q2	-0.1	-0.2	1.2	5.9	0.3	100.8	-2.7	-1.5	108.1	-0.4	0.6	1.3
2019 Q3	0.7	0.1	1.2	6.1	0.6	100.2	-1.6	-1.1	107.7	0.5	0.8	1.3
2019 Q4	1.3	0.4	1.2	6.1	0.8	99.6	-0.8	-0.7	107.3	1.1	1.0	1.3
2020 Q1	1.7	0.7	1.2	6.2	0.9	98.9	-0.1	-0.3	107.3	1.7	1.1	1.3
2020 Q2	2.0	0.9	1.2	6.2	1.1	98.2	0.4	0.0	107.4	2.0	1.2	1.3
2020 Q3	2.1	1.1	1.2	6.3	1.3	97.7	0.8	0.3	107.5	2.2	1.3	1.3
2020 Q4	2.1	1.2	1.2	6.3	1.5	97.2	1.0	0.5	107.7	2.3	1.4	1.3
2021 Q1	2.0	1.3	1.2	6.3	1.7	96.9	1.2	0.7	107.8	2.3	1.5	1.3

Appendix 8: Severely Adverse Scenario - Domestic

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index (Level)	House Price Index (Level)	Commercial Real Estate Price Index (Level)	Market Volatility Index (Level)
2003 Q1	2.1	4.6	1.1	4.0	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,051.9	131.8	150.5	34.7
2003 Q2	3.8	5.1	5.9	6.3	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342.4	134.6	151.1	29.1
2003 Q3	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.0	4.0	9,649.7	138.5	149.3	22.7
2003 Q4	4.8	6.8	1.6	3.3	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,799.6	143.1	147.0	21.1
2004 Q1	2.3	5.9	2.9	6.1	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039.4	148.1	153.2	21.6
2004 Q2	3.0	6.6	4.0	7.0	5.6	3.2	1.1	3.7	4.7	6.1	6.1	4.0	11,144.6	153.9	163.8	20.0
2004 Q3	3.7	6.3	2.1	4.5	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,893.8	159.5	175.1	19.3
2004 Q4	3.5	6.4	5.1	8.5	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,951.5	165.4	178.1	16.6
2005 Q1	4.3	8.3	-3.8	-1.8	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637.3	172.3	179.3	14.7
2005 Q2	2.1	5.1	3.2	6.0	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,856.7	179.1	185.3	17.7
2005 Q3	3.4	7.3	2.1	6.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,282.9	185.3	190.3	14.2
2005 Q4	2.3	5.4	3.4	6.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497.2	190.7	198.5	16.5
2006 Q1	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.2	7.4	13,121.6	193.8	203.9	14.6
2006 Q2	1.2	4.5	0.6	3.7	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,808.9	193.2	212.8	23.8
2006 Q3	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.6	8.3	13,322.5	191.7	220.2	18.6
2006 Q4	3.2	4.6	5.3	4.6	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,215.8	191.2	222.4	12.7
2007 Q1	0.2	4.8	2.6	6.5	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354.0	189.1	229.9	19.6
2007 Q2	3.1	5.4	0.8	4.0	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163.1	183.6	239.1	18.9
2007 Q3	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,317.8	177.8	247.1	30.8
2007 Q4	1.4	3.2	0.3	4.4	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,753.6	172.0	249.2	31.1
2008 Q1	-2.7	-0.5	2.9	6.5	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284.1	164.8	236.3	32.2
2008 Q2	2.0	4.0	8.7	13.3	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016.4	156.9	224.2	24.1
2008 Q3	-1.9	0.8	-8.9	-5.1	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826.0	149.6	231.1	46.7
2008 Q4	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.9	4.1	9,056.7	141.9	218.6	80.9
2009 Q1	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.1	3.3	8,044.2	137.7	207.9	56.7
2009 Q2	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.0	3.3	9,342.8	137.6	180.0	42.3
2009 Q3	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.2	3.3	10,812.8	138.2	160.2	31.3
2009 Q4	3.9	5.2	-0.5	2.2	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385.1	138.7	159.5	30.7
2010 Q1	1.7	3.2	0.4	1.8	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,032.5	138.7	152.5	27.3
2010 Q2	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.9	3.3	10,645.8	137.8	165.2	45.8
2010 Q3	2.7	4.6	2.0	3.2	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814.0	135.2	165.4	32.9
2010 Q4	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.4	3.3	13,131.5	133.9	167.3	23.5
2011 Q1	-1.5	0.2	5.0	8.2	9.0	4.3	0.1	2.1	3.5	5.4	4.8	3.3	13,908.5	132.7	171.7	29.4
2011 Q2	2.9	6.0	-0.6	3.5	9.1	4.6	0.0	1.8	3.3	5.1	4.7	3.3	13,843.5	132.2	173.4	22.7
2011 Q3	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.3	3.3	11,676.5	132.8	172.1	48.0
2011 Q4	4.6	5.2	0.2	1.6	8.6	1.8	0.0	1.0	2.1	5.0	4.0	3.3	13,019.3	132.8	177.7	45.5

Appendix 8: Severely Adverse Scenario - Domestic (Cont.)

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index (Level)	House Price Index (Level)	Commercial Real Estate Price Index (Level)	Market Volatility Index (Level)
2012 Q1	2.7	4.9	6.7	9.2	8.3	2.3	0.1	0.9	2.1	4.7	3.9	3.3	14,627.5	134.3	179.8	23.0
2012 Q2	1.9	3.8	3.1	4.4	8.2	0.8	0.1	0.8	1.8	4.5	3.8	3.3	14,100.2	137.6	180.8	26.7
2012 Q3	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.6	3.3	14,894.7	140.4	187.2	20.5
2012 Q4	0.1	1.7	10.9	13.3	7.8	2.7	0.1	0.7	1.7	3.9	3.4	3.3	14,834.9	143.3	186.8	22.7
2013 Q1	2.8	4.4	-15.7	-14.5	7.7	1.6	0.1	0.8	1.9	4.0	3.5	3.3	16,396.2	147.0	190.0	19.0
2013 Q2	0.8	1.6	2.4	2.5	7.5	-0.5	0.1	0.9	2.0	4.1	3.7	3.3	16,771.3	151.0	199.1	20.5
2013 Q3	3.1	5.1	2.4	3.9	7.2	2.2	0.0	1.5	2.7	4.9	4.4	3.3	17,718.3	154.7	208.4	17.0
2013 Q4	4.0	6.1	0.9	2.6	6.9	1.6	0.1	1.4	2.8	4.8	4.3	3.3	19,413.2	157.9	212.2	20.3
2014 Q1	-0.9	0.7	4.3	6.5	6.7	2.6	0.0	1.6	2.8	4.6	4.4	3.3	19,711.2	159.9	211.0	21.4
2014 Q2	4.6	7.0	5.3	7.1	6.2	1.9	0.0	1.7	2.7	4.3	4.2	3.3	20,568.7	161.0	219.6	17.0
2014 Q3	5.2	7.1	4.2	5.5	6.1	1.0	0.0	1.7	2.5	4.2	4.1	3.3	20,458.8	163.1	223.2	17.0
2014 Q4	2.0	2.6	5.9	5.7	5.7	-0.7	0.0	1.6	2.3	4.2	4.0	3.3	21,424.6	165.7	234.0	26.3
2015 Q1	3.2	3.2	4.3	2.6	5.6	-2.5	0.0	1.5	2.0	4.0	3.7	3.3	21,707.6	168.0	249.4	22.4
2015 Q2	2.7	5.0	3.8	5.6	5.4	2.4	0.0	1.5	2.2	4.2	3.8	3.3	21,630.9	170.1	250.8	18.9
2015 Q3	1.6	3.0	1.8	3.2	5.1	1.5	0.0	1.6	2.3	4.5	4.0	3.3	19,959.3	172.4	257.2	40.7
2015 Q4	0.5	1.3	2.9	3.1	5.0	0.4	0.1	1.6	2.2	4.6	3.9	3.3	21,100.9	174.9	254.4	24.4
2016 Q1	0.6	0.8	0.2	0.9	4.9	0.1	0.3	1.4	2.0	4.6	3.7	3.5	21,179.4	177.2	244.6	28.1
2016 Q2	2.2	4.7	1.9	4.0	4.9	2.3	0.3	1.3	1.8	4.1	3.6	3.5	21,621.5	179.3	248.1	25.8
2016 Q3	2.8	4.2	0.7	2.5	4.9	1.8	0.3	1.2	1.6	3.7	3.4	3.5	22,468.6	181.6	265.8	18.1
2016 Q4	1.8	3.8	-1.8	0.1	4.7	3.0	0.4	1.7	2.2	4.1	3.8	3.5	23,276.7	184.1	268.5	22.5
2017 Q1	1.2	3.3	2.9	5.2	4.7	3.1	0.6	2.0	2.5	4.2	4.2	3.8	24,508.3	187.1	262.3	13.1
2017 Q2	3.1	4.1	2.7	3.0	4.3	-0.3	0.9	1.8	2.3	4.0	4.0	4.0	25,125.0	190.0	272.1	16.0
2017 Q3	3.2	5.3	0.5	2.1	4.3	2.0	1.0	1.8	2.3	3.9	3.9	4.3	26,148.5	193.2	275.2	16.0
2017 Q4	2.7	5.0	1.9	5.6	4.1	3.7	1.2	2.1	2.4	4.0	3.9	4.3	27,673.2	194.4	278.7	13.1
2018 Q1	-4.7	-2.3	1.4	3.0	5.0	1.4	0.1	1.9	2.4	7.1	5.3	3.3	13,465.6	185.7	261.9	50.7
2018 Q2	-8.9	-7.1	-4.2	-3.1	6.5	0.9	0.1	1.9	2.4	7.7	5.7	3.3	11,631.4	171.1	234.1	62.4
2018 Q3	-6.8	-5.1	-5.1	-3.8	7.6	1.2	0.1	1.9	2.4	7.9	5.8	3.3	10,575.2	159.4	211.8	59.5
2018 Q4	-4.7	-3.0	-3.9	-2.5	8.5	1.3	0.1	1.9	2.4	8.0	5.9	3.3	10,306.1	150.7	195.1	52.8
2019 Q1	-3.6	-1.8	-2.9	-1.5	9.3	1.5	0.1	1.9	2.4	8.1	6.0	3.2	9,689.4	143.4	181.1	47.4
2019 Q2	-1.3	0.3	-2.4	-1.0	9.7	1.5	0.1	1.9	2.4	7.9	6.0	3.2	10,099.8	139.0	172.8	37.9
2019 Q3	-0.2	1.4	-1.4	-0.1	10.0	1.5	0.1	1.9	2.4	7.5	5.8	3.2	10,948.6	136.1	167.2	29.7
2019 Q4	2.8	4.3	-0.1	1.5	9.9	1.8	0.1	1.9	2.4	7.1	5.7	3.2	12,031.1	136.1	167.2	23.5
2020 Q1	3.5	4.8	1.9	3.4	9.7	1.8	0.1	1.9	2.4	6.7	5.5	3.2	13,234.4	136.2	167.3	19.8
2020 Q2	4.0	5.2	2.3	3.7	9.5	1.7	0.1	1.9	2.4	6.3	5.3	3.2	14,712.7	137.3	169.5	17.5
2020 Q3	4.2	5.3	2.7	4.1	9.2	1.6	0.1	1.9	2.4	5.9	5.1	3.2	16,323.1	138.8	172.3	16.0
2020 Q4	4.5	5.5	3.1	4.3	8.9	1.6	0.1	1.9	2.4	5.5	4.9	3.2	18,143.2	140.7	176.0	15.0
2021 Q1	4.5	5.4	3.3	4.5	8.6	1.5	0.1	1.9	2.4	5.0	4.7	3.2	20,168.3	143.0	180.5	14.4

Appendix 9: Severely Adverse Scenario - International

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
2003 Q1	-1.0	3.3	1.1	6.7	3.6	105.5	-0.5	0.0	118.1	2.5	1.7	1.6
2003 Q2	0.2	0.5	1.2	2.1	1.1	104.0	3.3	0.3	119.9	3.7	0.2	1.7
2003 Q3	2.1	2.1	1.2	14.3	0.1	102.6	1.6	-0.5	111.4	4.0	1.7	1.7
2003 Q4	3.1	2.3	1.3	13.0	5.5	103.4	4.5	-1.0	107.1	3.1	1.7	1.8
2004 Q1	2.3	2.2	1.2	5.6	4.0	101.4	3.1	0.8	104.2	2.1	1.4	1.8
2004 Q2	2.1	2.6	1.2	6.9	4.1	102.8	-0.1	-0.4	109.4	1.7	0.8	1.8
2004 Q3	1.2	2.0	1.2	8.2	4.1	102.7	2.1	-0.1	110.2	0.9	1.1	1.8
2004 Q4	1.5	2.4	1.4	6.4	0.8	98.9	-1.1	1.9	102.7	1.5	2.4	1.9
2005 Q1	0.7	1.4	1.3	10.6	2.9	98.6	1.9	-1.2	107.2	3.4	2.6	1.9
2005 Q2	2.7	2.2	1.2	8.6	1.5	98.9	3.2	-1.0	110.9	4.4	1.8	1.8
2005 Q3	3.0	3.1	1.2	9.3	2.4	98.6	3.9	-1.0	113.3	4.3	2.8	1.8
2005 Q4	2.4	2.4	1.2	11.7	1.6	98.1	0.8	0.1	117.9	6.0	1.4	1.7
2006 Q1	3.7	1.7	1.2	11.0	2.4	96.8	0.3	1.2	117.5	1.1	1.9	1.7
2006 Q2	4.3	2.5	1.3	7.0	3.2	96.7	1.4	0.4	114.5	0.8	3.0	1.8
2006 Q3	2.6	2.1	1.3	10.3	2.2	96.4	-0.7	0.4	118.0	0.3	3.3	1.9
2006 Q4	4.5	0.9	1.3	11.2	3.6	94.6	4.9	-0.5	119.0	1.5	2.6	2.0
2007 Q1	3.0	2.3	1.3	13.9	3.6	94.0	3.0	-0.7	117.6	3.7	2.5	2.0
2007 Q2	2.6	2.3	1.4	10.5	4.9	91.9	0.5	0.4	123.4	2.9	1.8	2.0
2007 Q3	2.0	2.1	1.4	8.7	7.6	90.6	-1.8	0.3	115.0	2.7	0.3	2.0
2007 Q4	2.1	4.8	1.5	12.8	5.9	89.4	2.0	2.2	111.7	3.3	4.0	2.0
2008 Q1	2.2	4.3	1.6	7.2	8.1	88.0	1.2	1.2	99.9	1.1	3.4	2.0
2008 Q2	-1.5	3.2	1.6	6.0	6.3	88.7	-2.0	1.8	106.2	-2.7	5.8	2.0
2008 Q3	-2.3	3.2	1.4	3.1	2.9	91.5	-5.0	3.4	105.9	-6.3	5.9	1.8
2008 Q4	-6.7	-1.4	1.4	0.3	-1.1	92.2	-8.8	-2.1	90.8	-8.4	0.4	1.5
2009 Q1	-11.2	-1.1	1.3	4.4	-1.4	94.2	-18.2	-3.6	99.2	-6.2	-0.2	1.4
2009 Q2	-1.1	0.0	1.4	15.1	2.3	92.2	8.7	-1.6	96.4	-0.9	2.3	1.6
2009 Q3	1.2	1.1	1.5	12.7	4.1	91.3	0.1	-1.4	89.5	0.6	3.6	1.6
2009 Q4	2.2	1.6	1.4	9.2	5.0	90.6	5.9	-1.5	93.1	1.1	2.8	1.6
2010 Q1	1.7	1.8	1.4	9.8	4.4	89.8	3.5	1.0	93.4	2.2	4.2	1.5
2010 Q2	3.8	2.0	1.2	9.7	3.4	91.0	5.1	-1.4	88.5	3.6	3.3	1.5
2010 Q3	1.8	1.6	1.4	8.8	4.2	88.4	7.5	-1.9	83.5	1.9	2.2	1.6
2010 Q4	2.4	2.6	1.3	9.2	7.5	87.4	-2.9	1.3	81.7	0.3	3.9	1.5
2011 Q1	3.4	3.7	1.4	9.8	6.2	86.4	-6.1	-0.1	82.8	2.4	7.0	1.6
2011 Q2	0.0	3.2	1.5	6.5	5.4	85.3	-1.9	-0.7	80.6	0.6	4.6	1.6
2011 Q3	0.0	1.3	1.3	5.4	5.3	87.3	10.1	0.3	77.0	1.5	3.5	1.6
2011 Q4	-1.4	3.5	1.3	6.7	3.0	87.3	-0.6	-0.6	77.0	0.8	3.4	1.6

Appendix 9: Severely Adverse Scenario - International (Cont.)

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
2012 Q1	-0.6	2.8	1.3	7.4	3.2	86.2	4.6	2.2	82.4	2.6	2.3	1.6
2012 Q2	-1.4	2.3	1.3	5.9	3.9	88.0	-2.4	-1.4	79.8	-0.4	1.9	1.6
2012 Q3	-0.6	1.6	1.3	6.6	2.2	86.1	-1.5	-1.9	77.9	4.7	2.1	1.6
2012 Q4	-1.7	2.4	1.3	7.2	3.5	86.0	0.9	0.1	86.6	-0.6	4.2	1.6
2013 Q1	-1.3	1.2	1.3	6.5	4.3	86.2	4.5	0.7	94.2	2.6	3.0	1.5
2013 Q2	1.9	0.4	1.3	6.4	3.0	87.1	3.8	-0.1	99.2	2.2	1.5	1.5
2013 Q3	1.4	1.3	1.4	7.7	3.7	86.5	3.1	2.7	98.3	3.4	2.1	1.6
2013 Q4	1.0	0.3	1.4	6.7	4.0	85.8	0.0	2.6	105.3	2.1	1.7	1.7
2014 Q1	1.7	0.8	1.4	6.0	1.4	86.8	3.3	1.1	103.0	3.5	1.8	1.7
2014 Q2	0.5	0.0	1.4	7.4	2.6	86.6	-6.6	8.2	101.3	3.5	1.4	1.7
2014 Q3	1.7	0.3	1.3	6.7	2.3	86.9	-0.2	1.6	109.7	3.1	0.8	1.6
2014 Q4	2.0	-0.4	1.2	5.7	1.2	88.1	2.8	-0.5	119.9	3.1	-0.4	1.6
2015 Q1	3.0	-0.9	1.1	6.1	0.8	87.9	5.1	0.4	120.0	1.4	-1.3	1.5
2015 Q2	1.3	1.9	1.1	6.9	2.8	88.3	0.5	0.5	122.1	2.3	0.8	1.6
2015 Q3	1.7	-0.2	1.1	6.5	2.7	90.9	0.3	0.1	119.8	1.7	0.8	1.5
2015 Q4	1.9	-0.1	1.1	5.4	1.5	92.2	-0.9	-0.4	120.3	2.9	0.0	1.5
2016 Q1	2.0	-1.3	1.1	6.6	2.8	91.7	2.2	0.0	112.4	0.8	-0.1	1.4
2016 Q2	1.4	1.2	1.1	6.6	2.8	94.0	1.6	-1.1	102.8	1.9	0.7	1.3
2016 Q3	1.6	1.2	1.1	6.1	1.2	93.6	0.9	-0.5	101.2	2.2	2.2	1.3
2016 Q4	2.7	1.8	1.1	5.7	2.3	97.5	1.4	3.0	116.8	3.0	2.0	1.2
2017 Q1	2.5	2.8	1.1	6.7	0.6	95.2	1.5	-0.1	111.4	1.2	3.7	1.3
2017 Q2	2.9	0.2	1.1	6.0	2.0	94.5	2.9	-0.8	112.4	1.2	3.0	1.3
2017 Q3	2.9	1.0	1.2	6.6	2.4	93.5	2.5	0.4	112.6	1.6	2.4	1.3
2017 Q4	2.3	1.7	1.2	5.9	2.6	91.0	1.8	0.9	112.7	1.4	2.9	1.4
2018 Q1	-4.0	0.1	1.1	-1.5	0.3	99.5	-3.8	-2.6	108.6	-3.5	0.6	1.3
2018 Q2	-5.2	-0.7	1.1	-0.8	-1.0	103.5	-7.4	-3.7	106.4	-5.1	-0.2	1.3
2018 Q3	-4.3	-1.1	1.1	1.5	-1.7	105.9	-9.9	-5.0	103.4	-4.8	-0.7	1.3
2018 Q4	-3.3	-1.2	1.1	2.9	-2.2	107.5	-11.4	-5.8	100.9	-4.1	-0.9	1.3
2019 Q1	-1.6	-0.8	1.1	4.9	-2.1	106.3	-9.8	-5.2	100.5	-2.8	-0.6	1.3
2019 Q2	-0.1	-0.5	1.1	5.9	-1.8	105.0	-7.3	-4.5	100.0	-1.4	-0.3	1.3
2019 Q3	1.0	-0.1	1.1	6.2	-1.4	103.7	-5.0	-3.7	99.6	-0.2	0.1	1.3
2019 Q4	1.7	0.3	1.1	6.2	-1.0	102.5	-3.2	-3.0	99.3	0.8	0.4	1.3
2020 Q1	2.1	0.6	1.1	6.3	-0.6	101.1	-1.7	-2.3	99.3	1.5	0.7	1.3
2020 Q2	2.4	0.8	1.1	6.4	-0.3	100.0	-0.5	-1.7	99.4	2.1	1.0	1.3
2020 Q3	2.4	1.0	1.1	6.5	0.0	98.9	0.3	-1.2	99.6	2.4	1.2	1.3
2020 Q4	2.4	1.1	1.1	6.5	0.4	98.1	0.9	-0.7	99.9	2.6	1.3	1.3
2021 Q1	2.3	1.2	1.1	6.6	0.8	97.4	1.3	-0.3	100.1	2.6	1.4	1.3

Appendix 10: Global Market Shock - Adverse

Securitized Products

Trading, PE & Other Fair Value AssetsSecuritized Products

								RMBS							
					Unspec Non-							Prime Whole	Non-Prime	F	Other /
	Non-Agency Prime	Sub-prime	Option ARMS	Other AltA	Prime	HELOC	RMBS CDO	RMBS CDS	Credit Basket	PrimeX	ABX / TABX	Loans	Whole Loans	European RMBS	Unspecified
Relative MV Shock Bas		•													
AAA Total															
Pre 2006	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-30.6%	-38.3%	-7.7%	-7.7%
2006	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-30.6%	-38.3%	-8.6%	-8.6%
2007	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-30.6%	-38.3%	-7.9%	-7.9%
Post 2007	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-21.4%	-38.3%	-7.9%	-7.9%
Unspecified Vintage	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-8.6%	-30.6%	-38.3%	-8.6%	-8.6%
AA Total															
Pre 2006	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-16.1%	-30.6%	-38.3%	-16.1%	-16.1%
2006	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-30.6%	-38.3%	-17.9%	-17.9%
2007	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-30.6%	-38.3%	-16.4%	-16.4%
Post 2007	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-16.4%	-21.4%	-38.3%	-16.4%	-16.4%
Unspecified Vintage	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-17.9%	-30.6%	-38.3%	-17.9%	-17.9%
A Total															
Pre 2006	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-17.2%	-30.6%	-38.3%	-17.2%	-17.2%
2006	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-30.6%	-38.3%	-19.1%	-19.1%
2007	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-30.6%	-38.3%	-17.5%	-17.5%
Post 2007	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-21.4%	-38.3%	-17.5%	-17.5%
Unspecified Vintage	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-30.6%	-38.3%	-19.1%	-19.1%
BBB Total															
Pre 2006	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-19.1%	-30.6%	-38.3%	-19.1%	-19.1%
2006	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-30.6%	-38.3%	-21.2%	-21.2%
2007	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-30.6%	-38.3%	-19.3%	-19.3%
Post 2007	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-19.3%	-21.4%	-38.3%	-19.3%	-19.3%
Unspecified Vintage	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-21.2%	-30.6%	-38.3%	-21.2%	-21.2%
BB Total															
Pre 2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2007	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
Post 2007	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-21.4%	-38.3%	-22.9%	-22.9%
Unspecified Vintage	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
B Total								•			•				
Pre 2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2007	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
Post 2007	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-21.4%	-38.3%	-22.9%	-22.9%
Unspecified Vintage	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
4D T-4-1			•				•					•			-
<b total<br="">Pre 2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2006 2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9% -22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
Post 2007	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.0%	-38.3%	-22.9%	-22.9%
Unspecified Vintage	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
							•	•			•	•			
NR Total Pre 2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9% -22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
2006	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
Post 2007	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
Unspecified Vintage	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-22.9%	-30.6%	-38.3%	-22.9%	-22.9%
pecinea tintage		22.573	22.370	22.370	22.370	LL.3/0			22.570	22.570		30.070	30.370	LL.3,3	

Securitized Products

Trading, PE & Other Fair Value Assets

Securitized Products

1				ABS							CMBS				Corporate	e CDO / CLO	Ware	house	1
			Student			Index	Other/	Cash Non-				Index		Other/		Other/		Total	Other/
	Autos	Credit Cards	Loans	ABS CDS	Credit Basket	Tranches	Unspecified	Agency CMBS	CMBS CDS	CMBS CDO	Credit Basket	Tranches	Whole Loans	Unspecified	CLO	Unspecified	Total Size	Protection	Unspecified
Relative MV Shock Base AAA Total	d on Curren	t Rating (%)																	T
Pre 2006	-0.7%	-3.3%	-2.7%	-3.3%	-3.3%	-3.3%	-3.3%	-2.6%	-1.6%	-2.6%	-1.6%	-1.6%	-28.1%	-2.6%	-1.5%	-1.5%	-4.6%	4.6%	-0.7%
2006	-0.7%	-3.3%	-3.0%	-3.3%	-3.3%	-3.3%	-3.3%	-2.7%	-1.7%	-2.7%	-1.7%	-1.7%	-28.1%	-2.7%	-1.5%	-1.5%	-4.6%	5.5%	-0.7%
2007	-0.7%	-3.3%	-3.6%	-3.6%	-3.6%	-3.6%	-3.6%	-2.8%	-1.7%	-2.8%	-1.7%	-1.7%	-28.1%	-2.8%	-1.5%	-1.5%	-5.5%	5.5%	-0.7%
Post 2007	-0.7%	-3.3%	-2.9%	-3.3%	-3.3%	-3.3%	-3.3%	-11.7%	-7.1%	-11.7%	-7.1%	-7.1%	-29.4%	-11.7%	-4.4%	-4.4%	-4.6%	4.6%	-0.7%
Unspecified Vintage	-0.7%	-3.3%	-3.6%	-3.6%	-3.6%	-3.6%	-3.6%	-11.7%	-7.1%	-11.7%	-7.1%	-7.1%	-29.4%	-11.7%	-4.4%	-4.4%	-5.5%	5.5%	-0.7%
AA Total		•		•	•		•			•			•						
Pre 2006	-1.1%	-5.0%	-6.5%	-6.5%	-6.5%	-6.5%	-6.5%	-6.4%	-3.8%	-6.4%	-3.8%	-3.8%	-28.1%	-6.4%	-6.6%	-6.6%	-4.6%	4.6%	-0.7%
2006	-1.1%	-5.0%	-7.3%	-7.3%	-7.3%	-7.3%	-7.3%	-6.6%	-4.0%	-6.6%	-4.0%	-4.0%	-28.1%	-6.6%	-6.6%	-6.6%	-5.5%	5.5%	-0.7%
2007	-1.1%	-5.0%	-8.7%	-8.7%	-8.7%	-8.7%	-8.7%	-6.8%	-4.1%	-6.8%	-4.1%	-4.1%	-28.1%	-6.8%	-6.6%	-6.6%	-5.5%	5.5%	-0.7%
Post 2007	-1.1%	-5.0%	-7.0%	-7.0%	-7.0%	-7.0%	-7.0%	-29.2%	-17.5%	-29.2%	-17.5%	-17.5%	-29.4%	-29.2%	-14.0%	-14.0%	-4.6%	4.6%	-0.7%
Unspecified Vintage	-1.1%	-5.0%	-8.7%	-8.7%	-8.7%	-8.7%	-8.7%	-29.2%	-17.5%	-29.2%	-17.5%	-17.5%	-29.4%	-29.2%	-14.0%	-14.0%	-5.5%	5.5%	-0.7%
A Total																			
Pre 2006	-2.2%	-5.0%	-7.4%	-7.4%	-7.4%	-7.4%	-7.4%	-8.1%	-4.9%	-8.1%	-4.9%	-4.9%	-28.1%	-8.1%	-10.5%	-10.5%	-4.6%	4.6%	-0.7%
2006	-2.2%	-5.0%	-8.2%	-8.2%	-8.2%	-8.2%	-8.2%	-8.4%	-5.1%	-8.4%	-5.1%	-5.1%	-28.1%	-8.4%	-10.5%	-10.5%	-5.5%	5.5%	-0.7%
2007	-2.2%	-5.0%	-9.8%	-9.8%	-9.8%	-9.8%	-9.8%	-8.7%	-5.2%	-8.7%	-5.2%	-5.2%	-28.1%	-8.7%	-10.5%	-10.5%	-5.5%	5.5%	-0.7%
Post 2007	-2.2%	-5.0%	-7.9%	-7.9%	-7.9%	-7.9%	-7.9%	-37.2%	-22.3%	-37.2%	-22.3%	-22.3%	-29.4%	-37.2%	-20.6%	-20.6%	-4.6%	4.6%	-0.7%
Unspecified Vintage	-2.2%	-5.0%	-9.8%	-9.8%	-9.8%	-9.8%	-9.8%	-37.2%	-22.3%	-37.2%	-22.3%	-22.3%	-29.4%	-37.2%	-20.6%	-20.6%	-5.5%	5.5%	-0.7%
BBB Total																			
Pre 2006	-2.2%	-9.5%	-8.9%	-9.5%	-9.5%	-9.5%	-9.5%	-9.4%	-5.6%	-9.4%	-5.6%	-5.6%	-28.1%	-9.4%	-11.2%	-11.2%	-4.6%	4.6%	-11.0%
2006	-2.2%	-9.5%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.8%	-5.8%	-9.8%	-5.8%	-5.8%	-28.1%	-9.8%	-11.2%	-11.2%	-5.5%	5.5%	-11.0%
2007	-2.2%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-10.1%	-6.0%	-10.1%	-6.0%	-6.0%	-28.1%	-10.1%	-11.2%	-11.2%	-5.5%	5.5%	-11.0%
Post 2007	-2.2%	-9.5%	-9.5%	-9.5%	-9.5%	-9.5%	-9.5%	-43.1%	-25.9%	-43.1%	-25.9%	-25.9%	-29.4%	-43.1%	-21.5%	-21.5%	-4.6%	4.6%	-11.0%
Unspecified Vintage	-2.2%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-43.1%	-25.9%	-43.1%	-25.9%	-25.9%	-29.4%	-43.1%	-21.5%	-21.5%	-5.5%	5.5%	-11.0%
BB Total																			
Pre 2006	-2.8%	-9.5%	-8.9%	-9.5%	-9.5%	-9.5%	-9.5%	-9.4%	-5.6%	-9.4%	-5.6%	-5.6%	-28.1%	-9.4%	-11.9%	-11.9%	-4.6%	4.6%	-11.0%
2006	-2.8%	-9.5%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.8%	-5.8%	-9.8%	-5.8%	-5.8%	-28.1%	-9.8%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
2007	-2.8%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-10.1%	-6.0%	-10.1%	-6.0%	-6.0%	-28.1%	-10.1%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
Post 2007	-2.8%	-9.5%	-9.5%	-9.5%	-9.5%	-9.5%	-9.5%	-43.1%	-25.9%	-43.1%	-25.9%	-25.9%	-29.4%	-43.1%	-21.9%	-21.9%	-4.6%	4.6%	-11.0%
Unspecified Vintage	-2.8%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-43.1%	-25.9%	-43.1%	-25.9%	-25.9%	-29.4%	-43.1%	-21.9%	-21.9%	-5.5%	5.5%	-11.0%
B Total																			
Pre 2006	-2.8%	-9.5%	-8.9%	-9.5%	-9.5%	-9.5%	-9.5%	-9.4%	-5.6%	-9.4%	-5.6%	-5.6%	-28.1%	-9.4%	-11.9%	-11.9%	-4.6%	4.6%	-11.0%
2006	-2.8%	-9.5%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.8%	-5.8%	-9.8%	-5.8%	-5.8%	-28.1%	-9.8%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
2007	-2.8%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-10.1%	-6.0%	-10.1%	-6.0%	-6.0%	-28.1%	-10.1%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
Post 2007	-2.8% -2.8%	-9.5% -9.5%	-9.5% -11.8%	-9.5%	-9.5% -11.8%	-9.5% -11.8%	-9.5% -11.8%	-43.1% -43.1%	-25.9% -25.9%	-43.1% -43.1%	-25.9% -25.9%	-25.9% -25.9%	-29.4% -29.4%	-43.1% -43.1%	-21.9%	-21.9%	-4.6% -5.5%	4.6% 5.5%	-11.0%
Unspecified Vintage	-2.8%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-43.1%	-25.9%	-43.1%	-25.9%	-25.9%	-29.4%	-43.1%	-21.9%	-21.9%	-5.5%	5.5%	-11.0%
<b td="" total<=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>																			
Pre 2006	-2.8%	-9.5%	-8.9%	-9.5%	-9.5%	-9.5%	-9.5%	-9.4%	-5.6%	-9.4%	-5.6%	-5.6%	-28.1%	-9.4%	-11.9%	-11.9%	-4.6%	4.6%	-11.0%
2006	-2.8%	-9.5%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.8%	-5.8%	-9.8%	-5.8%	-5.8%	-28.1%	-9.8%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
2007	-2.8%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-10.1%	-6.0%	-10.1%	-6.0%	-6.0%	-28.1%	-10.1%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
Post 2007 Unspecified Vintage	-2.8% -2.8%	-9.5% -9.5%	-9.5% -11.8%	-9.5% -11.8%	-9.5% -11.8%	-9.5% -11.8%	-9.5% -11.8%	-43.1% -43.1%	-25.9% -25.9%	-43.1% -43.1%	-25.9% -25.9%	-25.9% -25.9%	-29.4% -29.4%	-43.1% -43.1%	-21.9% -21.9%	-21.9% -21.9%	-4.6% -5.5%	4.6% 5.5%	-11.0% -11.0%
1 -	-2.8%	-9.5%	-11.8%	-11.8%	-11.8%	-11.8%	-11.8%	-43.1%	-25.9%	-43.1%	-25.9%	-25.9%	-29.4%	-43.1%	-21.5%	-21.9%	-5.5%	5.5%	-11.0%
NR Total		, ,		T	, ,		1			1			1					1	ļ
Pre 2006	-2.8%	-9.5%	-8.9%	-9.5%	-9.5%	-9.5%	-9.5%	-9.4%	-5.6%	-9.4%	-5.6%	-5.6%	-27.5%	-9.4%	-11.9%	-11.9%	-4.6%	4.6%	-11.0%
2006	-2.8%	-9.5%	-9.9%	-9.9%	-9.9%	-9.9%	-9.9%	-9.8%	-5.8%	-9.8%	-5.8%	-5.8%	-27.8%	-9.8%	-11.9%	-11.9%	-5.5%	5.5%	-11.0%
2007 Post 2007	-2.8% -2.8%	-9.5% -9.5%	-11.8% -9.5%	-11.8% -9.5%	-11.8% -9.5%	-11.8% -9.5%	-11.8% -9.5%	-10.1% -43.1%	-6.0% -25.9%	-10.1% -43.1%	-6.0% -25.9%	-6.0% -25.9%	-28.1% -29.4%	-10.1% -43.1%	-11.9% -21.9%	-11.9% -21.9%	-5.5% -4.6%	5.5% 4.6%	-11.0% -11.0%
Post 2007 Unspecified Vintage	-2.8%	-9.5% -9.5%	-9.5%	-9.5% -11.8%	-9.5% -11.8%	-9.5% -11.8%	-9.5% -11.8%	-43.1% -43.1%	-25.9%	-43.1% -43.1%	-25.9% -25.9%	-25.9%	-29.4%	-43.1% -43.1%	-21.9%	-21.9%	-4.6% -5.5%	5.5%	-11.0%
onspecified vilitage	-4.070	-3.376	-11.070	-11.070	-11.070	-11.070	-11.070	-43.170	-23.370	-43.170	-23.376	-23.370	-23.470	-43.170	-21.370	-21.370	-3.376	3.3%	-11.0%

Municipals

Trading, PE & Other Fair Value Assets

	-
	Spread Widening (bps)
Bonds	
AAA	7.0
AA	11.0
Α	21.0
BBB	42.0
вв	84.0
В	126.0
<b< th=""><td>168.0</td></b<>	168.0
NR	168.0
Loans	
AAA	7.0
AA	11.0
A	21.0
BBB	42.0
вв	84.0
В	126.0
<b< th=""><td>168.0</td></b<>	168.0
NR	168.0
CDS	
AAA	5.3
AA	8.4
A	12.9
ввв	22.2
вв	65.7
В	97.3
<b< th=""><td>114.1</td></b<>	114.1
NR	114.1
Indices	
AAA	5.3
AA	8.4
A 	12.9
BBB	22.2
BB	65.7
В	97.3
<b< th=""><td>114.1</td></b<>	114.1
NR	114.1
Other / Unspecified Munis	
AAA	7.0
AA	11.0
A	21.0
BBB	42.0
BB	84.0
В	126.0
<b< th=""><td>168.0</td></b<>	168.0
NR	168.0

Agencies

Trading, PE & Other Fair Value Assets

Agencies

OAS Widening (bps)

US Residential Agency Products

OS Residential Agency Products
IOs
POs
Other CMOs
Pass-Throughs
Agency Debt/Debentures
IOS Index
POS Index
MBX Index
Other Agency Derivatives
TBA's
Reverse Mortgages
Residential Other / Unspecified

893.0
81.0
103.0
94.1
82.4
893.0
81.0
74.1
103.0
74.1
103.0
74.1

US Commercial Agency Products

Cash Agency CMBS	
Agency CMBS Derivatives	
Commercial Other / Unspecified	

115.0	
115.0	
115.0	

Non-US Agency Products

AAA			
AA			
Α			
BBB			
вв			
В			
<b< th=""><th></th><th></th><th></th></b<>			
NR			

41.8
52.3
173.2
294.1
835.0
1,043.8
1,252.5
1,252.5

Rates DV01

DFAST 2018 Market Shocks: Adverse Scenario

Rates DV01

							MATURIT	Υ					
Rates Shocks (bps)	1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	30Y
AUD Directional Risks													
Governments	(16.9)	(16.1)	(14.9)	(14.0)	(13.2)	(11.3)	(10.9)	(11.9)	(13.6)	(15.4)	(15.8)	(14.6)	(11.5)
Agencies	(16.9)	(16.1)	(14.9)	(14.0)	(13.2)	(11.3)	(10.9)	(11.9)	(13.6)	(15.4)	(15.8)	(14.6)	(11.5)
Municipals	(16.9)	(16.1)	(14.9)	(14.0)	(13.2)	(11.3)	(10.9)	(11.9)	(13.6)	(15.4)	(15.8)	(14.6)	(11.5)
Swaps / Discounting Curve	(3.8)	(3.3)	(2.8)	(2.2)	(1.8)	(0.2)	0.8	1.8	2.0	1.6	0.4	(0.6)	(2.0)
Instruments shocked by MV**	· ·												
Other	(3.8)	(3.3)	(2.8)	(2.2)	(1.8)	(0.2)	0.8	1.8	2.0	1.6	0.4	(0.6)	(2.0)
AUD Basis Risks (Do not include the sw OIS Basis 1m Basis	ap/discounting	curve specifie	ed above)	1							1		
3m Basis													
6m Basis													
12m Basis													
Other Basis		1	1	<u> </u>	1	1	1	1	 	 	1		
CAD Directional Risks													
Governments	(47.3)	(47.6)	(48.1)	(48.5)	(48.9)	(50.5)	(51.7)	(53.7)	(54.9)	(55.6)	(54.6)	(51.7)	(43.0)
Agencies	(47.3)	(47.6)	(48.1)	(48.5)	(48.9)	(50.5)	(51.7)	(53.7)	(54.9)	(55.6)	(54.6)	(51.7)	(43.0)
Municipals	(47.3)	(47.6)	(48.1)	(48.5)	(48.9)	(50.5)	(51.7)	(53.7)	(54.9)	(55.6)	(54.6)	(51.7)	(43.0)
Swaps / Discounting Curve	(21.8)	(25.2)	(29.9)	(34.0)	(37.6)	(38.0)	(38.2)	(39.0)	(39.5)	(40.0)	(38.0)	(38.0)	(38.0)
Instruments shocked by MV**	(==:0)	(==:=)	(2010)	(0.110)	(0110)	(00.0)	(00.2)	(00.0)	(20.0)	(1010)	(00.0)	(20.0)	(00.0)
Other	(21.8)	(25.2)	(29.9)	(34.0)	(37.6)	(38.0)	(38.2)	(39.0)	(39.5)	(40.0)	(38.0)	(38.0)	(38.0)
CAD Basis Risks (Do not include the sw OIS Basis	ap/discounting	curve specifie	ed above)										
1m Basis									-	-			
3m Basis													
6m Basis									-	-			
12m Basis									-	-			
Other Basis CHF Directional Risks													
Governments	(6.9)	(6.4)	(5.8)	(5.5)	(5.3)	(6.1)	(8.1)	(12.4)	(15.7)	(18.5)	(19.8)	(19.8)	(19.5)
Agencies	(6.9)	(6.4)	(5.8)	(5.5)	(5.3)	(6.1)	(8.1)	(12.4)	(15.7)	(18.5)	(19.8)	(19.8)	(19.5)
Municipals	(6.9)	(6.4)	(5.8)	(5.5)	(5.3)	(6.1)	(8.1)	(12.4)	(15.7)	(18.5)	(19.8)	(19.8)	(19.5)
Swaps / Discounting Curve	(5.0)	(5.0)	(4.0)	(4.0)	(4.0)	(5.5)	(6.0)	(7.0)	(8.0)	(11.0)	(13.0)	(13.0)	(13.0)
Instruments shocked by MV** Other	(5.0)	(5.0)	(4.0)	(4.0)	(4.0)	(5.5)	(6.0)	(7.0)	(8.0)	(11.0)	(13.0)	(13.0)	(13.0)
CHF Basis Risks (Do not include the swa	ap/discounting	curve specifie	d above)	1	1	1	1	1	<u> </u>	Ι	1	<u> </u>	1
1m Basis													
3m Basis				1				1	İ	1			
6m Basis				1					1	1	1		
	<u> </u>	†	 	1				1			1		
12m Basis													

Rates DV01 (Continued)

(24.8) (24.8) (24.8) (16.8) (16.8) (16.8) ng curve specifi	(23.4)	(24.9) (24.9) (24.9) (14.9) (14.9)	(24.7) (24.7) (24.7) (14.1) (14.1)	(23.3) (23.3) (23.3) (11.4) (11.4)	(21.2) (21.2) (21.2) (21.2) (9.4)	(17.0) (17.0) (17.0) (17.0) (7.3)	(13.9) (13.9) (13.9) (6.7) (6.7)	(11.2) (11.2) (11.2) (7.6) (7.6)	(9.5) (9.5) (9.5) (9.6) (6.0)	(9.1) (9.1) (9.1) (6.0) (6.0)	(8.9) (8.9) (8.9) (6.0) (6.0)
(24.8) (16.8) (16.8) ng curve specifi	(24.9) (15.8) (15.8) ed above)	(24.9) (14.9)	(24.7) (14.1)	(23.3) (11.4)	(21.2) (9.4)	(17.0) (7.3)	(13.9) (6.7)	(11.2) (7.6)	(9.5) (6.0)	(9.1) (6.0)	(8.9) (6.0)
(16.8) (16.8) (16.8) ng curve specifi (23.6) (26.9) (14.8)	(15.8) (15.8) ed above)	(14.9)	(14.1)	(11.4)	(9.4)	(7.3)	(6.7)	(7.6)	(6.0)	(6.0)	(6.0)
(16.8) ng curve specifi (23.6) (26.9) (14.8)	(15.8) ed above)				(9.4)	, í	(6.7)	• •		, ,	(6.0)
(16.8) ng curve specifi (23.6) (26.9) (14.8)	(15.8) ed above)			(11.4)		(7.3)		(7.6)		(6.0)	(6.0)
(23.6) (26.9) (14.8)	(23.4)	(14.9)	(14.1)	(11.4)	(9.4)	(7.3)	(6.7)	(7.6)	(6.0)	(6.0)	(6.0)
(23.6) (26.9) (14.8)	(23.4)										
(23.6) (26.9) (14.8)	(23.4)										
(26.9) (14.8)	· · ·								 		ļ
(26.9) (14.8)	· · ·						ļ	ļ	1	1	
(26.9) (14.8)	· · ·								<u>, </u>	<u>'</u>	(
(26.9) (14.8)	· · ·										<u> </u>
(26.9) (14.8)	· · ·										i
(26.9) (14.8)	· · ·	<u> </u>									<u> </u>
(26.9) (14.8)	· · ·						<u>i</u>	<u> </u>		<u> </u>	i
(26.9) (14.8)	· · ·										
(26.9) (14.8)	· · ·										
(26.9) (14.8)	· · ·	(22.0)	(22.7)	(24.4)	(10.4)	(4.6.2)	(12.0)	(11 4)	(0.2)	(0.3)	(7.5)
(14.8)		(23.0)	(22.7)	(21.1)	(19.4)	(16.3)	(13.9)	(11.4)	(9.3)	(8.3)	(7.5)
	(25.2)	(23.7)	(22.4)	(19.0)	(17.5)	(17.2)	(18.3)	(20.1)	(22.0)	(22.8)	(23.4)
(22.2)	(16.4)	(17.8)	(19.1)	(22.7)	(24.7)	(25.9)	(25.5)	(24.1)	(22.5)	(22.2)	(22.5)
(22.2)	(22.5)	(22.8)	(23.0)	(23.4)	(23.2)	(22.3)	(21.4)	(20.5)	(20.1)	(20.2)	(20.4)
(27.1) 399.8	(26.1) 595.4	(25.2) 791.1	(24.5) 986.7	(22.5) 1,769.4	(21.7) 1,923.1	(21.6) 1,353.9	(22.3) 1,109.9	(23.5) 927.0	(24.9) 784.7	(25.6) 712.4	(26.3) 641.3
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											62.7 (29.2)
											32.8
											39.3
											(28.0) (28.0)
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	\/		· ,	, ,	,			, ,	` ',	· · · /	(28.0) (9.6)
(16.3)	(17.7)	(18.8)	(19.6)	(21.3)	(21.3)	(19.3)	(16.9)	(14.1)	(11.7)	(10.6)	(9.6)
(4.6.2)	(47.7)	(10.0)	(10.6)	(24.2)	(24.2)	(10.2)	(16.0)	(14.1)	(11.7)	(10.6)	(9.6)
(16.5)	(17.7)	(10.0)	(19.6)	(21.5)	(21.5)	(19.5)	(16.9)	(14.1)	(11.7)	(10.6)	(9.6)
ng curve specifi	ed above)										
(15.5)	(15.5)	(15.5)	(15.5)	(14.4)	(12.2)	(11.6)	(11.0)	(10.6)	(9.9)	(9.4)	(9.3)
(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	0.0	0.0	0.0	0.1	0.1	0.1	0.1
									I	1	
(1.5)	(1.4)	(1.3)	(1.3)	(0.8)	(0.2)	0.1	0.4	0.6	0.7	0.7	0.5
(4.0)	(3.7)	(3.5)	(3.4)	(1.9)	(0.5)	0.3	0.9	1.4	1.5	1.4	1.0
(20.6)	(20.7)	(20.7)	(20.0)	(20.0)	(22.2)	(24.6)	(25.6)	(25.0)	(22.4)	(20.2)	(25.0)
											(25.8)
											(25.8)
											(25.8)
(24.4)	(26.6)	(28.3)	(28.5)	(29.0)	(30.0)	(31.9)	(29.8)	(27.5)	(25.1)	(22.7)	(17.3)
(24.4)	(26.6)	(20.2)	(20 E)	(20.0)	(30.0)	(21.0)	(20.9)	(27.5)	(2F 1)	(22.7)	(17.3)
(24.4)	(20.6)	(28.3)	(28.5)	(29.0)	(30.0)	(31.9)	(29.8)	(27.5)	(25.1)	(22.7)	(17.3)
ng curve specifi	ed above)										
(15.5)	(15.5)	(15.5)	(15.5)	(14.4)	(12.2)	(11.6)	(11.0)	(10.6)	(9.9)	(9.4)	(9.3)
	(2.7)	(2.8)	(2.9)	(3.0)	(2.8)	(2.8)	(2.8)	, ,			(2.3)
(2.7)		,,	\5/	,,			(2.8)	(2.8)	(2.8)	(2,6)	
(2.7)						(2.0)	(2.8)	(2.8)	(2.8)	(2.6)	\/
· · ·	2.4	2.5	2.5	23	2.0	, í	` ′	` '		` '	, ,
2.4 5.2	2.4	2.5 5.4	2.5 5.5	2.3	2.0 5.9	1.9	2.0	(2.8) 2.1 5.3	(2.8) 2.2 5.1	2.2	2.2
5)))) 9) 9) 5)	37.5 (34.0) (34.0) (21.4) (25.7 (2) (33.4) (2) (33.4) (2) (33.4) (2) (33.4) (3) (16.3) (16.3) (16.3) (16.3) (16.3) (16.3) (16.3) (16.3) (16.3) (16.3) (16.3)	37.5 37.5 37.5 37.5 37.5 37.5 37.5 37.5	37.5 37.5 38.2 (29.1) (34.0) (31.4) (29.1) (34.0) (31.4) (29.1) (29.1) (21.4 21.9 22.1 25.7 26.2 26.5 (20.33.4) (31.0) (28.9) (20.33.4) (31.0) (28.9) (20.33.4) (31.0) (28.9) (31.0) (28.9) (31.0) (28.9) (31.0) (28.9) (31.0) (28.9) (31.0) (31	37.5 37.5 38.2 39.0 (34.0) (31.4) (29.1) (27.1) (27.1) (27.1) (27.1) (27.1) (27.1) (27.1) (27.1) (27.1) (27.1) (25.7 26.2 26.5 26.8 (29.1) (33.4) (31.0) (28.9) (27.1) (29.1) (33.4) (31.0) (28.9) (27.1) (29.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (28.9) (27.1) (33.4) (31.0) (33.4) (31.0) (33.4) (31.0) (33.4) (31.0) 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(21.6) (24.5) (26.2) (26.2) (33.4) (31.0) (28.9) (27.1) (22.0) (19.6) (18.5) (19.4) (21.6) (24.5) (26.2)

Rates DV01 (Continued)

JPY Directional Risks													
Governments	(12.0)	(12.3)	(12.6)	(12.9)	(13.2)	(14.2)	(15.0)	(16.5)	(17.9)	(20.6)	(26.5)	(33.2)	(46.1)
	(12.0)	(12.3)	(12.6)	(12.9)		(14.2)	(15.0)	(16.5)		(20.6)		(33.2)	(46.1)
Agencies					(13.2)				(17.9)		(26.5)		
Municipals	(12.0)	(12.3)	(12.6)	(12.9)	(13.2)	(14.2)	(15.0)	(16.5)	(17.9)	(20.6)	(26.5)	(33.2)	(46.1)
Swaps / Discounting Curve	0.7	0.1	(0.9)	(1.8)	(2.7)	(6.1)	(9.1)	(14.2)	(14.5)	(15.0)	(16.5)	(17.0)	(19.0)
Instruments shocked by MV**													
Other	0.7	0.1	(0.9)	(1.8)	(2.7)	(6.1)	(9.1)	(14.2)	(14.5)	(15.0)	(16.5)	(17.0)	(19.0)
JPY Basis Risks (Do not include the swa	/- 1:		d = 1 \										
OIS Basis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1m TIBOR Basis	(0.4)	(0.3)	(0.2)	0.2	0.1	0.2	0.2	0.3	0.3		0.7	0.9	
	(0.4)	(0.3)	(0.2)	0.2	0.1	0.2	0.2	0.3	0.3	0.4	0.7	0.9	1.1
3m TIBOR Basis													
6m TIBOR Basis	(0.5)	(0.3)	(0.3)	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2
12m TIBOR Basis													
1m LIBOR Basis	(0.4)	(0.3)	(0.2)	0.2	0.1	0.2	0.2	0.3	0.3	0.4	0.7	0.9	1.1
3m LIBOR Basis													
6m LIBOR Basis	(0.5)	(0.3)	(0.3)	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2
12m LIBOR Basis		, ,											
Other Basis													
other busis		I		I	1	1			<u> </u>	I	1	.	I.
NOK Directional Risks							T			1			
Governments	(10.9)	(10.0)	(8.7)	(7.4)	(6.2)	(2.1)	0.7	3.4	3.6	2.2	(0.5)	(2.3)	(4.3)
Agencies	(10.9)	(10.0)	(8.7)	(7.4)	(6.2)	(2.1)	0.7	3.4	3.6	2.2	(0.5)	(2.3)	(4.3)
Municipals	(10.9)	(10.0)	(8.7)	(7.4)	(6.2)	(2.1)	0.7	3.4	3.6	2.2	(0.5)	(2.3)	(4.3)
Swaps / Discounting Curve	19.8	16.9	14.3	13.3	13.3	19.4	27.9	39.0	41.8	37.8	26.5	16.6	3.8
Instruments shocked by MV**													
Other	19.8	16.9	14.3	13.3	13.3	19.4	27.9	39.0	41.8	37.8	26.5	16.6	3.8
NOK Basis Risks (Do not include the swa	ap/discounting	curve specifie	ed above)	ı	1	1	1			ı	1		
OIS Basis													
1m Basis													
3m Basis													
6m Basis													
12m Basis													
Other Basis													
Other Basis													
NZD Directional Risks													
NZD Directional Risks Governments	(22.7)	(20.7)	(18.2)	(16.1)	(14.4)	(10.4)	(9.0)	(9.0)	(9.8)	(10.6)	(11.2)	(11.3)	(11.5)
NZD Directional Risks	(22.7)	(20.7)	(18.2)	(16.1)	(14.4)	(10.4)	(9.0)	(9.0)	(9.8)	(10.6)	(11.2)	(11.3)	(11.5)
NZD Directional Risks Governments								(9.0) (9.0)	(9.8) (9.8)				
NZD Directional Risks Governments Agencies	(22.7)	(20.7)	(18.2)	(16.1)	(14.4)	(10.4)	(9.0)	(9.0)	(9.8)	(10.6)	(11.2)	(11.3)	(11.5)
NZD Directional Risks Governments Agencies Municipals	(22.7) (22.7)	(20.7) (20.7)	(18.2) (18.2)	(16.1) (16.1)	(14.4) (14.4)	(10.4) (10.4)	(9.0) (9.0)	(9.0) (9.0)	(9.8) (9.8)	(10.6) (10.6)	(11.2) (11.2)	(11.3) (11.3)	(11.5) (11.5)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve	(22.7) (22.7)	(20.7) (20.7)	(18.2) (18.2)	(16.1) (16.1)	(14.4) (14.4)	(10.4) (10.4)	(9.0) (9.0)	(9.0) (9.0)	(9.8) (9.8)	(10.6) (10.6)	(11.2) (11.2)	(11.3) (11.3)	(11.5) (11.5)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis	(22.7) (22.7) (6.7) (6.7)	(20.7) (20.7) (20.7) (3.7) (3.7)	(18.2) (18.2) 0.3 0.3 ed above)	(16.1) (16.1) 3.7 3.7	(14.4) (14.4) 6.6 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0 19.0	(9.0) (9.0) 21.7 21.7	(9.8) (9.8) 21.6 21.6	(10.6) (10.6) 20.3 20.3	(11.2) (11.2) 18.7 18.7	(11.3) (11.3) 17.9 17.9	(11.5) (11.5) 17.1 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis 12m Basis Other Basis	(22.7) (22.7) (22.7) (6.7)	(20.7) (20.7) (20.7) (3.7)	(18.2) (18.2) 0.3	(16.1) (16.1) 3.7	(14.4) (14.4) 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0	(9.0) (9.0) 21.7	(9.8) (9.8) 21.6	(10.6) (10.6) 20.3	(11.2) (11.2) 18.7	(11.3) (11.3) 17.9	(11.5) (11.5) 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(22.7) (22.7) (6.7) (6.7)	(20.7) (20.7) (20.7) (3.7) (3.7)	(18.2) (18.2) 0.3 0.3 ed above)	(16.1) (16.1) 3.7 3.7	(14.4) (14.4) 6.6 6.6	(10.4) (10.4) 14.7	(9.0) (9.0) 19.0 19.0	(9.0) (9.0) 21.7 21.7	(9.8) (9.8) 21.6 21.6	(10.6) (10.6) 20.3 20.3	(11.2) (11.2) 18.7 18.7	(11.3) (11.3) 17.9 17.9	(11.5) (11.5) 17.1 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis	(22.7) (22.7) (6.7) (6.7) (6.7)	(20.7) (20.7) (20.7) (3.7) (3.7) curve specifie	(18.2) (18.2) (18.2) 0.3 0.3 ed above)	(16.1) (16.1) 3.7 3.7 (34.9)	(14.4) (14.4) 6.6 6.6	(10.4) (10.4) 14.7 14.7	(9.0) (9.0) 19.0 19.0	(9.0) (9.0) (9.0) 21.7 21.7	(9.8) (9.8) (9.8) 21.6 21.6	(10.6) (10.6) 20.3 20.3	(11.2) (11.2) 18.7 18.7	(11.3) (11.3) 17.9 17.9	(11.5) (11.5) (11.5) 17.1 17.1
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Municipals	(22.7) (22.7) (6.7) (6.7) (6.7) (6.7) (31.0) (31.0)	(20.7) (20.7) (20.7) (3.7) (3.7) curve specifie	(18.2) (18.2) (0.3) 0.3 0.3 ed above)	(16.1) (16.1) 3.7 3.7 3.7 (34.9) (34.9)	(14.4) (14.4) 6.6 6.6 6.6 (35.8)	(10.4) (10.4) 14.7 14.7 (37.7) (37.7)	(9.0) (9.0) 19.0 19.0 19.0	(9.0) (9.0) 21.7 21.7 21.7	(9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1)	(10.6) (10.6) 20.3 20.3 20.3	(11.2) (11.2) 18.7 18.7 (25.2) (25.2)	(11.3) (11.3) 17.9 17.9 (25.3) (25.3)	(11.5) (11.5) 17.1 17.1 (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Swaps / Discounting Curve	(22.7) (22.7) (6.7) (6.7) (6.7) (31.0) (31.0) (31.0)	(32.2) (32.2) (32.2) (32.2)	(18.2) (18.2) (0.3) 0.3 ed above) (33.7) (33.7) (33.7)	(34.9) (34.9) (34.9)	(14.4) (14.4) 6.6 6.6 6.6 (35.8) (35.8) (35.8)	(37.7) (37.7) (37.7)	(9.0) (9.0) 19.0 19.0 19.0 (37.5) (37.5) (37.5)	(9.0) (9.0) (9.0) 21.7 21.7 (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1)	(27.4) (27.4) (27.4)	(11.2) (11.2) 18.7 18.7 (25.2) (25.2) (25.2) (25.2)	(11.3) (11.3) 17.9 17.9 (25.3) (25.3) (25.3)	(11.5) (11.5) 17.1 17.1 (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Municipals	(22.7) (22.7) (6.7) (6.7) (6.7) (31.0) (31.0) (31.0)	(32.2) (32.2) (32.2) (32.2)	(18.2) (18.2) (0.3) 0.3 ed above) (33.7) (33.7) (33.7)	(34.9) (34.9) (34.9)	(14.4) (14.4) 6.6 6.6 6.6 (35.8) (35.8) (35.8)	(37.7) (37.7) (37.7)	(9.0) (9.0) 19.0 19.0 19.0 (37.5) (37.5) (37.5)	(9.0) (9.0) (9.0) 21.7 21.7 (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1)	(27.4) (27.4) (27.4)	(11.2) (11.2) 18.7 18.7 (25.2) (25.2) (25.2) (25.2)	(11.3) (11.3) 17.9 17.9 (25.3) (25.3) (25.3)	(11.5) (11.5) 17.1 17.1 (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis 3m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Cother Basis Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other Other	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis 3m Basis 3m Basis 12m Basis 12m Basis Other Basis Other Basis Other Basis SEK Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other SEK Basis Risks (Do not include the swa OIS Basis	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7) (21.2)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Cother Basis Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other Other	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis 3m Basis 3m Basis 12m Basis 12m Basis Other Basis Other Basis Other Basis SEK Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other SEK Basis Risks (Do not include the swa OIS Basis	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MIV** Other NZD Basis Risks (Do not include the swa OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MIV** Other SEK Basis Risks (Do not include the swa OIS Basis	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the swa OIS Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Other Basis SEK Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other SEK Basis Risks (Do not include the swa OIS Basis 1m Basis 3m Basis 3m Basis 3m Basis	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)
NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MIV** Other NZD Basis Risks (Do not include the swa OIS Basis 3m Basis 3m Basis 12m Basis Other Basis Other Basis SEK Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MIV** Other OIS Basis Risks (Do not include the swa OIS Basis 1m Basis 1m Basis 3m Basis 1m Basis 3m Basis 1m Basis 3m Basis	(31.0) (31.0) (32.4)	(32.2) (32.2) (32.2) (29.9)	(18.2) (18.2) (0.3) 0.3 0.3 ed above) (33.7) (33.7) (33.7) (26.9)	(34.9) (34.9) (34.9) (24.3)	(14.4) (14.4) (6.6) 6.6 6.6 (35.8) (35.8) (35.8) (22.3)	(37.7) (37.7) (37.7) (17.6)	(37.5) (37.5) (37.5) (16.4)	(9.0) (9.0) (9.0) 21.7 21.7 21.7 (34.5) (34.5) (34.5) (34.5)	(9.8) (9.8) (9.8) 21.6 21.6 21.6 (31.1) (31.1) (31.1) (20.0)	(27.4) (27.4) (27.4) (27.4) (27.4)	(11.2) (11.2) (18.7) 18.7 18.7 (25.2) (25.2) (25.2) (25.2) (22.4)	(25.3) (25.3) (25.3) (25.3) (25.3)	(26.7) (26.7) (26.7) (26.7)

USD Directional Risks													
Governments	(63.8)	(65.5)	(67.5)	(69.0)	(70.1)	(71.2)	(69.1)	(61.7)	(54.3)	(46.2)	(38.5)	(34.6)	(30.8)
Agencies	(63.8)	(65.5)	(67.5)	(69.0)	(70.1)	(71.2)	(69.1)	(61.7)	(54.3)	(46.2)	(38.5)	(34.6)	(30.8)
Municipals	(63.8)	(65.5)	(67.5)	(69.0)	(70.1)	(71.2)	(69.1)	(61.7)	(54.3)	(46.2)	(38.5)	(34.6)	(30.8)
Swaps / Discounting Curve	(7.1)	(8.4)	(10.0)	(11.3)	(12.4)	(15.0)	(16.0)	(16.5)	(16.8)	(17.3)	(17.9)	(17.6)	(15.8)
Instruments shocked by MV**													
Other	(7.1)	(8.4)	(10.0)	(11.3)	(12.4)	(15.0)	(16.0)	(16.5)	(16.8)	(17.3)	(17.9)	(17.6)	(15.8)
USD Basis Risks (Do not include the swap,	/discounting	curve specifie	d above)										
Prime Basis	(11.9)	(11.8)	(11.2)	(11.4)	(11.6)	(8.3)	(5.2)	(4.2)	(1.2)	(0.8)	(0.8)	(0.8)	(0.8)
CP Basis	(13.7)	(13.5)	(12.9)	(13.0)	(13.3)	(9.7)	(8.6)	(5.6)	(2.9)	(4.0)	(4.1)	(4.2)	(4.1)
OIS Basis	(16.7)	(16.5)	(16.0)	(15.8)	(15.5)	(15.4)	(8.0)	(6.0)	(3.8)	(3.5)	(3.5)	(3.5)	(3.5)
1m Basis	(20.0)	(18.7)	(15.6)	(11.4)	(10.2)	(5.7)	(3.8)	(1.5)	(0.4)	0.6	0.6	2.1	2.6
3m Basis	(/	, , ,	, , , ,	, ,	, , ,	ν- /	(= -/	/	\ - /				
6m Basis	10.5	10.4	9.9	10.0	10.2	7.9	7.1	5.7	5.2	5.1	5.3	5.3	5.3
12m Basis	21.7	21.5	20.5	20.7	21.2	16.9	14.9	11.9	10.7	11.1	8.4	7.5	5.5
Other Basis	21.7	21.5	20.3	20.7	21.2	10.5	14.5	11.5	10.7	11.1	0.4	7.5	5.5
						10.5							
Absolute increase in Muni SIFMA/Libor	23.0	23.0	20.0	20.0	19.2	19.5	20.1	21.3	21.2	20.1	15.1	12.1	8.5
Ratio (Pts)													
Other Advanced Economies Directional R	isks												
Governments	(63.8)	(65.5)	(67.5)	(69.0)	(70.1)	(71.2)	(69.1)	(61.7)	(54.3)	(46.2)	(38.5)	(34.6)	(30.8)
Agencies	(63.8)	(65.5)	(67.5)	(69.0)	(70.1)	(71.2)	(69.1)	(61.7)	(54.3)	(46.2)	(38.5)	(34.6)	(30.8)
Municipals	(63.8)	(65.5)	(67.5)	(69.0)	(70.1)	(71.2)	(69.1)	(61.7)	(54.3)	(46.2)	(38.5)	(34.6)	(30.8)
Swaps / Discounting Curve	(7.1)	(8.4)	(10.0)	(11.3)	(12.4)	(15.0)	(16.0)	(16.5)	(16.8)	(17.3)	(17.9)	(17.6)	(15.8)
Instruments shocked by MV**	,	(-)	()	(-)	, ,	()	()	()	(2 2)	(-)	(-)	(-)	(/
Other	(7.1)	(8.4)	(10.0)	(11.3)	(12.4)	(15.0)	(16.0)	(16.5)	(16.8)	(17.3)	(17.9)	(17.6)	(15.8)
	. ,	, , ,	(/	7		(/	, , , , ,	1 (7					(/
Directional Risks: Emerging Europe													
BGN	47.8	47.9	48.2	48.5	48.8	49.7	50.1	49.4	46.9	41.6	32.9	26.3	18.7
CZK	(23.9)	(24.9)	(26.0)	(26.9)	(27.6)	(28.8)	(28.4)	(25.6)	(22.4)	(18.5)	(14.7)	(12.6)	(10.6)
HRK	47.8	47.9	48.2	48.5	48.8	49.7	50.1	49.4	46.9	41.6	32.9	26.3	18.7
HUF	47.8	47.9	48.2	48.5	48.8	49.7	50.1	49.4	46.9	41.6	32.9	26.3	18.7
PLN	(24.5)	(20.5)	(14.9)	(9.7)	(4.8)	12.0	24.8	41.8	51.3	57.4	58.3	55.7	49.9
RON	47.8	47.9	48.2	48.5	48.8	49.7	50.1	49.4	46.9	41.6	32.9	26.3	18.7
RUB	200.0	198.9	197.2	48.5 195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
Other Emerging Europe	(23.9)	(24.9)	(26.0)	(26.9)	(27.6)	(28.8)	(28.4)	(25.6)	(22.4)	(18.5)	(14.7)	(12.6)	(10.6)
Other Emerging Europe	(23.9)	(24.9)	(20.0)	(20.9)	(27.6)	(20.0)	(20.4)	(23.0)	(22.4)	(16.5)	(14.7)	(12.6)	(10.6)
Directional Risks: Latin America & Caribbo													
ARS	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
BRL	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
CLP	12.0	10.4	8.5	7.1	6.0	4.2	3.8	3.5	2.8	1.4	(0.3)	(1.2)	(2.2)
COP	7.0	10.0	13.0	15.0	17.8	68.5	79.1	72.7	67.2	68.9	81.2	93.2	109.3
MXN	18.0	21.5	25.5	27.0	31.5	36.7	39.5	42.5	47.5	50.1	54.5	65.0	70.5
PEN	18.0	21.5	25.5	27.0	31.5	36.7	39.5	42.5	47.5	50.1	54.5	65.0	70.5
VEF	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
Other Latam & Caribbean	12.0	10.4	8.5	7.1	6.0	4.2	3.8	3.5	2.8	1.4	(0.3)	(1.2)	(2.2)

Directional Risks: Asia Ex-Japan													
CNY	50.3	54.0	59.6	64.9	70.2	90.2	108.2	138.8	163.0	189.8	217.8	234.1	251.0
HKD	12.6	8.0	3.3	0.5	(1.1)	(2.3)	(2.0)	(2.9)	(4.6)	(6.4)	(8.1)	(8.9)	(9.7)
IDR	38.0	42.7	48.6	53.2	56.8	64.4	66.3	65.9	66.3	69.4	76.0	81.0	86.7
INR	38.0	42.7	48.6	53.2	56.8	64.4	66.3	65.9	66.3	69.4	76.0	81.0	86.7
KRW	11.1	13.1	15.9	18.4	20.7	28.0	33.1	39.1	41.9	43.7	44.4	44.4	44.4
MYR	55.3	59.4	65.6	71.4	77.2	99.2	119.0	152.7	179.3	208.8	239.6	257.5	276.1
PHP	50.3	54.0	59.6	64.9	70.2	90.2	108.2	138.8	163.0	189.8	217.8	234.1	251.0
SGD	(8.4)	(7.9)	(7.2)	(6.6)	(6.1)	(4.4)	(3.2)	(2.0)	(1.6)	(1.7)	(2.2)	(2.7)	(3.4)
ТНВ	38.0	42.7	48.6	53.2	56.8	64.4	66.3	65.9	66.3	69.4	76.0	81.0	86.7
TWD	11.1	13.1	15.9	18.4	20.7	28.0	33.1	39.1	41.9	43.7	44.4	44.4	44.4
Other Asia Ex-Japan	55.3	59.4	65.6	71.4	77.2	99.2	119.0	152.7	179.3	208.8	239.6	257.5	276.1
Directional Risks: Middle East/North Afric	a												
ILS	(10.4)	(9.2)	(7.7)	(6.4)	(5.3)	(2.6)	(1.9)	(3.4)	(6.4)	(11.2)	(17.2)	(20.9)	(24.9)
TRY	11.7	10.8	11.0	11.5	11.5	12.5	13.7	21.5	24.9	27.4	29.4	30.3	31.3
Other Middle East/Africa	11.7	10.8	11.0	11.5	11.5	12.5	13.7	21.5	24.9	27.4	29.4	30.3	31.3
Directional Risks: Sub-Saharan Africa													
ZAR	(9.1)	(6.1)	(2.3)	0.8	3.2	8.5	10.2	10.3	10.0	10.1	10.8	11.3	11.8
Other Sub-Saharan Africa	(9.1)	(6.1)	(2.3)	0.8	3.2	8.5	10.2	10.3	10.0	10.1	10.8	11.3	11.8

Relative Normal Interest Rate Shocks

Rates Vega
Relative Normal Interest Rate Shocks (%)

								D4 0 T1	JRITY						
		1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	25Y	30Y
	AUD	2.00	5.01	0.00	3.0.			9.	J .	, ,	101	25.	20.	23.	50.
	1M	33.5%	33.5%	32.9%	32.9%	32.9%	22.1%	20.4%	18.1%	16.8%	14.5%	13.9%	14.1%	14.0%	14.0%
	3M	31.6%	31.2%	31.2%	31.2%	30.7%	21.2%	19.1%	17.2%	16.0%	13.8%	13.4%	13.8%	13.4%	13.5%
	6M	25.5%	25.2%	25.2%	24.8%	24.8%	19.4%	17.9%	16.1%	15.1%	13.0%	12.6%	13.1%	12.8%	12.8%
	9M	23.0%	23.0%	22.7%	22.7%	22.4%	18.4%	17.1%	15.3%	14.4%	12.2%	12.2%	12.7%	12.3%	12.3%
	1Y	20.7%	20.7%	20.5%	20.3%	20.0%	18.0%	16.4%	14.5%	13.6%	11.3%	11.6%	12.1%	11.8%	11.7%
EXPIRY	2Y	16.9%	16.8%	16.6%	16.4%	16.2%	14.5%	12.9%	11.3%	10.5%	8.7%	9.3%	9.8%	9.5%	9.3%
=	3Y	14.6%	14.4%	14.3%	14.1%	13.9%	12.1%	10.9%	9.4%	8.7%	7.3%	7.7%	8.2%	7.9%	7.9%
Ξ	5Y	11.6%	11.5%	11.3%	11.0%	10.9%	9.9%	9.0%	7.5%	6.6%	5.9%	5.9%	6.2%	6.3%	6.3%
	7Y	9.6%	9.5%	9.3%	9.2%	9.0%	8.2%	7.7%	6.5%	5.7%	5.1%	5.1%	5.4%	5.5%	5.6%
	10Y	7.7%	7.7%	7.5%	7.5%	7.4%	7.0%	6.6%	5.8%	4.7%	4.4%	4.6%	5.0%	4.9%	5.2%
	15Y	5.5%	5.3%	5.3%	5.2%	5.2%	4.9%	4.6%	4.0%	3.6%	3.5%	4.0%	4.3%	4.3%	4.5%
	20Y	4.4%	4.4%	4.2%	4.2%	4.2%	4.1%	4.0%	3.7%	3.7%	3.6%	3.5%	4.1%	4.2%	4.3%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.6%	3.4%	3.6%	3.8%	3.4%	3.5%	3.8%	4.1%	4.4%
	EUR 1M	32.7%	31.6%	30.4%	30.4%	29.3%	26.8%	26 5%	36.0%	25.6%	26.2%	27.9%	28.4%	27.8%	31.4%
	3M	32.7% 28.4%	27.5%	30.4% 26.5%	30.4% 25.5%	29.3%	26.8%	26.5% 22.0%	26.0% 22.0%	25.6%	26.3% 22.9%	27.9%	28.4%	27.8%	31.4% 26.7%
	6M	28.4%	27.5%	26.5%	25.5%	25.5%	19.7%	22.0% 18.9%	18.5%	18.8%	19.7%	24.3%	24.8%	24.1%	26.7%
	9M	22.9%	22.3%	23.3%	19.9%	19.3%	16.5%	15.6%	15.7%	16.6%	17.3%	20.0%	20.3%	19.9%	20.8%
	1Y	20.0%	19.0%	18.5%	17.5%	16.5%	13.8%	13.3%	13.6%	14.7%	15.6%	18.6%	19.0%	18.4%	18.9%
>	2Y	13.0%	12.7%	12.1%	11.5%	10.9%	9.6%	9.5%	10.2%	11.2%	11.7%	13.9%	14.4%	13.9%	13.6%
EXPIRY	3Y	10.2%	10.0%	9.8%	9.4%	9.2%	8.6%	8.6%	9.1%	10.0%	10.4%	11.5%	11.8%	11.6%	11.7%
 	5Y	8.5%	8.3%	8.3%	8.2%	8.2%	8.2%	8.3%	8.7%	9.1%	9.4%	9.6%	9.8%	9.9%	10.4%
	7Y	8.0%	8.0%	8.0%	8.0%	8.0%	8.1%	8.2%	8.4%	8.6%	8.9%	9.2%	9.1%	9.3%	9.8%
	10Y	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%	7.9%	8.1%	8.3%	8.4%	8.7%	8.6%	8.9%	9.0%
	15Y	7.6%	7.6%	7.6%	7.6%	7.6%	7.5%	7.7%	7.9%	8.1%	8.1%	8.3%	8.0%	8.1%	8.2%
	20Y	7.5%	7.7%	7.7%	7.7%	7.7%	7.6%	7.5%	7.9%	8.0%	8.1%	8.3%	8.1%	8.1%	8.2%
	30Y	8.1%	8.1%	8.1%	8.1%	8.1%	7.9%	7.8%	7.7%	7.9%	8.1%	8.6%	8.4%	8.8%	8.9%
	GBP		1	1		1	1	1	1			1	1		
	1M	26.4%	26.4%	26.0%	26.0%	25.6%	22.1%	21.1%	20.8%	19.6%	16.5%	15.8%	16.2%	15.9%	15.8%
	3M	23.6%	23.6%	23.6%	23.3%	23.3%	21.1%	19.6%	17.9%	16.9%	14.6%	14.1%	14.5%	14.2%	14.3%
	6M	23.1%	23.1%	22.8%	22.8%	22.5%	19.4%	18.1%	16.7%	15.8%	13.6%	13.3%	13.7%	13.3%	13.4%
	9M	21.8%	21.5%	21.5%	21.2%	21.2%	18.8%	17.1%	15.4%	14.4%	12.2%	12.2%	12.8%	12.5%	12.3%
>	1Y 2Y	20.8%	20.8% 16.2%	20.5% 16.0%	20.5% 15.8%	20.3% 15.6%	17.9%	15.9% 12.7%	14.4% 10.9%	13.3% 10.2%	11.2% 8.5%	11.3% 8.8%	11.8% 9.4%	11.5% 9.1%	11.3% 8.9%
EXPIRY	3Y	16.4% 13.9%	13.8%	13.6%	13.4%	13.1%	14.2% 12.0%	10.9%	9.1%	8.3%	7.1%	7.2%	7.8%	7.6%	7.6%
×	5Y	11.1%	11.0%	10.9%	10.7%	10.5%	9.5%	8.6%	7.1%	6.4%	5.5%	5.5%	5.9%	5.9%	6.0%
ш	7Y	9.2%	9.1%	9.0%	8.8%	8.7%	8.0%	7.3%	6.3%	5.3%	4.8%	4.7%	5.1%	5.1%	5.3%
	10Y	7.1%	7.1%	7.0%	7.0%	6.8%	6.4%	6.1%	5.3%	4.4%	4.1%	4.7%	4.5%	4.7%	4.8%
	15Y	5.1%	5.1%	4.9%	4.9%	4.8%	4.5%	4.3%	3.8%	3.4%	3.3%	3.6%	4.1%	4.1%	4.2%
	20Y	4.0%	4.0%	4.0%	4.0%	3.9%	3.8%	3.7%	3.6%	3.5%	3.2%	3.4%	3.9%	3.9%	4.0%
	30Y	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.5%	3.3%	3.5%	3.7%	3.9%	4.1%
		•													
	JPY														1
	1M	21.2%	21.2%	21.2%	21.2%	21.2%	18.7%	16.8%	15.4%	16.0%	14.2%	11.7%	13.1%	15.2%	17.4%
	3M	17.6%	17.6%	17.6%	16.4%	16.4%	16.1%	13.5%	12.5%	12.9%	11.4%	10.0%	10.8%	13.1%	15.0%
	6M	16.1%	16.1%	16.1%	16.1%	16.1%	14.6%	13.4%	11.5%	12.0%	10.3%	9.1%	10.0%	11.8%	13.5%
	9M 1Y	15.4% 15.1%	15.4% 15.1%	15.4% 14.2%	15.4% 14.2%	15.4% 14.2%	14.0% 12.9%	12.1% 11.2%	11.2% 10.4%	10.4% 9.7%	8.8% 8.2%	8.5% 8.0%	9.3% 8.9%	10.5% 10.1%	12.1% 11.3%
>	2Y	12.9%	12.9%	12.9%	12.9%	12.2%	11.1%	9.8%	8.0%	7.7%	6.1%	6.8%	7.5%	8.2%	9.2%
EXPIRY	3Y	11.5%	10.9%	10.9%	10.9%	10.9%	9.4%	8.4%	6.9%	6.3%	5.1%	5.9%	6.7%	7.0%	8.0%
×	5Y	9.1%	9.1%	8.6%	8.6%	8.6%	8.0%	6.7%	5.7%	4.9%	4.6%	5.0%	5.3%	5.9%	6.6%
	7Y	7.4%	7.4%	7.4%	7.0%	7.0%	6.5%	5.9%	5.2%	4.6%	3.9%	4.4%	4.7%	5.0%	5.6%
	10Y	6.5%	6.1%	6.1%	6.1%	6.1%	5.6%	5.2%	4.7%	3.9%	3.6%	4.1%	4.4%	4.7%	5.0%
	15Y	4.9%	4.9%	4.9%	4.6%	4.6%	4.2%	4.2%	3.5%	3.1%	3.0%	3.4%	3.7%	4.0%	4.2%
	20Y	3.8%	3.8%	3.8%	3.8%	3.8%	3.5%	3.5%	3.5%	3.4%	3.0%	3.1%	3.5%	3.7%	3.9%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.7%	3.6%	3.5%	3.6%	3.9%	4.2%	4.4%

Relative Normal Interest Rate Shocks (Continued)

	USD														
	1M	22.8%	22.8%	22.3%	22.3%	22.3%	19.3%	18.2%	19.1%	17.4%	14.6%	13.7%	13.8%	12.9%	12.4%
	3M	21.1%	21.1%	21.1%	20.7%	20.7%	19.4%	18.0%	17.9%	16.7%	14.0%	13.3%	13.4%	12.9%	12.6%
	6M	19.1%	19.1%	18.9%	18.9%	18.6%	18.1%	16.5%	16.4%	15.3%	13.0%	12.6%	12.8%	12.6%	12.3%
	9M	18.7%	18.7%	18.4%	18.2%	18.2%	17.4%	15.9%	15.0%	14.2%	12.0%	11.8%	12.2%	11.9%	11.8%
	1Y	17.9%	17.9%	17.6%	17.6%	17.4%	17.1%	15.5%	14.1%	13.2%	11.2%	11.3%	11.7%	11.4%	11.3%
>	2Y	16.1%	16.1%	15.9%	15.7%	15.5%	14.3%	12.7%	11.3%	10.6%	8.8%	9.2%	9.7%	9.5%	9.2%
EXPIRY	3Y	14.1%	14.0%	13.8%	13.7%	13.4%	14.3%	11.1%	9.5%	8.8%	7.4%	7.6%	8.2%	8.0%	8.0%
₹ .	5Y		11.3%	11.1%	11.0%	10.7%	9.9%	9.0%	7.5%	6.7%	5.9%		6.4%		6.5%
ш		11.5% 9.5%	9.5%	9.3%	9.2%	9.0%		7.7%	6.6%			5.9% 5.0%	5.5%	6.3% 5.5%	
	7Y						8.3%			5.7%	5.2%				5.7%
	10Y	7.5%	7.5%	7.4%	7.3%	7.3%	6.8%	6.4%	5.5%	4.7%	4.4%	4.5%	5.0%	5.0%	5.1%
	15Y	5.4%	5.2%	5.2%	5.2%	5.1%	4.8%	4.5%	4.0%	3.6%	3.5%	4.0%	4.3%	4.5%	4.7%
	20Y	4.1%	4.1%	4.1%	4.1%	4.1%	4.0%	3.9%	3.7%	3.8%	3.5%	3.7%	4.1%	4.3%	4.3%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.7%	3.7%	3.5%	3.6%	4.0%	4.1%	4.3%
	US MBS Vega		<u> </u>												
	Other Advan			22.0%	22.0%	32.9%	22.10/	20.4%	10 10/	16.8%	14.5%	13.9%	14.19/	14.0%	14.09/
	1M	33.5%	33.5%	32.9%	32.9%		22.1%		18.1%				14.1%		14.0%
	3M	31.6%	31.2%	31.2%	31.2%	30.7%	21.2%	19.1%	17.2%	16.0%	13.8%	13.4%	13.8%	13.4%	13.5%
	6M	25.5%	25.2%	25.2%	24.8%	24.8%	19.4%	17.9%	16.1%	15.1%	13.0%	12.6%	13.1%	12.8%	12.8%
	9M	23.0%	23.0%	22.7%	22.7%	22.4%	18.4%	17.1%	15.3%	14.4%	12.2%	12.2%	12.7%	12.3%	12.3%
_	1Y	20.7%	20.7%	20.5%	20.3%	20.0%	18.0%	16.4%	14.5%	13.6%	11.3%	11.6%	12.1%	11.8%	11.7%
~	2Y	16.9%	16.8%	16.6%	16.4%	16.2%	14.5%	12.9%	11.3%	10.5%	8.7%	9.3%	9.8%	9.5%	9.3%
EXPIRY	3Y	14.6%	14.4%	14.3%	14.1%	13.9%	12.1%	10.9%	9.4%	8.7%	7.3%	7.7%	8.2%	7.9%	7.9%
<u> </u>	5Y	11.6%	11.5%	11.3%	11.0%	10.9%	9.9%	9.0%	7.5%	6.6%	5.9%	5.9%	6.2%	6.3%	6.3%
	7Y	9.6%	9.5%	9.3%	9.2%	9.0%	8.2%	7.7%	6.5%	5.7%	5.1%	5.1%	5.4%	5.5%	5.6%
	10Y	7.7%	7.7%	7.5%	7.5%	7.4%	7.0%	6.6%	5.8%	4.7%	4.4%	4.6%	5.0%	4.9%	5.2%
	15Y	5.5%	5.3%	5.3%	5.2%	5.2%	4.9%	4.6%	4.0%	3.6%	3.5%	4.0%	4.3%	4.3%	4.5%
	20Y	4.4%	4.4%	4.2%	4.2%	4.2%	4.1%	4.0%	3.7%	3.7%	3.6%	3.5%	4.1%	4.2%	4.3%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.6%	3.4%	3.6%	3.8%	3.4%	3.5%	3.8%	4.1%	4.4%
	T-4-1 F	.													
	Total Emergi 1M		13.9%	13.9%	13.9%	13.9%	15.0%	14.4%	13.4%	12.7%	11.1%	10.5%	10.8%	10.5%	10.4%
	3M	14.3% 14.7%	13.9%	13.9%	14.3%	14.3%	14.9%	13.9%	13.4%	12.7%	10.7%	10.5%	10.8%	10.5%	10.4%
	6M	15.0%	15.0%	14.7%	14.7%	14.3%	14.7%	13.5%	12.9%	11.7%	10.1%	9.6%	10.6%	9.8%	9.6%
	9M	14.9%	14.9%	14.6%	14.7%	14.7%	14.7%	13.5%	11.8%	11.1%	9.3%	9.8%	9.6%	9.8%	9.6%
	1Y						13.7%				8.8%				8.7%
>	2Y	14.6%	14.6%	14.6%	14.3%	14.3%		12.4%	11.1% 9.3%	10.5%		8.8%	9.4%	8.8%	
EXPIRY		12.5%	12.5%	12.3%	12.0%	12.0%	11.6%	10.6%	7.9%	8.5%	7.1%	7.4%	7.9%	7.4%	7.3%
₹ .	3Y 5Y	11.3% 9.7%	11.1% 9.5%	11.1% 9.5%	10.9% 9.3%	10.6% 9.1%	10.3% 8.8%	9.2% 7.8%	6.4%	7.2% 5.5%	6.0% 4.8%	6.3% 4.8%	6.7% 5.1%	6.3% 5.0%	6.2% 5.2%
ш															
	7Y 10Y	7.7% 5.9%	7.7% 5.9%	7.5% 5.7%	7.5% 5.7%	7.3% 5.7%	7.1% 5.5%	6.7% 5.3%	5.5% 4.5%	4.7% 3.9%	4.2% 3.6%	4.1% 3.8%	4.5% 4.0%	4.5% 3.9%	4.6% 4.1%
	15Y	4.5%	4.5%	4.5%	4.3%	4.3%		4.0%	3.5%		3.0%	3.8%	3.6%		
	20Y	3.3%	3.3%	3.1%	3.1%	4.3% 3.1%	4.2% 3.2%	3.1%	3.5%	3.0% 2.8%	2.7%	2.9%	3.5%	3.6%	3.7% 3.5%
	30Y	2.9%	2.9%	2.9%	2.9%	2.9%	3.1%	3.1%	3.2%	3.2%	3.0%	3.1%	3.5%	3.6%	3.7%
	301	2.9%	2.9%	2.9%	2.9%	2.9%	5.1%	5.176	3.2%	3.276	3.0%	5.1%	3.5%	3.0%	3.770
	Total Latam	& Caribbean													
	1M	20.6%	20.5%	20.5%	20.4%	20.3%	17.8%	15.9%	15.1%	14.0%	11.9%	11.3%	11.5%	11.3%	11.4%
	3M	18.3%	18.3%	18.2%	18.1%	18.0%	15.8%	15.3%	12.9%	12.8%	12.2%	11.8%	12.2%	12.0%	12.0%
	6M	17.1%	17.2%	17.1%	17.0%	16.7%	16.2%	14.6%	12.8%	11.8%	9.8%	9.6%	10.0%	9.7%	9.7%
	9M	16.7%	16.7%	16.7%	16.5%	16.3%	15.4%	13.9%	12.1%	11.4%	9.5%	9.6%	9.9%	9.7%	9.5%
	1Y	16.0%	16.0%	15.9%	15.8%	15.5%	14.5%	13.1%	11.4%	10.7%	9.1%	9.2%	9.6%	9.4%	9.2%
~	2Y	13.9%	13.8%	13.7%	13.6%	13.6%	12.2%	11.2%	9.7%	9.1%	7.5%	7.8%	8.3%	8.0%	7.8%
	3Y	12.3%	12.2%	12.1%	12.0%	11.9%	10.8%	9.8%	8.4%	7.8%	6.6%	6.8%	7.3%	7.1%	7.0%
EXPIR	5Y	10.6%	10.6%	10.4%	10.2%	10.1%	9.2%	8.3%	7.0%	6.1%	5.4%	5.4%	5.8%	5.7%	5.9%
	7Y	9.1%	9.0%	8.9%	8.7%	8.6%	8.0%	7.4%	6.1%	5.3%	4.7%	4.6%	5.0%	5.0%	5.2%
	10Y	7.2%	7.2%	7.1%	7.0%	6.8%	6.5%	6.2%	5.3%	4.5%	4.0%	4.2%	4.5%	4.6%	4.8%
	15Y	5.1%	5.0%	4.9%	4.8%	4.8%	4.5%	4.3%	3.7%	3.3%	3.3%	3.6%	4.0%	4.0%	4.2%
	20Y	3.9%	3.9%	3.9%	3.8%	3.8%	3.8%	3.7%	3.5%	3.4%	3.2%	3.3%	3.8%	3.8%	4.0%
		3.370	5.570	5.570	5.570	5.570	5.570	5.770	3.370	J. 770	J. 2.70	3.370	5.570	5.570	

3.5%

Relative Normal Interest Rate Shocks (Continued)

30Y

3.6%

3.6%

3.6%

3.6%

3.6%

3.5%

3.6%

3.7%

3.7%

	Total Asia Ex-	-Japan													
	1M	46.2%	46.2%	46.4%	46.7%	47.3%	42.0%	40.4%	38.9%	37.7%	34.0%	33.9%	35.5%	35.3%	35.7%
	3M	45.8%	45.8%	45.8%	46.1%	46.4%	42.0%	40.4%	36.4%	35.1%	30.0%	30.2%	31.8%	31.3%	31.4%
	6M	42.4%	42.4%	42.4%	42.4%	42.4%	39.2%	35.5%	33.6%	31.8%	27.4%	28.6%	29.9%	29.0%	28.3%
	9M	39.8%	39.8%	39.8%	39.6%	39.6%	37.1%	34.0%	31.0%	29.7%	25.0%	26.4%	27.9%	26.7%	25.4%
	1Y	37.8%	37.6%	37.6%	37.3%	37.1%	33.5%	30.9%	28.4%	26.9%	22.4%	24.4%	26.1%	25.0%	23.7%
۲	2Y	30.0%	29.8%	29.8%	29.6%	29.6%	26.9%	24.9%	22.6%	21.5%	18.1%	19.2%	20.6%	19.5%	18.6%
<u>-</u>	3Y	27.8%	27.6%	27.3%	27.1%	26.9%	24.5%	22.3%	19.5%	18.0%	15.7%	15.6%	16.7%	16.4%	16.4%
EXPIRY	5Y	23.8%	23.6%	23.3%	22.9%	22.5%	21.3%	19.8%	16.1%	14.5%	13.0%	12.4%	13.1%	12.9%	13.4%
	7Y	21.2%	21.0%	20.6%	20.2%	19.8%	18.5%	17.5%	14.6%	12.7%	11.4%	10.7%	11.5%	11.3%	11.7%
	10Y	16.5%	16.3%	16.1%	15.7%	15.5%	16.1%	14.1%	12.8%	10.8%	9.8%	9.6%	10.5%	10.2%	10.6%
	15Y	12.2%	11.9%	11.9%	11.7%	11.5%	12.0%	10.6%	9.5%	8.7%	8.2%	8.1%	9.2%	9.0%	9.3%
	20Y	9.6%	9.6%	9.6%	9.3%	9.3%	10.0%	9.1%	8.5%	8.3%	7.3%	7.1%	8.4%	8.3%	8.5%
	30Y	8.2%	7.9%	7.9%	7.9%	7.6%	8.2%	7.4%	7.5%	7.6%	6.8%	6.9%	7.6%	7.8%	8.0%
	Total ME/N.	Africa													
	1M	16.9%	16.9%	16.9%	16.9%	16.9%	14.3%	13.5%	13.0%	13.1%	11.9%	11.1%	11.6%	11.3%	11.4%
	3M	16.1%	16.1%	16.1%	16.1%	16.1%	13.4%	12.8%	12.6%	12.5%	11.4%	10.8%	11.3%	11.1%	11.0%
	6M	15.2%	15.2%	15.2%	15.2%	15.2%	13.5%	12.2%	12.1%	12.0%	10.7%	10.3%	10.7%	10.5%	10.4%
	9M	14.3%	14.3%	14.3%	13.0%	13.0%	12.6%	11.6%	11.4%	11.2%	9.9%	9.8%	10.3%	10.1%	10.0%
	1Y	13.6%	13.6%	12.6%	12.6%	12.6%	11.9%	11.2%	11.1%	10.8%	9.3%	9.4%	9.9%	9.6%	9.5%
EXPIRY	2Y	11.2%	11.2%	11.2%	11.2%	10.7%	10.3%	10.1%	9.2%	8.9%	7.6%	7.8%	8.4%	8.1%	7.8%
Ы	3Y	10.7%	10.4%	10.4%	10.1%	10.1%	9.9%	9.3%	8.1%	7.7%	6.4%	6.6%	7.2%	7.0%	6.9%
ă	5Y	10.3%	10.1%	10.1%	9.9%	9.8%	9.0%	8.2%	6.9%	6.0%	5.2%	5.2%	5.6%	5.6%	5.7%
	7Y	9.0%	8.9%	8.8%	8.6%	8.5%	7.9%	7.3%	6.1%	5.1%	4.6%	4.6%	4.9%	4.9%	5.1%
	10Y	6.9%	6.9%	6.8%	6.7%	6.7%	6.3%	5.7%	4.9%	4.2%	3.9%	4.1%	4.4%	4.5%	4.7%
	15Y	5.1%	4.9%	4.9%	4.8%	4.7%	4.6%	4.2%	3.7%	3.3%	3.3%	3.7%	4.0%	4.1%	4.1%
	20Y	3.9%	3.9%	3.9%	3.9%	3.7%	3.8%	3.6%	3.5%	3.3%	3.2%	3.3%	3.7%	3.8%	4.0%
	30Y	3.4%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.5%	3.6%	3.4%	3.5%	3.7%	4.1%	4.2%
	Total Sub-Sal	haran Africa	1												
	1M	14.7%	14.7%	14.6%	14.5%	14.4%	11.9%	10.7%	11.3%	10.9%	9.2%	8.5%	8.8%	8.6%	8.6%
	3M	9.6%	9.5%	9.4%	9.4%	9.3%	9.2%	8.4%	9.2%	9.2%	7.9%	8.1%	8.4%	8.2%	8.1%
	6M	10.0%	10.0%	9.9%	9.8%	9.8%	10.1%	9.2%	9.9%	9.5%	8.0%	8.3%	8.6%	8.4%	8.3%
	9M	10.9%	10.9%	10.8%	10.7%	10.6%	10.9%	9.8%	10.0%	9.6%	8.0%	8.4%	8.7%	8.5%	8.4%
	1Y	11.5%	11.4%	11.4%	11.2%	11.2%	11.4%	10.3%	9.9%	9.5%	7.8%	8.3%	8.7%	8.4%	8.2%
EXPIRY	2Y	11.6%	11.5%	11.4%	11.3%	11.1%	10.2%	9.4%	8.5%	8.0%	6.5%	7.1%	7.6%	7.3%	7.2%
9	3Y	10.8%	10.7%	10.6%	10.4%	10.2%	9.4%	8.6%	7.5%	6.9%	5.8%	6.3%	6.8%	6.6%	6.4%
ũ	5Y	9.8%	9.8%	9.6%	9.4%	9.3%	8.5%	7.7%	6.4%	5.6%	4.9%	5.1%	5.6%	5.5%	5.6%
	7Y	8.6%	8.5%	8.4%	8.2%	8.1%	7.5%	6.9%	5.9%	5.0%	4.5%	4.6%	4.9%	5.0%	5.2%
	10Y	7.1%	7.1%	7.0%	6.9%	6.8%	6.4%	6.0%	5.2%	4.4%	4.1%	4.3%	4.7%	4.8%	5.0%
	15Y	5.4%	5.3%	5.3%	5.2%	5.2%	4.6%	4.5%	3.8%	3.3%	3.4%	3.8%	4.2%	4.2%	4.4%
	20Y	4.2%	4.1%	4.1%	4.1%	4.0%	3.9%	3.8%	3.6%	3.5%	3.3%	3.5%	4.0%	4.0%	4.2%

4.2%

3.6%

3.6%

4.1%

4.3%

Absolute Normal Interest Rate Shocks

Rates Vega
Absolute Normal Interest Rate Shocks (bps)

		1M	3M	6M	9M	1Y	2Y	M A T L	5Y	7Y	10Y	15Y	20Y	25Y	30Y
	AUD	TIVI	SIVI	OIVI	SIVI	TI	21	31	31	71	101	151	201	251	301
	1M	5.9	5.9	5.8	5.8	5.8	6.8	7.5	7.9	8.1	7.4	7.2	7.3	7.2	7.1
	3M	7.2	7.1	7.1	7.1	7.0	7.6	8.0	8.1	8.1	7.4	7.2	7.4	7.2	7.1
	6M	8.0	7.9	7.9	7.8	7.8	7.9	8.1	8.0	7.9	7.2	7.0	7.2	7.0	6.9
	9M	8.5	8.5	8.4	8.4	8.3	8.3	8.3	7.9	7.8	6.9	6.9	7.1	6.8	6.6
	1Y	9.2	9.2	9.1	9.0	8.9	8.9	8.6	7.8	7.6	6.7	6.7	6.9	6.6	6.3
≥	2Y	9.8	9.7	9.6	9.5	9.4	8.8	7.9	6.8	6.4	5.4	5.6	5.7	5.4	4.9
EXPIRY	3Y	9.0	8.9	8.8	8.7	8.6	7.7	6.9	5.8	5.4	4.6	4.6	4.8	4.4	4.1
$\overline{\mathbf{x}}$	5Y	7.7	7.6	7.5	7.3	7.2	6.5	5.9	4.7	4.2	3.7	3.5	3.5	3.3	3.0
_	7Y	6.4	6.3	6.2	6.1	6.0	5.4	5.0	4.1	3.5	3.1	2.9	2.9	2.7	2.5
	10Y	5.1	5.1	5.0	5.0	4.9	4.6	4.3	3.6	2.9	2.6	2.5	2.5	2.2	2.1
	15Y	3.5	3.4	3.4	3.3	3.3	3.1	2.9	2.4	2.1	2.0	2.0	1.9	1.7	1.6
	20Y	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.2	2.1	1.9	1.5	1.5	1.4	1.3
	30Y	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.0	0.9	0.9	0.9	0.9
	•	•	•	•	•		•			•		•	•		•
	EUR														
	1M	2.9	2.8	2.7	2.7	2.6	3.5	4.7	6.9	7.9	8.5	9.6	10.0	10.0	11.5
	3M	2.9	2.8	2.7	2.6	2.6	3.4	4.5	6.7	7.7	8.3	9.4	9.8	9.7	10.9
	6M	3.3	3.2	3.1	3.0	2.9	3.6	4.5	6.3	7.2	8.0	9.3	9.6	9.4	10.2
	9M	3.8	3.7	3.5	3.3	3.2	3.7	4.4	5.9	6.9	7.6	9.1	9.4	9.2	9.6
	1Y	4.0	3.8	3.7	3.5	3.3	3.7	4.3	5.5	6.5	7.3	8.9	9.2	8.9	9.1
EXPIRY	2Y	4.4	4.3	4.1	3.9	3.7	3.8	4.2	5.0	5.8	6.3	7.5	7.8	7.5	7.3
ᆵ	3Y	4.8	4.7	4.6	4.4	4.3	4.3	4.5	5.1	5.7	6.1	6.6	6.8	6.6	6.6
<u> </u>	5Y	5.2	5.1	5.1	5.0	5.0	5.1	5.2	5.5	5.8	6.0	5.9	5.9	5.8	6.0
	7Y	5.3	5.3	5.3	5.3	5.3	5.4	5.5	5.6	5.7	5.9	5.7	5.5	5.4	5.6
	10Y	5.2	5.2	5.2	5.2	5.2	5.3	5.4	5.5	5.6	5.6	5.4	5.1	5.1	5.0
	15Y	4.9	4.9	4.9	4.9	4.9	4.9	5.0	5.1	5.2	5.1	4.8	4.3	4.2	4.1
	20Y	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.8	4.8	4.7	4.4	4.0	3.8	3.7
	30Y	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.1	4.1	4.0	3.9	3.5	3.5	3.4
1	GBP	6.7	6.7			6.5		0.6	0.3	0.3	0.0	7.6		7.5	7.4
	1M 3M	6.7 7.0	6.7 7.0	6.6 7.0	6.6	6.5	7.7 7.8	8.6	9.3 8.9	9.3 9.0	8.0 7.8	7.6 7.5	7.7 7.6	7.5 7.3	7.4 7.3
	6M	7.1	7.1	7.0	6.9 7.0	6.9 6.9	7.7	8.5 8.2	8.6	8.7	7.6	7.4	7.5	7.2	7.2
	9M	7.1	7.1	7.1	7.0	7.0	7.7	8.1	8.3	8.3	7.2	7.1	7.3	7.1	6.9
	1Y	7.5	7.5	7.4	7.4	7.3	7.9	7.9	8.1	8.0	6.9	6.9	7.1	6.8	6.6
>-	2Y	8.2	8.1	8.0	7.9	7.8	7.9	7.5	7.0	6.8	5.7	5.8	6.1	5.8	5.6
EXPIRY	3Y	8.5	8.4	8.3	8.2	8.0	7.7	7.2	6.3	5.8	4.9	4.9	5.2	5.0	4.9
×	5Y	8.2	8.1	8.0	7.9	7.7	7.0	6.3	5.2	4.6	3.9	3.8	4.0	3.9	3.9
_	7Y	7.2	7.1	7.0	6.9	6.8	6.1	5.5	4.6	3.8	3.4	3.2	3.4	3.3	3.4
	10Y	5.5	5.5	5.4	5.4	5.3	4.8	4.5	3.8	3.1	2.8	2.8	2.9	2.9	2.9
	15Y	3.7	3.7	3.6	3.6	3.5	3.2	3.0	2.5	2.2	2.1	2.2	2.4	2.3	2.3
	20Y	2.7	2.7	2.7	2.7	2.6	2.5	2.4	2.2	2.1	1.9	1.9	2.1	2.0	2.0
	30Y	2.1	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8
_															
	JPY														
	1M	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4	1.7	1.7	1.8	2.4	2.8	3.2
	3M	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.4	1.7	1.7	1.8	2.3	2.8	3.2
	6M	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.7	1.7	1.8	2.3	2.7	3.1
	9M	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.5	1.6	1.6	1.8	2.3	2.6	3.0
	1Y	1.7	1.7	1.6	1.6	1.6	1.5	1.4	1.5	1.6	1.6	1.8	2.3	2.6	2.9
PIRY	2Y	1.8	1.8	1.8	1.8	1.7	1.6	1.5	1.4	1.5	1.4	1.7	2.1	2.3	2.6
2	3Y	1.9	1.8	1.8	1.8	1.8	1.6	1.5	1.4	1.4	1.3	1.6	2.0	2.1	2.4
E	5Y	1.9	1.9	1.8	1.8	1.8	1.7	1.5	1.4	1.3	1.3	1.5	1.7	1.9	2.1
	7Y	1.8	1.8	1.8	1.7	1.7	1.6	1.5	1.4	1.3	1.2	1.4	1.6	1.7	1.9
	10Y	1.8	1.7	1.7	1.7	1.7	1.6	1.5	1.4	1.2	1.2	1.4	1.6	1.7	1.8
	15Y	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.2	1.1	1.1	1.3	1.5	1.6	1.7
	20Y	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.3	1.5	1.6	1.7
	30Y	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.7	1.8	1.9

Absolute Normal Interest Rate Shocks (Continued)

	USD														
	1M	5.4	5.4	5.3	5.3	5.3	6.8	7.6	9.1	8.9	8.0	7.5	7.6	7.3	7.2
	3M	6.0	6.0	6.0	5.9	5.9	7.6	8.3	9.2	9.0	7.9	7.5	7.6	7.5	7.5
	6M	6.8	6.8	6.7	6.7	6.6	8.3	8.8	9.2	8.9	7.8	7.5	7.6	7.5	7.4
	9M	7.5	7.5	7.4	7.3	7.3	8.7	8.8	9.0	8.8	7.5	7.2	7.3	7.2	7.4
	1Y	8.1	8.1	8.0	8.0	7.9	9.0	8.9	8.8	8.4	7.2	7.2	7.4	7.2	7.1
>	2Y	9.3	9.3	9.2	9.1	9.0	9.0	8.4	7.7	7.3	6.1	6.2	6.5	6.3	6.1
EXPIRY	3Y	9.5	9.4	9.3	9.2	9.0	8.6	7.8	6.8	6.3	5.3	5.3	5.6	5.4	5.4
~	5Y		9.4 8.7	9.3 8.5	8.4	8.2	7.5	6.8	5.7	5.0	4.4	4.2	4.4	4.3	4.4
ш	7Y	8.8 7.4	7.4	7.2	7.1	7.0	6.4	5.9	5.7		3.8	3.5	3.7	3.7	3.8
	10Y								4.1	4.3					
		5.7	5.7	5.6	5.5	5.5	5.1	4.8		3.4	3.1	3.0	3.2	3.2	3.3
	15Y	3.6	3.5	3.5	3.5	3.4	3.2	3.0	2.6	2.3	2.2	2.4	2.5	2.6	2.7
	20Y 30Y	2.5 1.9	2.5 1.9	2.5 1.9	2.5 1.9	2.5 1.9	2.4 1.9	2.3 1.9	2.2	2.2	2.0 1.9	2.0 1.8	2.2	2.3	2.3
	US MBS Vega Other Advan 1M		i es 5.9	5.8	5.8	5.8	6.8	7.5	7.9	8.1	7.4	7.2	7.3	7.2	7.1
	3M	7.2	7.1	7.1	7.1	7.0	7.6	8.0	8.1	8.1	7.4	7.2	7.4	7.2	7.1
	6M	8.0	7.9	7.9	7.8	7.8	7.9	8.1	8.0	7.9	7.2	7.0	7.2	7.0	6.9
	9M	8.5	8.5	8.4	8.4	8.3	8.3	8.3	7.9	7.8	6.9	6.9	7.1	6.8	6.6
	1Y	9.2	9.2	9.1	9.0	8.9	8.9	8.6	7.8	7.6	6.7	6.7	6.9	6.6	6.3
~	2Y	9.8	9.7	9.6	9.5	9.4	8.8	7.9	6.8	6.4	5.4	5.6	5.7	5.4	4.9
_	3Y	9.0	8.9	8.8	8.7	8.6	7.7	6.9	5.8	5.4	4.6	4.6	4.8	4.4	4.1
EXPIR	5Y	7.7	7.6	7.5	7.3	7.2	6.5	5.9	4.7	4.2	3.7	3.5	3.5	3.3	3.0
	7Y	6.4	6.3	6.2	6.1	6.0	5.4	5.0	4.1	3.5	3.1	2.9	2.9	2.7	2.5
	10Y	5.1	5.1	5.0	5.0	4.9	4.6	4.3	3.6	2.9	2.6	2.5	2.5	2.2	2.1
	15Y	3.5	3.4	3.4	3.3	3.3	3.1	2.9	2.4	2.1	2.0	2.0	1.9	1.7	1.6
	20Y	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.2	2.1	1.9	1.5	1.5	1.4	1.3
	30Y	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.0	0.9	0.9	0.9	0.9
	T-4-1 F					•			•						
	Total Emergi		2.7	2.7	2.7	2.7	1.0	F 2	I = 4	F 4	F 1	F 2	F 6	F 0	60
	1M 3M	3.8 4.2	3.7 4.2	3.7 4.2	3.7 4.1	3.7 4.1	4.9 5.1	5.2 5.2	5.4 5.3	5.4 5.3	5.1 5.0	5.2 5.1	5.8 5.7	5.9 5.8	6.0 5.9
							5.4					4.9		5.6	
	6M	4.9 5.2	4.9 5.2	4.8 5.1	4.8	4.8 5.0	5.5	5.3 5.3	5.2 5.1	5.2 5.0	4.8 4.5		5.5 5.3	5.3	5.6 5.3
	9M 1Y				5.1	5.2	5.5	5.2	4.9			4.8		5.1	
>	2Y	5.3 5.2	5.3 5.2	5.3 5.1	5.2 5.0	5.2	5.5	4.8	4.3	4.8 4.1	4.3 3.6	4.6 4.0	5.2 4.5	4.4	5.1 4.3
EXPIRY		5.2	4.9	4.9	4.8	4.7	4.8	4.8	3.8	3.6	3.1	3.5	3.9	3.8	3.7
- X	3Y														
ш	5Y	4.4	4.3	4.3	4.2	4.1	4.2	3.8	3.3	2.9	2.6	2.8	3.1	3.1	3.1
	7Y 10Y	3.8 3.1	3.8	3.7 3.0	3.7 3.0	3.6 3.0	3.7	3.6 2.9	3.0 2.5	2.6 2.3	2.4	2.5 2.4	2.8 2.6	2.8 2.4	2.7 2.4
	15Y	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.3	2.0	2.0	2.4	2.2	2.4	2.4
	20Y	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.3	1.9	1.8	1.7	1.8	1.7	1.7
	30Y	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.7	1.2
	Total Latam 8		•	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.2
	1M	23.1	23.0	23.0	22.9	22.8	22.2	21.0	20.2	18.6	15.5	15.0	15.6	15.6	15.7
	3M	23.6	23.6	23.5	23.4	23.3	22.2	20.9	20.2	18.5	15.5	15.2	15.9	15.8	15.7
	6M	24.1	24.2	24.1	23.9	23.6	22.2	20.5	19.7	18.5	15.7	15.7	16.4	16.2	16.1
	9M	24.1	24.2	24.1	23.8	23.5	21.7	20.5	19.7	18.2	15.7	15.7	16.4	16.4	16.1
	SIVI		23.6	23.5	23.8	23.5	21.7	19.7	19.1	17.7	15.2	15.7	16.7	16.3	15.9
	1V			23.3	23.3	23.0	21.3								
>	1Y 2V	23.6			10.6	10.6	10.2	177	16 1	15.4		13.0	150	1/1 5	
IRУ	2Y	20.0	19.9	19.7	19.6 18.0	19.6	19.3 17.5	17.7 16.1	16.1	15.4	13.1	13.9	15.0	14.5	14.0
XPIRY	2Y 3Y	20.0 18.5	19.9 18.4	19.7 18.2	18.0	17.9	17.5	16.1	14.3	13.1	11.0	11.5	12.5	12.2	11.8
EXPIRY	2Y 3Y 5Y	20.0 18.5 18.2	19.9 18.4 18.1	19.7 18.2 17.8	18.0 17.5	17.9 17.2	17.5 15.8	16.1 14.5	14.3 12.4	13.1 10.4	11.0 8.2	11.5 8.2	12.5 9.0	12.2 8.9	11.8 8.8
EXPIRY	2Y 3Y 5Y 7Y	20.0 18.5 18.2 16.6	19.9 18.4 18.1 16.4	19.7 18.2 17.8 16.2	18.0 17.5 15.9	17.9 17.2 15.6	17.5 15.8 14.4	16.1 14.5 13.3	14.3 12.4 11.5	13.1 10.4 9.4	11.0 8.2 7.7	11.5 8.2 7.6	12.5 9.0 8.3	12.2 8.9 8.1	11.8 8.8 8.1
EXPIRY	2Y 3Y 5Y 7Y 10Y	20.0 18.5 18.2 16.6 14.7	19.9 18.4 18.1 16.4 14.6	19.7 18.2 17.8 16.2 14.4	18.0 17.5 15.9 14.2	17.9 17.2 15.6 13.9	17.5 15.8 14.4 13.0	16.1 14.5 13.3 12.1	14.3 12.4 11.5 10.5	13.1 10.4 9.4 8.6	11.0 8.2 7.7 7.3	11.5 8.2 7.6 7.8	12.5 9.0 8.3 8.3	12.2 8.9 8.1 7.9	11.8 8.8 8.1 7.9
EXPIRY	2Y 3Y 5Y 7Y	20.0 18.5 18.2 16.6	19.9 18.4 18.1 16.4	19.7 18.2 17.8 16.2	18.0 17.5 15.9	17.9 17.2 15.6	17.5 15.8 14.4	16.1 14.5 13.3	14.3 12.4 11.5	13.1 10.4 9.4	11.0 8.2 7.7	11.5 8.2 7.6	12.5 9.0 8.3	12.2 8.9 8.1	11.8 8.8 8.1

Absolute Normal Interest Rate Shocks (Continued)

	Takal Ada Fo	•													
	Total Asia Ex-								100						
	1M	16.4	16.4	16.5 16.2	16.6	16.8	16.8	16.4 15.9	16.9 16.1	16.7	15.4	15.3 14.7	16.2	15.5	15.1
	3M 6M	16.2 15.8	16.2 15.8	15.8	16.3 15.8	16.4 15.8	16.3 15.6	15.9	15.0	15.8 14.6	14.5 13.2	13.9	15.6 14.6	14.8 13.8	14.3 13.2
	9M	15.4	15.4	15.4	15.3	15.3	14.9	14.2	13.9	13.5	11.9	13.0	13.8	12.9	12.0
	1Y	15.1	15.0	15.0	14.9	14.8	14.3	13.5	13.0	12.5	10.9	12.2	12.9	12.0	11.1
≻	2Y	13.1	13.8	13.8	13.7	13.7	12.7	11.6	10.6	10.1	8.7	9.5	10.0	9.2	8.6
EXPIRY	3Y	13.2	13.1	13.0	12.9	12.8	11.6	10.4	9.1	8.4	7.5	7.7	8.0	7.5	7.2
×	5Y	12.1	12.0	11.8	11.6	11.4	10.2	9.0	7.4	6.6	5.9	5.8	5.9	5.6	5.6
	7Y	10.3	10.2	10.0	9.8	9.6	8.7	7.8	6.5	5.6	5.1	4.9	5.0	4.7	4.7
	10Y	8.3	8.2	8.1	7.9	7.8	7.2	6.6	5.6	4.7	4.3	4.2	4.3	4.0	4.0
	15Y	5.6	5.5	5.5	5.4	5.3	4.9	4.6	3.9	3.4	3.1	3.1	3.3	3.1	3.1
	20Y	3.5	3.5	3.5	3.4	3.4	3.2	3.1	2.7	2.6	2.3	2.3	2.6	2.5	2.5
	30Y	2.5	2.4	2.4	2.4	2.3	2.2	2.1	2.0	2.0	1.8	1.9	2.0	2.0	2.0
	Total ME/N.	Africa													
	1M	0.6	0.6	0.6	0.6	0.6	1.0	1.6	2.9	4.3	5.5	6.6	7.7	7.3	7.1
	3M	0.7	0.7	0.7	0.7	0.7	1.1	1.7	3.0	4.3	5.4	6.5	7.6	7.2	6.9
	6M	0.9	0.9	0.9	0.9	0.9	1.4	1.9	3.2	4.4	5.3	6.4	7.3	6.9	6.6
	9M	1.1	1.1	1.1	1.0	1.0	1.6	2.1	3.3	4.4	5.1	6.2	7.1	6.7	6.4
>	1Y	1.3	1.3	1.2	1.2	1.2	1.8	2.3	3.5	4.5	5.0	6.1	6.9	6.4	6.1
æ	2Y	2.3	2.3	2.3	2.3	2.2	2.7	3.2	3.9	4.6	4.7	5.5	6.1	5.6	5.2
EXPIR	3Y	3.4	3.3	3.3	3.2	3.2	3.7	4.0	4.3	4.7	4.4	5.0	5.4	5.0	4.7
ш	5Y	5.6	5.5	5.5	5.4	5.3	5.3	5.2	4.9	4.6	4.2	4.4	4.4	4.1	4.0
	7Y	6.5	6.4	6.3	6.2	6.1	6.0	5.8	5.1	4.3	4.0	3.9	3.8	3.6	3.5 3.0
	10Y 15Y	6.0 4.6	6.0 4.5	5.9 4.5	5.8 4.4	5.8 4.3	5.6 4.2	5.1 3.9	4.4 3.5	3.8 2.7	3.6 2.4	3.3 2.4	3.2 2.4	3.1 2.3	2.2
	20Y	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.7	1.6	1.5	1.5	1.6	1.6	1.6
	30Y	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.4	1.4
	Total Sub-Sal			1.5	1.5	1.5	1.5	1.5	1.4	1.7	1.5	1.3	1.5	1.4	1.4
	1M	12.8	12.8	12.7	12.6	12.5	13.8	13.7	15.9	16.1	14.5	14.4	15.0	14.3	13.8
	3M	11.4	11.3	11.2	11.2	11.1	13.4	13.2	15.2	15.6	13.9	15.2	15.8	15.0	14.4
	6M	13.0	13.0	12.9	12.8	12.7	14.6	14.1	15.6	15.6	13.8	15.2	15.7	14.9	14.3
	9M	14.9	14.9	14.7	14.6	14.5	16.4	15.4	15.6	15.4	13.5	14.9	15.4	14.6	13.9
	1Y	16.4	16.3	16.2	16.0	15.9	17.7	16.4	15.4	15.1	13.1	14.4	15.0	14.2	13.4
8	2Y	18.7	18.5	18.3	18.1	17.9	16.5	15.1	13.5	13.1	11.2	12.7	13.2	12.3	11.5
EXPIRY	3Y	17.0	16.8	16.6	16.4	16.1	15.5	14.0	12.1	11.4	9.9	10.9	11.4	10.7	10.0
G	5Y	14.7	14.6	14.4	14.1	13.9	13.4	12.3	10.5	9.3	8.1	8.3	8.8	8.5	8.4
	7Y	14.5	14.4	14.2	13.9	13.7	12.7	11.7	10.1	8.7	7.9	7.7	8.1	7.9	8.0
	10Y	13.0	12.9	12.7	12.6	12.4	11.7	11.0	9.5	8.0	7.4	7.6	7.9	7.7	7.9
	15Y	8.5	8.4	8.3	8.2	8.1	7.6	7.6	6.3	5.4	5.6	6.0	6.3	6.1	6.1
	20Y	5.7	5.6	5.6	5.6	5.5	5.6	5.7	5.3	5.1	5.0	4.7	5.0	4.8	4.7
	30Y	1.7	1.7	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.5	2.4	2.6	2.6	2.5

Other Rates

Absolute Change in Inflation (bps)

							MATURITY	1					
Currency	1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	30Y
AUD	(5.8)	(5.9)	(6.0)	(6.0)	(6.1)	(6.2)	(6.2)	(6.1)	(5.9)	(5.8)	(5.7)	(5.7)	(5.7)
EUR	(24.8)	(23.9)	(22.6)	(21.4)	(20.4)	(16.8)	(14.3)	(11.1)	(9.4)	(8.1)	(7.0)	(6.1)	(4.5)
GBP	(7.1)	(7.7)	(8.4)	(9.1)	(9.6)	(10.8)	(11.1)	(10.4)	(9.0)	(7.1)	(4.8)	(3.6)	(2.4)
JPY	(44.8)	(44.3)	(43.6)	(42.9)	(42.2)	(39.7)	(37.5)	(33.8)	(31.0)	(28.2)	(26.2)	(26.4)	(30.3)
USD	(2.5)	(2.2)	(1.8)	(1.4)	(1.1)	0.3	1.3	2.9	3.8	4.5	4.7	4.4	3.8
Other	(2.5)	(2.2)	(1.8)	(1.4)	(1.1)	0.3	1.3	2.9	3.8	4.5	4.7	4.4	3.8

Absolute Change in Cross-Currency vs. USD Basis (bps)

(move in bps of spread on non-USD leg)

							MATURIT	Y					
Currency	1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	30Y
AUD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GBP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JPY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Appendix 11: Global Market Shock - Severely Adverse

Securitized Products

Trading, PE & Other Fair Value AssetsSecuritized Products

Relative MV shock Based on Current Rating Sub-prine Sub-prin									RMBS							
Al Total Proc. 00 Port 20 Port			Sub-prime	Option ARMS	Other AltA		HELOC	RMBS CDO		Credit Basket	PrimeX	ABX / TABX				Other / Unspecified
Price 2006 22.2 Mg 2	Relative MV Shock Base										_	•				
Pro 2006 -23.2%																-
DOT 23.0%		-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-71.8%	-74.9%	-23.2%	-23.2%
Post 2007 Impecified Virtage A Total Pro 2006 A Same Same Same Same Same Same Same Same		-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-71.8%	-74.9%	-25.8%	-25.8%
Post 2007 Post	2007	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-23.6%	-71.8%	-74.9%	-23.6%	-23.6%
A Total Pre 2006																-23.6%
Pro 2006	Unspecified Vintage	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-25.8%	-71.8%	-74.9%	-25.8%	-25.8%
1.000	AA Total															
1907 -93 1% -93	Pre 2006	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-48.2%	-71.8%	-74.9%	-48.2%	-48.2%
Post 2007 -89.1% -49.1%	2006	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-71.8%	-74.9%	-53.6%	-53.6%
Unspecified Vintage	2007	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-71.8%	-74.9%	-49.1%	-49.1%
A Total Pre 2006	Post 2007	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-49.1%	-39.1%	-74.9%	-49.1%	-49.1%
Pre 2006 -51.7%	Unspecified Vintage	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-53.6%	-71.8%	-74.9%	-53.6%	-53.6%
Pre 2006 -51.7%	A Total															
2006 -97.496		-51 7%	-51 7%	-51 7%	-51 7%	-51 7%	-51 7%	-51.7%	-51 7%	-51 7%	-51 7%	-51 7%	-71.8%	-74 9%	-51 7%	-51.7%
12.4 15.2																-57.4%
Post 2007 152.496																-52.4%
Unspecified Vintage -57.4% -57.2%																-52.4%
Pre 2006																-57.4%
Pre 2006	BBB Total															
Color		-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-57.2%	-71.8%	-74.9%	-57.2%	-57.2%
2007 -58.0% -58																-63.5%
Post 2007 -58,0%																-58.0%
## BR Total Pre 2006																-58.0%
Pre 2006																-63.5%
Color Colo	BB Total															
2007 -68.6% -68	Pre 2006	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Post 2007 Unspecified Vintage Foot 2007	2006	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Unspecified Vintage -68.6% -6	2007	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Unspecified Vintage -68.6% -6	Post 2007	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-39.1%	-74.9%	-68.6%	-68.6%
Pre 2006	Unspecified Vintage	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
2006 -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -71.8% -74.9% -68.6% -68	B Total															
2007	Pre 2006	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Post 2007 -68.6%	2006	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Unspecified Vintage -68.6% -6	2007	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Ver Total Pre 2006 -68.6% </td <td>Post 2007</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-68.6%</td> <td>-39.1%</td> <td>-74.9%</td> <td>-68.6%</td> <td>-68.6%</td>	Post 2007	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-39.1%	-74.9%	-68.6%	-68.6%
Pre 2006	Unspecified Vintage	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
Pre 2006	<b td="" total<=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>															
2006		-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
2007																-68.6%
Post 2007																-68.6%
Unspecified Vintage																-68.6%
Pre 2006 -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -71.8% -74.9% -68.6																-68.6%
Pre 2006 -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -71.8% -74.9% -68.6	NR Total									·						
2006 -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -71.8% -74.9% -68.6% -68.6% -68.6% 2007 -68.6% <t< td=""><td></td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-68.6%</td><td>-71.8%</td><td>-74.9%</td><td>-68.6%</td><td>-68.6%</td></t<>		-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
2007																-68.6%
Post 2007 -68.6%		-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-68.6%	-71.8%	-74.9%	-68.6%	-68.6%
																-68.6%
Unspecified Vintage -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -68.6% -71.8% -74.9% -68.6% -68.6% -68.6%	Unspecified Vintage				-68.6%	-68.6%	-68.6%			-68.6%			-71.8%	-74.9%		-68.6%

Securitized Products

Trading, PE & Other Fair Value Assets

Securitized Products

Part																	ana / a. a			1
Mathematic Number Math					ABS							CIVIBS				Corporate	CDO / CLO	Ware	nouse	
Mathematic Number Math				Student			Index	Other /	Cash Non-				Index		Other /		Other /		Total	Other /
Name of Name o		Autos	Credit Cards		ABS CDS	Credit Basket				CMBS CDS	CMBS CDO	Credit Basket		Whole Loans		CLO		Total Size		-
Proceedings	Relative MV Shock Base	ed on Curren	t Rating (%)					•							•		•			
2006 728	AAA Total																			
Page 12.70	Pre 2006	-7.9%	-13.2%	-10.8%	-13.2%	-13.2%	-13.2%	-13.2%	-5.1%	-3.1%	-5.1%	-3.1%	-3.1%	-35.0%	-5.1%	-6.1%	-6.1%	-18.4%	18.4%	-2.7%
Part 1.2	2006	-7.9%	-13.2%	-12.1%	-13.2%	-13.2%	-13.2%	-13.2%	-5.3%	-3.2%	-5.3%	-3.2%	-3.2%	-35.6%	-5.3%	-6.1%	-6.1%	-22.1%	22.1%	-2.7%
Description of the color of t	2007																			
*** Table **** ********************************													-							
Prop 1966 12 18 20 20 20 20 20 20 20 2	Unspecified Vintage	-7.9%	-13.2%	-14.4%	-14.4%	-14.4%	-14.4%	-14.4%	-23.4%	-14.1%	-23.4%	-14.1%	-14.1%	-38.7%	-23.4%	-17.7%	-17.7%	-22.1%	22.1%	-2.7%
200 12.18 20.18 20.18 22.06 22.06 22.06 22.06 22.07 22.18 22.07 22.07 22.07 22.08 22.08 22.07 22.08	AA Total																			
Description 12.1% 20.1% 14.7% 14.7% 14.7% 14.7% 14.7% 14.8% 14.7% 14.8% 14.7% 14.8% 14.7% 14.8%	Pre 2006	-12.1%	-20.1%	-26.1%	-26.1%	-26.1%	-26.1%	-26.1%	-12.7%	-7.6%	-12.7%	-7.6%	-7.6%	-35.0%	-12.7%	-26.2%	-26.2%	-18.4%	18.4%	-2.7%
Section 1.2 No. 2.0	2006	-12.1%	-20.1%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-13.2%	-7.9%	-13.2%	-7.9%	-7.9%	-35.6%	-13.2%	-26.2%	-26.2%	-22.1%	22.1%	-2.7%
Second color of the color of	2007		-20.1%	-34.7%	-34.7%	-34.7%	-34.7%	-34.7%	-13.6%	-8.2%	-13.6%	-8.2%	-8.2%	-36.1%	-13.6%	-26.2%	-26.2%	-22.1%	22.1%	-2.7%
Arbeil **Pro 2006*** - 12 115** - 20 115** - 12 125** - 20 115** - 12 125** - 20 115** - 12 125** - 20 115**																				
Per 2006 12 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 18 20 20 20 20 20 20 20 2	Unspecified Vintage	-12.1%	-20.1%	-34.7%	-34.7%	-34.7%	-34.7%	-34.7%	-58.4%	-35.0%	-58.4%	-35.0%	-35.0%	-38.7%	-58.4%	-56.1%	-56.1%	-22.1%	22.1%	-2.7%
1.2 1.2	A Total																			
123 123 203 39 39 39 39 39 28 39 39 39 39 28 39 39 39 39 39 39 39 3	Pre 2006	-12.1%	-20.1%	-29.5%	-29.5%	-29.5%	-29.5%	-29.5%	-16.2%	-9.7%	-16.2%	-9.7%	-9.7%	-35.0%	-16.2%	-41.9%	-41.9%	-18.4%	18.4%	-2.7%
Post 2007 12.1% 20.1% 31.7%	2006	-12.1%	-20.1%	-32.8%	-32.8%	-32.8%	-32.8%	-32.8%	-16.8%	-10.1%	-16.8%	-10.1%	-10.1%	-35.6%	-16.8%	-41.9%	-41.9%	-22.1%	22.1%	-2.7%
Design Feed 12.1 % 20.1 % 30.2 % 30.	2007			-39.2%	-39.2%	-39.2%	-39.2%	-39.2%						-36.1%		-41.9%			22.1%	
BB Total Pre 2006	Post 2007																			
Pre-2006 122.7% 137.9% 135.4% 137.9%	Unspecified Vintage	-12.1%	-20.1%	-39.2%	-39.2%	-39.2%	-39.2%	-39.2%	-74.4%	-44.6%	-74.4%	-44.6%	-44.6%	-38.7%	-74.4%	-82.3%	-82.3%	-22.1%	22.1%	-2.7%
2006 22.7% 37.9% 33.4% 33.4% 33.4% 33.4% 33.8%	BBB Total																			
207		-22.7%	-37.9%	-35.4%	-37.9%	-37.9%	-37.9%	-37.9%	-18.7%	-11.2%	-18.7%	-11.2%	-11.2%	-35.0%	-18.7%	-44.7%	-44.7%	-18.4%	18.4%	-43.9%
Post 2007 -22.7% -37.9% -38.19% -38.11% -38.	2006	-22.7%	-37.9%	-39.4%	-39.4%	-39.4%	-39.4%	-39.4%	-19.4%	-11.6%	-19.4%	-11.6%	-11.6%	-35.6%	-19.4%	-44.7%	-44.7%	-22.1%	22.1%	-43.9%
## Ba Total ## Pre 2006 -22.7% -37.9% -47.0% -47.	2007	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-20.1%	-12.0%	-20.1%	-12.0%	-12.0%	-36.1%	-20.1%	-44.7%	-44.7%	-22.1%	22.1%	-43.9%
BB Total Pre 200622.7%37.9%35.4%37.9%37.9%37.9%37.9%37.9%18.7%11.2%18.7%11.2%11.2%35.0%18.7%47.7%47.7%47.7%22.1% - 22.1% - 24.39% - 200622.7% - 37.9% - 39.4% - 39.4%	Post 2007																			
Pre 2006 -22.7% -37.9% -35.6% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -39.4% -	Unspecified Vintage	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-86.2%	-51.7%	-86.2%	-51.7%	-51.7%	-38.7%	-86.2%	-85.9%	-85.9%	-22.1%	22.1%	-43.9%
Pre 2006 -22.7% -37.9% -35.6% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -37.9% -39.4% -	BB Total																			
22.7%		-22.7%	-37.9%	-35.4%	-37.9%	-37.9%	-37.9%	-37.9%	-18.7%	-11.2%	-18.7%	-11.2%	-11.2%	-35.0%	-18.7%	-47.7%	-47.7%	-18.4%	18.4%	-43.9%
Post 2007 Unspecified Vintage B Total Pre 2006	2006	-22.7%	-37.9%	-39.4%	-39.4%	-39.4%	-39.4%	-39.4%	-19.4%	-11.6%	-19.4%	-11.6%	-11.6%	-35.6%	-19.4%	-47.7%	-47.7%	-22.1%	22.1%	-43.9%
Brotal Pre 2006	2007	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-20.1%	-12.0%	-20.1%	-12.0%	-12.0%	-36.1%	-20.1%	-47.7%	-47.7%	-22.1%	22.1%	-43.9%
B Total Pre 2006																				
Pre 2006	Unspecified Vintage	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-86.2%	-51.7%	-86.2%	-51.7%	-51.7%	-38.7%	-86.2%	-87.4%	-87.4%	-22.1%	22.1%	-43.9%
2006	B Total																			
2007	Pre 2006	-22.7%	-37.9%	-35.4%	-37.9%	-37.9%	-37.9%	-37.9%	-18.7%	-11.2%	-18.7%	-11.2%	-11.2%	-35.0%	-18.7%	-47.7%	-47.7%	-18.4%	18.4%	-43.9%
Post 2007	2006	-22.7%	-37.9%	-39.4%	-39.4%	-39.4%	-39.4%	-39.4%	-19.4%	-11.6%	-19.4%	-11.6%	-11.6%	-35.6%	-19.4%	-47.7%	-47.7%	-22.1%	22.1%	-43.9%
Unspecified Vintage -22.7%	2007																			
CB Total Pre 2006																				
Pre 2006	Unspecified Vintage	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-86.2%	-51.7%	-86.2%	-51.7%	-51.7%	-38.7%	-86.2%	-87.4%	-87.4%	-22.1%	22.1%	-43.9%
2006	<b td="" total<=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>																			
2007 -22.7% -37.9% -47.0% -47.0% -47.0% -47.0% -47.0% -47.0% -20.1% -12.0% -20.1% -12.0% -36.1% -20.1% -47.7% -47.7% -22.1% 22.1% -43.9% -45.20% -37.9% -37.9% -38.1% -38.1% -38.1% -38.1% -86.2% -51.7% -86.2% -51.7% -38.7% -86.2% -87.4% -87.4% -18.4% 18.4% -43.9% -47.0	Pre 2006	-22.7%	-37.9%	-35.4%	-37.9%	-37.9%	-37.9%	-37.9%	-18.7%	-11.2%	-18.7%	-11.2%	-11.2%	-35.0%	-18.7%	-47.7%	-47.7%	-18.4%	18.4%	-43.9%
Post 2007	2006	-22.7%	-37.9%	-39.4%	-39.4%	-39.4%	-39.4%	-39.4%	-19.4%	-11.6%	-19.4%	-11.6%	-11.6%	-35.6%	-19.4%	-47.7%	-47.7%	-22.1%	22.1%	-43.9%
Unspecified Vintage																				
NR Total Pre 2006								1												
Pre 2006 -22.7% -37.9% -35.4% -37.9% -37.9% -37.9% -18.7% -11.2% -11.2% -11.2% -12.50% -18.7% -47.7% -47.7% -47.7% -18.4% 18.4% -43.9% 2006 -22.7% -37.9% -39.4% -39.4% -39.4% -19.4% -11.6% -11.6% -15.6% -19.4% -47.7% -47.7% -22.1% 22.1% -43.9% 2007 -22.7% -37.9% -38.1% -47.0% -47.0% -20.1% -12.0% -36.1% -20.1% -47.7% -47.7% -47.7% -22.1% 22.1% -43.9% Post 2007 -22.7% -37.9% -38.1% <td< td=""><td>Unspecified Vintage</td><td>-22.7%</td><td>-37.9%</td><td>-47.0%</td><td>-47.0%</td><td>-47.0%</td><td>-47.0%</td><td>-47.0%</td><td>-86.2%</td><td>-51.7%</td><td>-86.2%</td><td>-51.7%</td><td>-51.7%</td><td>-38.7%</td><td>-86.2%</td><td>-87.4%</td><td>-87.4%</td><td>-22.1%</td><td>22.1%</td><td>-43.9%</td></td<>	Unspecified Vintage	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-86.2%	-51.7%	-86.2%	-51.7%	-51.7%	-38.7%	-86.2%	-87.4%	-87.4%	-22.1%	22.1%	-43.9%
2006 -22.7% -37.9% -39.4% -39.4% -39.4% -39.4% -39.4% -19.4% -11.6% -19.4% -11.6% -11.6% -35.6% -19.4% -47.7% -47.7% -22.1% 22.1% -43.9% -2007 -22.7% -37.9% -47.0% -47.0% -47.0% -47.0% -47.0% -20.1% -12.0% -20.1% -12.0% -36.1% -20.1% -47.7% -47.7% -22.1% 22.1% -43.9% -47.0% -38.1% -38.1% -38.1% -38.1% -38.1% -86.2% -51.7% -86.2% -51.7% -86.2% -51.7% -38.7% -86.2% -87.4% -87.4% -18.4% -18.4% -43.9%	NR Total								ĺ											
2007 -22.7% -37.9% -47.0% -47.0% -47.0% -47.0% -47.0% -20.1% -12.0% -20.1% -12.0% -12.0% -36.1% -20.1% -47.7% -47.7% -22.1% 22.1% -43.9% -9st 2007 -22.7% -37.9% -38.1% -38.1% -38.1% -38.1% -38.1% -86.2% -51.7% -86.2% -51.7% -51.7% -38.7% -86.2% -87.4% -87.4% -18.4% -18.4% -43.9% -4	Pre 2006																			
Post 2007 -22.7% -37.9% -38.1% -38.1% -38.1% -38.1% -38.1% -38.1% -86.2% -51.7% -86.2% -51.7% -38.7% -86.2% -87.4% -87.4% -18.4% 18.4% -43.9%														-35.6%						
Unspecified Vintage22.7% -37.9% -47.0% -47.0% -47.0% -47.0% -47.0% -86.2% -51.7% -86.2% -51.7% -51.7% -38.7% -86.2% -87.4% -87.4% -22.1% 22.1% -43.9%																				
	Unspecified Vintage	-22.7%	-37.9%	-47.0%	-47.0%	-47.0%	-47.0%	-47.0%	-86.2%	-51.7%	-86.2%	-51.7%	-51.7%	-38.7%	-86.2%	-87.4%	-87.4%	-22.1%	22.1%	-43.9%

Municipals

Trading, PE & Other Fair Value Assets

Munis

	Spread Widening (has)
Bonds	Spread Widening (bps)
AAA	98.0
AA	140.0
Α	272.0
ввв	688.0
вв	1,376.0
В	2,064.0
<b< td=""><td>2,752.0</td></b<>	2,752.0
NR	2,752.0
Loans	
AAA	98.0
AA	140.0
Α	272.0
ввв	688.0
вв	1,376.0
В	2,064.0
<b< td=""><td>2,752.0</td></b<>	2,752.0
NR	2,752.0
CDS	
AAA	68.6
AA	
A	98.0 190.4
BBB	481.6
BB	963.2
В	1,444.8
Б <В	1,926.4
NR	1,926.4
Indices AAA	68.6
AA	98.0
A	190.4
ВВВ	481.6
вв	963.2
В	1,444.8
<b< td=""><td>1,926.4</td></b<>	1,926.4
NR	1,926.4
Other / Unspecified Munis	
AAA	98.0
AA	140.0
A	272.0
ВВВ	688.0
BB	1,376.0
В	2,064.0
<b< td=""><td>2,752.0</td></b<>	2,752.0
NR	2,752.0
	2,732.0

Agencies

Trading, PE & Other Fair Value Assets

Agencies

JS Residential Agency Products

US Residential Agency Products
IOs
POs
Other CMOs
Pass-Throughs
Agency Debt/Debentures
IOS Index
POS Index
MBX Index
Other Agency Derivatives
TBA's
Reverse Mortgages
Residential Other / Unspecified

OAS Widening (bps)

1,567.9
175.6
185.9
191.6
137.5
1,567.9
175.6
161.6
185.9
161.6
185.9
161.6

US Commercial Agency Products

Cash Agency CMBS
Agency CMBS Derivatives
Commercial Other / Unspecified

205.0	
205.0	
 205.0	-

Non-US Agency Products

AA AA	λA					
AA	A					
Α						
ВВ	вВ					
ВВ	3					
В						
<b< th=""><th></th><th></th><th></th><th></th><th></th><th></th></b<>						
NF	₹					

107.7
231.1
386.8
542.5
814.6
1,221.9
1,629.2
1,629.2

Rates DV01

DFAST 2018 Market Shocks: Severely Adverse Scenario

	D1 101	
Rates	DVOI	

Rates Shocks (bps) AUD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV**	1M	3M											
AUD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve			6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	30Y
Governments Agencies Municipals Swaps / Discounting Curve													
Municipals Swaps / Discounting Curve	(34.1)	(36.8)	(40.3)	(43.1)	(45.4)	(50.6)	(51.8)	(49.6)	(46.5)	(43.5)	(42.4)	(42.8)	(43.9
Swaps / Discounting Curve	(34.1)	(36.8)	(40.3)	(43.1)	(45.4)	(50.6)	(51.8)	(49.6)	(46.5)	(43.5)	(42.4)	(42.8)	(43.9
	(34.1)	(36.8)	(40.3)	(43.1)	(45.4)	(50.6)	(51.8)	(49.6)	(46.5)	(43.5)	(42.4)	(42.8)	(43.9
	(17.8)	(21.0)	(25.1)	(28.6)	(31.4)	(38.0)	(40.2)	(39.5)	(37.4)	(35.7)	(35.9)	(37.1)	(39.0
		, ,		,		, ,	, í		, ,	, ,	, ,	, í	,
Other	(17.8)	(21.0)	(25.1)	(28.6)	(31.4)	(38.0)	(40.2)	(39.5)	(37.4)	(35.7)	(35.9)	(37.1)	(39.0
UD Basis Risks (Do not include the swap) OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis AD Directional Risks Governments Agencies	38.2 38.2	40.9 40.9	44.8 44.8	48.3 48.3	51.6 51.6	62.3 62.3	69.6 69.6	77.1	78.4 78.4	74.9 74.9	65.3 65.3	58.6 58.6	58.8 58.8
Municipals	38.2	40.9	44.8	48.3	51.6	62.3	69.6	77.1	78.4	74.9	65.3	58.6	58.8
Swaps / Discounting Curve	42.0	44.0	52.0	57.0	60.0	65.0	71.8	86.6	91.8	92.2	87.3	82.4	75.9
Instruments shocked by MV**	12.0	1 110	32.0	37.0	00.0	65.6	71.0	00.0	31.0	32.2	07.0	OL. I	75.5
				57.0	60.0	65.0	71.8	86.6	91.8	92.2	87.3	00.4	
Other	42.0	44.0	52.0	57.0	60.0	65.0	71.8	00.0		32.2	87.3	82.4	75.9
				57.0	60.0	03.0	71.0			34.2	6/.3	82.4	75.9
Other AD Basis Risks (Do not include the swap/ OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis				(29.6)	(30.1)	(31.7)	(33.0)	(34.3)	(34.3)	(33.2)	(31.0)	82.4	75.9
Other AD Basis Risks (Do not include the swap/ OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis	discounting o	curve specifie	d above)										(27.3
Other AD Basis Risks (Do not include the swap/ OIS Basis In Basis 3m Basis 6m Basis 12m Basis	(28.4)	curve specifie	(29.2)	(29.6)	(30.1)	(31.7)	(33.0)	(34.3)	(34.3)	(33.2)	(31.0)	(29.2)	
Other AD Basis Risks (Do not include the swap/ OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis	(28.4) (28.4)	(28.7) (28.7)	(29.2) (29.2)	(29.6) (29.6)	(30.1)	(31.7)	(33.0)	(34.3)	(34.3)	(33.2) (33.2)	(31.0)	(29.2) (29.2)	(27.3
Other AD Basis Risks (Do not include the swap/ OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis HF Directional Risks Governments Agencies Municipals	(28.4) (28.4) (28.4)	(28.7) (28.7) (28.7)	(29.2) (29.2) (29.2)	(29.6) (29.6) (29.6)	(30.1) (30.1) (30.1)	(31.7) (31.7) (31.7)	(33.0) (33.0) (33.0)	(34.3) (34.3) (34.3)	(34.3) (34.3) (34.3)	(33.2) (33.2) (33.2)	(31.0) (31.0) (31.0)	(29.2) (29.2) (29.2)	(27.3 (27.3 (27.3

DKK Directional Risks													
Governments	(27.1)	(27.3)	(27.7)	(28.1)	(28.4)	(29.6)	(30.6)	(31.9)	(32.5)	(32.8)	(32.5)	(32.2)	(31.8)
Agencies	(27.1)	(27.3)	(27.7)	(28.1)	(28.4)	(29.6)	(30.6)	(31.9)	(32.5)	(32.8)	(32.5)	(32.2)	(31.8)
Municipals	(27.1)	(27.3)	(27.7)	(28.1)	(28.4)	(29.6)	(30.6)	(31.9)	(32.5)	(32.8)	(32.5)	(32.2)	(31.8)
Swaps / Discounting Curve	(16.0)	(16.0)	(16.1)	(16.2)	(16.3)	(16.3)	(16.2)	(15.8)	(15.3)	(14.7)	(14.6)	(15.1)	(16.8)
Instruments shocked by MV**										, ,		, , ,	,
Other	(16.0)	(16.0)	(16.1)	(16.2)	(16.3)	(16.3)	(16.2)	(15.8)	(15.3)	(14.7)	(14.6)	(15.1)	(16.8)
							, , , ,					, , , ,	
DKK Basis Risks (Do not include the swap	/discounting	curve specifie	d above)										
OIS Basis	, and counting t	l											
1m Basis													
3m Basis													
6m Basis													
12m Basis							†						
Other Basis													
Other basis	1	l.	L	I.	L	Į.	l .	Į.		L	l .	l.	l .
UR Directional Risks													
Governments: Austria	(25.6)	(26.6)	(27.9)	(29.0)	(29.8)	(31.7)	(31.9)	(30.0)	(27.4)	(24.2)	(21.3)	(20.1)	(19.1)
Governments: Belgium	(16.8)	(16.6)	(16.2)	(15.7)	(15.0)	(11.7)	(8.1)	(1.2)	4.0	8.9	12.5	13.9	14.9
Governments: Finland	(16.4)	(17.6)	(19.2)	(20.6)	(21.9)	(25.4)	(27.3)	(28.3)	(27.7)	(26.0)	(24.1)	(23.5)	(23.6)
Governments: France	(18.9)	(20.1)	(21.6)	(22.8)	(23.7)	(25.4)	(25.0)	(21.9)	(18.4)	(14.5)	(11.4)	(10.3)	(9.6)
Governments: Germany	(31.0)	(31.6)	(32.3)	(32.9)	(33.5)	(34.9)	(35.7)	(36.2)	(36.3)	(36.4)	(36.9)	(37.2)	(37.7)
Governments: Greece	269.4	399.8	595.4	791.1	986.7	1,769.4	1,923.1	1,353.9	1,109.9	927.0	784.7	712.4	641.3
Governments: Ireland	14.1	18.2	23.7	28.3	32.2	41.7	44.5	40.3	31.9	21.0	12.8	13.1	20.8
Governments: Italy	2.0	2.0	5.0	5.0	10.0	11.2	26.7	48.7	61.3	70.6	75.9	77.8	79.4
•	(24.2)	(25.4)	(26.9)	(28.1)	(29.1)	(31.4)	(32.0)	(31.3)	(30.2)	(29.2)	(28.7)	(28.6)	(28.7)
Governments: Netherlands	50.1	51.3	52.6	53.6	54.2	54.1	51.5	43.9	36.6	29.1	23.7	22.3	22.3
Governments: Portugal		+		10.1		+	25.7		41.5			51.7	
Governments: Spain	4.7	6.1	8.1	+	12.0	19.4		35.3		46.7	50.3		52.8
Governments: Other	(33.2)	(33.4)	(33.4)	(33.3)	(33.1)	(31.5)	(29.5)	(26.0)	(24.0)	(22.7)	(22.5)	(22.7)	(23.1)
Agencies	(33.2)	(33.4)	(33.4)	(33.3)	(33.1)	(31.5)	(29.5)	(26.0)	(24.0)	(22.7)	(22.5)		(23.1)
Municipals	(33.2)	(33.4)	(33.4)	(33.3)	(33.1)	(31.5)	(29.5)	(26.0)	(24.0)	(22.7)	(22.5)	(22.7)	(23.1)
Swaps / Discounting Curve	(16.4)	(17.7)	(19.4)	(20.8)	(21.8)	(24.1)	(24.3)	(22.2)	(19.4)	(16.2)	(13.3)	(12.0)	(10.9)
Instruments shocked by MV**				4		4	4	4	4			4	
Other	(16.4)	(17.7)	(19.4)	(20.8)	(21.8)	(24.1)	(24.3)	(22.2)	(19.4)	(16.2)	(13.3)	(12.0)	(10.9)
SUB Built Bid of Built double and a													
EUR Basis Risks (Do not include the swap				(45.5)	(45.5)	(44.4)	(42.2)	(44.6)	(44.0)	(40.6)	(0.0)	(0.4)	(0.0)
OIS Basis	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(14.4)	(12.2)	(11.6)	(11.0)	(10.6)	(9.9)	(9.4)	(9.3)
1m Basis	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	0.0	0.0	0.0	0.1	0.1	0.1	0.1
3m Basis	(4.5)	()	()	(4.5)	()	(0.0)	(0.0)						
6m Basis	(1.9)	(1.5)	(1.4)	(1.3)	(1.3)	(0.8)	(0.2)	0.1	0.4	0.6	0.7	0.7	0.5
12m Basis	(5.1)	(4.0)	(3.7)	(3.5)	(3.4)	(1.9)	(0.5)	0.3	0.9	1.4	1.5	1.4	1.0
Other Basis													
GBP Directional Risks	(22 =)	(2.5.5)	(2)	(2.5.5)	(2.5.5)	(25.5)	(2.5.5)	(22 -)	(20 =)	(4)	(4)	(40.00)	
Governments	(23.7)	(24.0)	(24.3)	(24.6)	(24.8)	(25.0)	(24.6)	(22.7)	(20.5)	(17.5)	(14.0)	(11.9)	(9.6)
Agencies	(23.7)	(24.0)	(24.3)	(24.6)	(24.8)	(25.0)	(24.6)	(22.7)	(20.5)	(17.5)	(14.0)	(11.9)	(9.6)
Municipals	(23.7)	(24.0)	(24.3)	(24.6)	(24.8)	(25.0)	(24.6)	(22.7)	(20.5)	(17.5)	(14.0)	(11.9)	(9.6)
Swaps / Discounting Curve	(23.8)	(23.0)	(22.0)	(22.0)	(21.0)	(20.0)	(20.0)	(19.1)	(16.5)	(14.4)	(12.6)	(10.7)	(5.7)
Instruments shocked by MV**													
Other	(23.8)	(23.0)	(22.0)	(22.0)	(21.0)	(20.0)	(20.0)	(19.1)	(16.5)	(14.4)	(12.6)	(10.7)	(5.7)
GBP Basis Risks (Do not include the swap				1	1	1	1	т.		,	1	1	
OIS Basis	(15.5)	(15.5)	(15.5)	(15.5)	(15.5)	(14.4)	(12.2)	(11.6)	(11.0)	(10.6)	(9.9)	(9.4)	(9.3)
1m Basis	(2.0)	(2.7)	(2.7)	(2.8)	(2.9)	(3.0)	(2.8)	(2.8)	(2.8)	(2.8)	(2.8)	(2.6)	(2.3)
3m Basis													
6m Basis	1.8	2.4	2.4	2.5	2.5	2.3	2.0	1.9	2.0	2.1	2.2	2.2	2.2
													4.5
12m Basis	3.9	5.2	5.3	5.4	5.5	6.0	5.9	5.5	5.4	5.3	5.1	4.9	4.5

PY Directional Risks													
Governments	(11.5)	(12.5)	(14.0)	(15.3)	(16.4)	(19.9)	(21.9)	(23.4)	(23.4)	(22.8)	(23.9)	(27.6)	(37.9)
Agencies	(11.5)	(12.5)	(14.0)	(15.3)	(16.4)	(19.9)	(21.9)	(23.4)	(23.4)	(22.8)	(23.9)	(27.6)	(37.9)
Municipals	(11.5)	(12.5)	(14.0)	(15.3)	(16.4)	(19.9)	(21.9)	(23.4)	(23.4)	(22.8)	(23.9)	(27.6)	(37.9)
Swaps / Discounting Curve	(9.2)	(9.7)	(10.5)	(11.3)	(12.0)	(15.0)	(16.0)	(16.0)	(16.0)	(17.0)	(17.0)	(18.0)	(20.0)
Instruments shocked by MV**	(9.2)	(3.7)	(10.3)	(11.5)	(12.0)	(13.0)	(10.0)	(10.0)	(10.0)	(17.0)	(17.0)	(18.0)	(20.0)
Other	(9.2)	(9.7)	(10.5)	(11.3)	(12.0)	(15.0)	(16.0)	(16.0)	(16.0)	(17.0)	(17.0)	(18.0)	(20.0)
Other	(3.2)	(3.7)	(10.3)	(11.5)	(12.0)	(13.0)	(10.0)	(10.0)	(10.0)	(17.0)	(17.0)	(18.0)	(20.0)
PY Basis Risks (Do not include the swa	ap/discounting c	urve specified	d above)										
OIS Basis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1m TIBOR Basis	(0.4)	(0.3)	(0.2)	0.2	0.1	0.2	0.2	0.3	0.3	0.4	0.7	0.9	1.1
3m TIBOR Basis		` ′	` ′										
6m TIBOR Basis	(0.5)	(0.3)	(0.3)	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2
12m TIBOR Basis	((/	(/	-	_	_	_	_	_				
1m LIBOR Basis	(0.4)	(0.3)	(0.2)	0.2	0.1	0.2	0.2	0.3	0.3	0.4	0.7	0.9	1.1
3m LIBOR Basis	(0.4)	(0.3)	(0.2)	0.2	0.1	0.2	0.2	0.5	0.5	0.4	0.7	0.5	1.1
6m LIBOR Basis	(0.5)	(0.3)	(0.3)	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2
12m LIBOR Basis	(0.3)	(0.3)	(0.3)	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2
Other Basis										+	+	+	1
Other basis		1			l .		l .	l .					
NOK Directional Risks													
Governments	(19.4)	(20.8)	(22.7)	(24.4)	(25.8)	(29.9)	(32.0)	(33.0)	(32.0)	(29.8)	(26.6)	(24.7)	(22.6)
Agencies	(19.4)	(20.8)	(22.7)	(24.4)	(25.8)	(29.9)	(32.0)	(33.0)	(32.0)	(29.8)	(26.6)	(24.7)	(22.6)
9	_ ` '	(20.8)	(22.7)	(24.4)	(25.8)	(29.9)	(32.0)	(33.0)	(32.0)	(29.8)	(26.6)	(24.7)	(22.6)
Municipals													
Municipals Swans / Discounting Curve	(19.4)											(18.0)	(18.9)
Swaps / Discounting Curve	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)	(18.0)	(18.9)
Swaps / Discounting Curve Instruments shocked by MV**	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve												(18.0)	(18.9)
Swaps / Discounting Curve Instruments shocked by MV**	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis Im Basis 3m Basis 6m Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis Im Basis 3m Basis 6m Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(15.0)	(15.0)	(16.0)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)		
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(15.0) (15.0) vap/discounting	(15.0) (15.0) curve specifie	(16.0) (16.0) ed above)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)	(18.0)	(18.9)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis	(15.0) (15.0) /ap/discounting	(15.0) (15.0) curve specifie	(16.0) (16.0) ed above)	(17.0)	(17.0)	(18.0)	(18.0)	(21.7)	(20.2)	(18.7)	(17.9)	(18.0)	(18.9)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 5m Basis 6m Basis 12m Basis Other Basis Other Basis Governments Agencies	(15.0) (15.0) vap/discounting	(15.0) (15.0) curve specifie	(16.0) (16.0) ed above) (31.0) (31.0)	(17.0) (17.0) (17.0)	(17.0) (17.0) (17.0)	(18.0) (18.0) (18.0)	(18.0) (18.0) (18.0)	(21.7) (21.7) (21.7)	(20.2) (20.2) (20.2)	(18.7) (18.7) (18.6) (40.6) (40.6)	(17.9) (17.9) (17.9) (39.0) (39.0)	(38.2)	(37.3)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis NZD Directional Risks Governments Agencies Municipals	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8)	(16.0) (16.0) (16.0) ed above) (31.0) (31.0) (31.0)	(17.0) (17.0) (17.0) (33.6) (33.6) (33.6)	(35.8) (35.8) (35.8)	(41.2) (41.2) (41.2)	(18.0) (18.0) (18.3) (43.3) (43.3) (43.3)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5)	(42.3) (42.3) (42.3)	(40.6) (40.6) (40.6)	(17.9) (17.9) (17.9) (39.0) (39.0) (39.0) (39.0)	(18.0) (18.0) (38.2) (38.2) (38.2) (38.2)	(37.3) (37.3) (37.3)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8)	(16.0) (16.0) (16.0) ed above) (31.0) (31.0) (31.0)	(17.0) (17.0) (17.0) (33.6) (33.6) (33.6)	(35.8) (35.8) (35.8)	(41.2) (41.2) (41.2)	(18.0) (18.0) (18.3) (43.3) (43.3) (43.3)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5)	(42.3) (42.3) (42.3)	(40.6) (40.6) (40.6)	(17.9) (17.9) (17.9) (39.0) (39.0) (39.0) (39.0)	(18.0) (18.0) (38.2) (38.2) (38.2) (38.2)	(37.3) (37.3) (37.3)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV**	(15.0) (15.0) (15.0) (25.0) (25.3) (25.3) (25.3) (25.3) (20.0)	(27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV**	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3) (20.0)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 5m Basis 12m Basis Other Basis Other Basis VZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3) (20.0)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the sw	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3) (20.0)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis NZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the sw OIS Basis	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3) (20.0)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis VZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the sw OIS Basis 1m Basis	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3) (20.0)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)
Swaps / Discounting Curve Instruments shocked by MV** Other NOK Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis VZD Directional Risks Governments Agencies Municipals Swaps / Discounting Curve Instruments shocked by MV** Other NZD Basis Risks (Do not include the sw OIS Basis 1m Basis 3m Basis	(15.0) (15.0) /ap/discounting (25.3) (25.3) (25.3) (20.0)	(15.0) (15.0) curve specifie (27.8) (27.8) (27.8) (27.8) (20.0)	(31.0) (31.0) (31.0) (31.0) (21.0)	(33.6) (33.6) (33.6) (33.6) (21.0)	(35.8) (35.8) (35.8) (35.8) (22.0)	(41.2) (41.2) (41.2) (41.2) (25.0)	(43.3) (43.3) (43.3) (43.3) (27.1)	(21.7) (21.7) (21.7) (43.5) (43.5) (43.5) (24.3)	(42.3) (42.3) (42.3) (42.3) (22.0)	(40.6) (40.6) (40.6) (40.6) (19.7)	(39.0) (39.0) (39.0) (39.0) (17.7)	(18.0) (18.0) (38.2) (38.2) (38.2) (16.8)	(37.3) (37.3) (37.3) (37.3) (15.8)

SEK Directional Risks													
Governments	(15.0)	(17.4)	(20.6)	(23.5)	(26.0)	(33.6)	(38.2)	(42.0)	(42.7)	(42.1)	(41.3)	(41.4)	(42.1)
Agencies	(15.0)	(17.4)	(20.6)	(23.5)	(26.0)	(33.6)	(38.2)	(42.0)	(42.7)	(42.1)	(41.3)	(41.4)	(42.1)
Municipals	(15.0)	(17.4)	(20.6)	(23.5)	(26.0)	(33.6)	(38.2)	(42.0)	(42.7)	(42.1)	(41.3)	(41.4)	(42.1)
Swaps / Discounting Curve	(15.0)	(15.0)	(17.0)	(18.0)	(20.0)	(28.6)	(29.7)	(29.7)	(28.7)	(27.3)	(26.0)	(25.3)	(24.6)
Instruments shocked by MV**	((2 2)	(/	((3 2)	(2 2)	(- /	(-)	(-)	()	((2 2)	(-7
Other	(15.0)	(15.0)	(17.0)	(18.0)	(20.0)	(28.6)	(29.7)	(29.7)	(28.7)	(27.3)	(26.0)	(25.3)	(24.6)
	(==:-)	(==::)	(=:::)	(==:=)	(==::)	(=0.0)	(==::)	(====)	(==::)	(=::=)	(====)	(==:=)	(=)
SEK Basis Risks (Do not include the swap/	discounting c	urve specifie	d above)										
OIS Basis													
1m Basis													
3m Basis													
6m Basis													
12m Basis													
Other Basis													
other basis	I	1	1			I		1		ı	ı	ı	I
USD Directional Risks													
Governments	24.6	34.6	48.4	61.0	72.5	109.1	134.1	161.9	172.9	175.4	169.0	161.8	152.5
Agencies	24.6	34.6	48.4	61.0	72.5	109.1	134.1	161.9	172.9	175.4	169.0	161.8	152.5
Municipals	24.6	34.6	48.4	61.0	72.5	109.1	134.1	161.9	172.9	175.4	169.0	161.8	152.5
Swaps / Discounting Curve	28.4	39.0	54.0	70.5	85.0	115.0	141.2	175.4	186.7	191.4	192.9	194.0	196.4
Instruments shocked by MV**													
Other	28.4	39.0	54.0	70.5	85.0	115.0	141.2	175.4	186.7	191.4	192.9	194.0	196.4
								1					1
USD Basis Risks (Do not include the swap,	discounting (curve specifie	d above)										
USD Basis Risks (Do not include the swap, Prime Basis	discounting (11.9)	curve specifie	(11.2)	(11.4)	(11.6)	(8.3)	(5.2)	(4.2)	(1.2)	(0.8)	(0.8)	(0.8)	(0.8)
`				(11.4) (13.0)	(11.6) (13.3)	(8.3) (9.7)	(5.2) (8.6)	(4.2) (5.6)	(1.2)	(0.8)	(0.8)	(0.8)	(0.8)
Prime Basis	(11.9)	(11.8)	(11.2)										
Prime Basis CP Basis	(11.9) (13.7)	(11.8) (13.5)	(11.2) (12.9)	(13.0)	(13.3)	(9.7)	(8.6)	(5.6)	(2.9)	(4.0)	(4.1)	(4.2)	(4.1)
Prime Basis CP Basis OIS Basis	(11.9) (13.7) (18.0)	(11.8) (13.5) (17.9)	(11.2) (12.9) (17.5)	(13.0) (17.0)	(13.3) (16.5)	(9.7) (15.4)	(8.6)	(5.6) (6.0)	(2.9)	(4.0) (3.5)	(4.1)	(4.2)	(4.1)
Prime Basis CP Basis OIS Basis 1m Basis	(11.9) (13.7) (18.0)	(11.8) (13.5) (17.9)	(11.2) (12.9) (17.5)	(13.0) (17.0)	(13.3) (16.5)	(9.7) (15.4)	(8.6)	(5.6) (6.0)	(2.9)	(4.0) (3.5)	(4.1)	(4.2)	(4.1)
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis	(11.9) (13.7) (18.0) (20.0)	(11.8) (13.5) (17.9) (18.5)	(11.2) (12.9) (17.5) (15.6)	(13.0) (17.0) (11.4)	(13.3) (16.5) (10.2)	(9.7) (15.4) (5.7)	(8.6) (8.0) (3.8)	(5.6) (6.0) (1.5)	(2.9) (3.8) (0.4)	(4.0) (3.5) 0.6	(4.1) (3.5) 0.6	(4.2) (3.5) 2.1	(4.1) (3.5) 2.6
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis	(11.9) (13.7) (18.0) (20.0)	(11.8) (13.5) (17.9) (18.5)	(11.2) (12.9) (17.5) (15.6)	(13.0) (17.0) (11.4) 10.0	(13.3) (16.5) (10.2)	(9.7) (15.4) (5.7) 7.9	(8.6) (8.0) (3.8) 7.1	(5.6) (6.0) (1.5) 5.7	(2.9) (3.8) (0.4) 5.2	(4.0) (3.5) 0.6	(4.1) (3.5) 0.6	(4.2) (3.5) 2.1 5.3	(4.1) (3.5) 2.6 5.3
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis	(11.9) (13.7) (18.0) (20.0)	(11.8) (13.5) (17.9) (18.5)	(11.2) (12.9) (17.5) (15.6)	(13.0) (17.0) (11.4) 10.0	(13.3) (16.5) (10.2)	(9.7) (15.4) (5.7) 7.9	(8.6) (8.0) (3.8) 7.1	(5.6) (6.0) (1.5) 5.7	(2.9) (3.8) (0.4) 5.2	(4.0) (3.5) 0.6	(4.1) (3.5) 0.6	(4.2) (3.5) 2.1 5.3	(4.1) (3.5) 2.6 5.3
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(11.9) (13.7) (18.0) (20.0)	(11.8) (13.5) (17.9) (18.5)	(11.2) (12.9) (17.5) (15.6)	(13.0) (17.0) (11.4) 10.0	(13.3) (16.5) (10.2)	(9.7) (15.4) (5.7) 7.9	(8.6) (8.0) (3.8) 7.1	(5.6) (6.0) (1.5) 5.7	(2.9) (3.8) (0.4) 5.2	(4.0) (3.5) 0.6	(4.1) (3.5) 0.6	(4.2) (3.5) 2.1 5.3	(4.1) (3.5) 2.6 5.3
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7	(13.3) (16.5) (10.2) 10.2 21.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1	(4.1) (3.5) 0.6 5.3 8.4	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7	(13.3) (16.5) (10.2) 10.2 21.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1	(4.1) (3.5) 0.6 5.3 8.4	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7	(13.3) (16.5) (10.2) 10.2 21.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1	(4.1) (3.5) 0.6 5.3 8.4	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7	(13.3) (16.5) (10.2) 10.2 21.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1	(4.1) (3.5) 0.6 5.3 8.4	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7	(13.3) (16.5) (10.2) 10.2 21.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1	(4.1) (3.5) 0.6 5.3 8.4	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5
Prime Basis CP Basis OIS Basis 1m Basis 3m Basis 6m Basis 12m Basis Other Basis Absolute increase in Muni SIFMA/Libor Ratio (Pts) Other Advanced Economies Directional Resis	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7	(13.3) (16.5) (10.2) 10.2 21.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1	(4.1) (3.5) 0.6 5.3 8.4	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5
Prime Basis CP Basis OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Absolute increase in Muni SIFMA/Libor Ratio (Pts) Other Advanced Economies Directional Ri Governments Agencies	(11.9) (13.7) (18.0) (20.0) 10.5 21.7	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7 20.0	(13.3) (16.5) (10.2) 10.2 21.2 19.2	(9.7) (15.4) (5.7) 7.9 16.9	(8.6) (8.0) (3.8) 7.1 14.9	(5.6) (6.0) (1.5) 5.7 11.9 21.3	(2.9) (3.8) (0.4) 5.2 10.7	(4.0) (3.5) 0.6 5.1 11.1 20.1	(4.1) (3.5) 0.6 5.3 8.4 15.1	(4.2) (3.5) 2.1 5.3 7.5	(4.1) (3.5) 2.6 5.3 5.5 8.5
Prime Basis CP Basis OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Absolute increase in Muni SIFMA/Libor Ratio (Pts) Other Advanced Economies Directional Ri Governments Agencies Municipals	(11.9) (13.7) (18.0) (20.0) 10.5 21.7 23.0	(11.8) (13.5) (17.9) (18.5) 10.4 21.5	(11.2) (12.9) (17.5) (15.6) 9.9 20.5 20.0	(13.0) (17.0) (11.4) 10.0 20.7 20.0	(13.3) (16.5) (10.2) 10.2 21.2 19.2 72.5 72.5 72.5	(9.7) (15.4) (5.7) 7.9 16.9 19.5	(8.6) (8.0) (3.8) 7.1 14.9 20.1	(5.6) (6.0) (1.5) 5.7 11.9 21.3	(2.9) (3.8) (0.4) 5.2 10.7 21.2 172.9 172.9 172.9	(4.0) (3.5) 0.6 5.1 11.1 20.1	(4.1) (3.5) 0.6 5.3 8.4 15.1	(4.2) (3.5) 2.1 5.3 7.5 12.1	(4.1) (3.5) 2.6 5.3 5.5 8.5
Prime Basis CP Basis OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Absolute increase in Muni SIFMA/Libor Ratio (Pts) Other Advanced Economies Directional Ri Governments Agencies Municipals Swaps / Discounting Curve	(11.9) (13.7) (18.0) (20.0) 10.5 21.7 23.0 isks 24.6 24.6 24.6	(11.8) (13.5) (17.9) (18.5) 10.4 21.5 23.0	(11.2) (12.9) (17.5) (15.6) 9.9 20.5	(13.0) (17.0) (11.4) 10.0 20.7 20.0	(13.3) (16.5) (10.2) 10.2 21.2 19.2	(9.7) (15.4) (5.7) 7.9 16.9 19.5	(8.6) (8.0) (3.8) 7.1 14.9 20.1	(5.6) (6.0) (1.5) 5.7 11.9 21.3	(2.9) (3.8) (0.4) 5.2 10.7 21.2	(4.0) (3.5) 0.6 5.1 11.1 20.1 175.4 175.4 175.4	(4.1) (3.5) 0.6 5.3 8.4 15.1 169.0 169.0 169.0	(4.2) (3.5) 2.1 5.3 7.5 12.1 161.8 161.8	(4.1) (3.5) 2.6 5.3 5.5 8.5 152.5 152.5 152.5
Prime Basis CP Basis OIS Basis Im Basis 3m Basis 6m Basis 12m Basis Other Basis Other Basis Absolute increase in Muni SIFMA/Libor Ratio (Pts) Other Advanced Economies Directional Ri Governments Agencies Municipals	(11.9) (13.7) (18.0) (20.0) 10.5 21.7 23.0 isks 24.6 24.6 24.6	(11.8) (13.5) (17.9) (18.5) 10.4 21.5 23.0	(11.2) (12.9) (17.5) (15.6) 9.9 20.5 20.0	(13.0) (17.0) (11.4) 10.0 20.7 20.0	(13.3) (16.5) (10.2) 10.2 21.2 19.2 72.5 72.5 72.5	(9.7) (15.4) (5.7) 7.9 16.9 19.5	(8.6) (8.0) (3.8) 7.1 14.9 20.1	(5.6) (6.0) (1.5) 5.7 11.9 21.3	(2.9) (3.8) (0.4) 5.2 10.7 21.2 172.9 172.9 172.9	(4.0) (3.5) 0.6 5.1 11.1 20.1 175.4 175.4 175.4	(4.1) (3.5) 0.6 5.3 8.4 15.1 169.0 169.0 169.0	(4.2) (3.5) 2.1 5.3 7.5 12.1 161.8 161.8	(4.1) (3.5) 2.6 5.3 5.5 8.5 152.5 152.5 152.5

Directional Risks: Emerging Europe													
BGN	36.8	39.4	43.0	46.1	48.9	57.2	61.9	65.0	64.0	60.0	53.5	48.9	43.8
CZK	(14.4)	(15.8)	(17.6)	(19.2)	(20.6)	(24.4)	(26.4)	(27.7)	(27.5)	(26.7)	(25.6)	(25.1)	(24.5)
HRK	36.8	39.4	43.0	46.1	48.9	57.2	61.9	65.0	64.0	60.0	53.5	48.9	43.8
HUF	36.8	39.4	43.0	46.1	48.9	57.2	61.9	65.0	64.0	60.0	53.5	48.9	43.8
PLN	(24.8)	(24.4)	(23.9)	(23.5)	(23.0)	(21.5)	(20.1)	(18.0)	(16.6)	(15.2)	(14.1)	(13.7)	(13.6)
RON	36.8	39.4	43.0	46.1	48.9	57.2	61.9	65.0	64.0	60.0	53.5	48.9	43.8
RUB	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
Other Emerging Europe	(14.4)	(15.8)	(17.6)	(19.2)	(20.6)	(24.4)	(26.4)	(27.7)	(27.5)	(26.7)	(25.6)	(25.1)	(24.5)
Directional Risks: Latin America & Caribbe													
ARS	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
BRL	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
CLP	38.7	41.6	45.6	48.9	51.7	58.7	60.8	57.4	50.0	38.3	23.5	14.3	4.4
COP	77.3	62.2	44.7	32.2	23.3	7.7	5.2	5.5	5.2	3.9	2.5	1.8	1.0
MXN	48.7	51.6	55.6	58.9	61.7	68.7	70.8	67.4	60.0	48.3	33.5	24.3	14.4
PEN	48.7	51.6	55.6	58.9	61.7	68.7	70.8	67.4	60.0	48.3	33.5	24.3	14.4
VEF	200.0	198.9	197.2	195.5	193.9	187.2	180.5	167.1	153.8	133.7	100.3	66.9	0.0
Other Latam & Caribbean	38.7	41.6	45.6	48.9	51.7	58.7	60.8	57.4	50.0	38.3	23.5	14.3	4.4
Directional Risks: Asia Ex-Japan		Γ	1					Γ	Γ		1	Γ	1
CNY	3.5	3.1	2.5	1.9	1.4	(0.3)	(1.4)	(2.6)	(2.9)	(2.6)	(1.6)	(0.7)	0.5
HKD	(22.4)	(22.2)	(21.9)	(21.7)	(21.5)	(20.7)	(20.2)	(19.6)	(19.3)	(19.1)	(19.1)	(19.2)	(19.3)
IDR	6.5	6.1	5.5	4.9	4.4	2.7	1.6	0.4	0.1	0.4	1.4	2.3	3.5
INR	6.5	6.1	5.5	4.9	4.4	2.7	1.6	0.4	0.1	0.4	1.4	2.3	3.5
KRW	(12.3)	(12.7)	(13.4)	(13.9)	(14.4)	(15.9)	(16.9)	(17.9)	(18.4)	(18.9)	(19.8)	(20.6)	(21.7)
MYR	6.5	6.1	5.5	4.9	4.4	2.7	1.6	0.4	0.1	0.4	1.4	2.3	3.5
PHP	3.5	3.1	2.5	1.9	1.4	(0.3)	(1.4)	(2.6)	(2.9)	(2.6)	(1.6)	(0.7)	0.5
SGD	(24.4)	(24.2)	(23.9)	(23.7)	(23.5)	(22.7)	(22.2)	(21.6)	(21.3)	(21.1)	(21.1)	(21.2)	(21.3)
THB	6.5	6.1	5.5	4.9	4.4	2.7	1.6	0.4	0.1	0.4	1.4	2.3	3.5
TWD	(12.3)	(12.7)	(13.4)	(13.9)	(14.4)	(15.9)	(16.9)	(17.9)	(18.4)	(18.9)	(19.8)	(20.6)	(21.7)
Other Asia Ex-Japan	6.5	6.1	5.5	4.9	4.4	2.7	1.6	0.4	0.1	0.4	1.4	2.3	3.5
Directional Risks: Middle East/North Afric	·a												
1 =					()	(20.9)	(22.2)	(23.1)	(23.8)	(25.6)	(29.3)	(32.3)	(35.9)
ILS	(12.9)	(14.1)	(15.7)	(17.1)	(18.2)	(20.9)	(22.2)	(23.1)	_ ` ′	(23.0)		` '	(55.5)
TRY		8.0	(15.7) 10.0	(17.1) 12.6	21.5	30.2	31.2	31.9	32.2	32.4	32.6	32.6	32.7
l l	(12.9)	, ,	, ,	· · · · ·	` '	\ /	. ,	\ - /	_ ` ′	· , ,		` '	. ,
TRY	(12.9) 7.0	8.0	10.0	12.6	21.5	30.2	31.2	31.9	32.2	32.4	32.6	32.6	32.7
TRY Other Middle East/Africa	(12.9) 7.0	8.0	10.0	12.6	21.5	30.2	31.2	31.9	32.2	32.4	32.6	32.6	32.7

Relative Normal Interest Rate Shocks

Rates Vega
Relative Normal Interest Rate Shocks (%)

								MATU	IRITY						
		1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	25Y	30Y
	AUD														
	1M	33.5%	33.5%	32.9%	32.9%	32.9%	22.1%	20.4%	18.1%	16.8%	14.5%	13.9%	14.1%	14.0%	14.0%
	3M	31.6%	31.2%	31.2%	31.2%	30.7%	21.2%	19.1%	17.2%	16.0%	13.8%	13.4%	13.8%	13.4%	13.5%
	6M	25.5%	25.2%	25.2%	24.8%	24.8%	19.4%	17.9%	16.1%	15.1%	13.0%	12.6%	13.1%	12.8%	12.8%
	9M	23.0%	23.0%	22.7%	22.7%	22.4%	18.4%	17.1%	15.3%	14.4%	12.2%	12.2%	12.7%	12.3%	12.3%
	1Y	20.7%	20.7%	20.5%	20.3%	20.0%	18.0%	16.4%	14.5%	13.6%	11.3%	11.6%	12.1%	11.8%	11.7%
≥	2Y	16.9%	16.8%	16.6%	16.4%	16.2%	14.5%	12.9%	11.3%	10.5%	8.7%	9.3%	9.8%	9.5%	9.3%
EXPIRY	3Y	14.6%	14.4%	14.3%	14.1%	13.9%	12.1%	10.9%	9.4%	8.7%	7.3%	7.7%	8.2%	7.9%	7.9%
×	5Y	11.6%	11.5%	11.3%	11.0%	10.9%	9.9%	9.0%	7.5%	6.6%	5.9%	5.9%	6.2%	6.3%	6.3%
	7Y	9.6%	9.5%	9.3%	9.2%	9.0%	8.2%	7.7%	6.5%	5.7%	5.1%	5.1%	5.4%	5.5%	5.6%
	10Y	7.7%	7.7%	7.5%	7.5%	7.4%	7.0%	6.6%	5.8%	4.7%	4.4%	4.6%	5.0%	4.9%	5.2%
	15Y	5.5%	5.3%	5.3%	5.2%	5.2%	4.9%	4.6%	4.0%	3.6%	3.5%	4.0%	4.3%	4.3%	4.5%
	20Y	4.4%	4.4%	4.2%	4.2%	4.2%	4.1%	4.0%	3.7%	3.7%	3.6%	3.5%	4.1%	4.2%	4.3%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.6%	3.4%	3.6%	3.8%	3.4%	3.5%	3.8%	4.1%	4.4%
	30.	3.370	3.370	3.370	3.370	3.370	3.070	3. 170	3.070	3.070	3. 170	3.370	3.070	11.170	-1. 170
	EUR														
	1M	32.7%	31.6%	30.4%	30.4%	29.3%	26.8%	26.5%	26.0%	25.6%	26.3%	27.9%	28.4%	27.8%	31.4%
	3M	28.4%	27.5%	26.5%	25.5%	25.5%	22.7%	22.0%	22.0%	22.4%	22.9%	24.3%	24.8%	24.1%	26.7%
	6M	24.8%	24.0%	23.3%	22.5%	21.8%	19.7%	18.9%	18.5%	18.8%	19.7%	21.7%	22.1%	21.6%	23.4%
	9M	22.9%	22.3%	21.1%	19.9%	19.3%	16.5%	15.6%	15.7%	16.6%	17.3%	20.0%	20.3%	19.9%	20.8%
	1Y	20.0%	19.0%	18.5%	17.5%	16.5%	13.8%	13.3%	13.6%	14.7%	15.6%	18.6%	19.0%	18.4%	18.9%
>_	2Y	13.0%	12.7%	12.1%	11.5%	10.9%	9.6%	9.5%	10.2%	11.2%	11.7%	13.9%	14.4%	13.9%	13.6%
EXPIRY	3Y	10.2%	10.0%	9.8%	9.4%	9.2%	8.6%	8.6%	9.1%	10.0%	10.4%	11.5%	11.8%	11.6%	11.7%
×	5Y	8.5%	8.3%	8.3%	8.2%	8.2%	8.2%	8.3%	8.7%	9.1%	9.4%	9.6%	9.8%	9.9%	10.4%
	7Y	8.0%	8.0%	8.0%	8.0%	8.0%	8.1%	8.2%	8.4%	8.6%	8.9%	9.2%	9.1%	9.3%	9.8%
	10Y	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%	7.9%	8.1%	8.3%	8.4%	8.7%	8.6%	8.9%	9.0%
	15Y	7.6%	7.6%	7.6%	7.6%	7.6%	7.5%	7.7%	7.9%	8.1%	8.1%	8.3%	8.0%	8.1%	8.2%
	20Y	7.5%	7.7%	7.7%	7.7%	7.7%	7.6%	7.5%	7.9%	8.0%	8.1%	8.3%	8.1%	8.1%	8.2%
	30Y	8.1%	8.1%	8.1%	8.1%	8.1%	7.9%	7.8%	7.7%	7.9%	8.1%	8.6%	8.4%	8.8%	8.9%
	301	8.176	8.176	8.176	8.176	8.176	7.576	7.876	7.776	7.576	8.176	8.076	8.476	8.876	8.576
	GBP														
	1M	26.4%	26.4%	26.0%	26.0%	25.6%	22.1%	21.1%	20.8%	19.6%	16.5%	15.8%	16.2%	15.9%	15.8%
	3M	23.6%	23.6%	23.6%	23.3%	23.3%	21.1%	19.6%	17.9%	16.9%	14.6%	14.1%	14.5%	14.2%	14.3%
	6M	23.1%	23.1%	22.8%	22.8%	22.5%	19.4%	18.1%	16.7%	15.8%	13.6%	13.3%	13.7%	13.3%	13.4%
	9M	21.8%	21.5%	21.5%	21.2%	21.2%	18.8%	17.1%	15.4%	14.4%	12.2%	12.2%	12.8%	12.5%	12.3%
	1Y	20.8%	20.8%	20.5%	20.5%	20.3%	17.9%	15.9%	14.4%	13.3%	11.2%	11.3%	11.8%	11.5%	11.3%
>-	2Y	16.4%	16.2%	16.0%	15.8%	15.6%	14.2%	12.7%	10.9%	10.2%	8.5%	8.8%	9.4%	9.1%	8.9%
EXPIRY	3Y	13.9%	13.8%	13.6%	13.4%	13.1%	12.0%	10.9%	9.1%	8.3%	7.1%	7.2%	7.8%	7.6%	7.6%
×	5Y	11.1%	11.0%	10.9%	10.7%	10.5%	9.5%	8.6%	7.1%	6.4%	5.5%	5.5%	5.9%	5.9%	6.0%
ш	7Y	9.2%	9.1%	9.0%	8.8%	8.7%	8.0%	7.3%	6.3%	5.3%	4.8%	4.7%	5.1%	5.1%	5.3%
	10Y	7.1%	7.1%	7.0%	7.0%	6.8%	6.4%	6.1%	5.3%	4.4%	4.1%	4.7%	4.5%	4.7%	4.8%
	15Y	5.1%	5.1%	4.9%	4.9%	4.8%	4.5%	4.3%	3.8%	3.4%	3.3%	3.6%	4.1%	4.1%	4.2%
	20Y	4.0%	4.0%	4.0%	4.0%	3.9%	3.8%	3.7%	3.6%	3.5%	3.2%	3.4%	3.9%	3.9%	4.0%
	30Y	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.5%	3.3%	3.5%	3.7%	3.9%	4.1%
<u> </u>	301	3.470	3.470	3.470	3.470	3.470	3.470	3.470	3.470	3.370	3.370	3.570	3.770	3.570	4.170
	JPY														
	1M	21.2%	21.2%	21.2%	21.2%	21.2%	18.7%	16.8%	15.4%	16.0%	14.2%	11.7%	13.1%	15.2%	17.4%
	3M	17.6%	17.6%	17.6%	16.4%	16.4%	16.1%	13.5%	12.5%	12.9%	11.4%	10.0%	10.8%	13.1%	15.0%
	6M	16.1%	16.1%	16.1%	16.1%	16.1%	14.6%	13.4%	11.5%	12.0%	10.3%	9.1%	10.8%	11.8%	13.5%
	9M	15.4%	15.4%	15.4%	15.4%	15.4%	14.0%	13.4%	11.2%	10.4%	8.8%	8.5%	9.3%	10.5%	12.1%
	1Y	15.1%	15.1%	14.2%	14.2%	14.2%	12.9%	11.2%	10.4%	9.7%	8.2%	8.0%	8.9%	10.1%	11.3%
>-	2Y	12.9%	12.9%	12.9%	12.9%	12.2%	11.1%	9.8%	8.0%	7.7%	6.1%	6.8%	7.5%	8.2%	9.2%
=	3Y	11.5%	10.9%	10.9%	10.9%	10.9%	9.4%	9.8%	6.9%	6.3%	5.1%	5.9%	6.7%	7.0%	8.0%
EXPIRY	5Y	9.1%	9.1%	8.6%	8.6%	8.6%	9.4% 8.0%	6.7%	5.7%	4.9%	4.6%	5.0%	5.3%	5.9%	6.6%
ш	7Y	7.4%	7.4%	7.4%	7.0%	7.0%	6.5%	5.9%	5.7%	4.6%	3.9%	4.4%	4.7%	5.9%	5.6%
	10Y		7.4% 6.1%			7.0% 6.1%			5.2% 4.7%	3.9%		4.4%	4.7%	4.7%	5.6%
		6.5%		6.1%	6.1%		5.6%	5.2%			3.6%				
	15Y	4.9%	4.9%	4.9%	4.6%	4.6%	4.2%	4.2%	3.5%	3.1%	3.0%	3.4%	3.7%	4.0%	4.2%
	20Y	3.8%	3.8%	3.8%	3.8%	3.8%	3.5%	3.5%	3.5%	3.4%	3.0%	3.1%	3.5%	3.7%	3.9%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.7%	3.6%	3.5%	3.6%	3.9%	4.2%	4.4%

Relative Normal Interest Rate Shocks (Continued)

	USD														
	1M	59.9%	59.9%	59.4%	59.0%	59.0%	49.7%	46.1%	48.6%	45.1%	38.2%	35.7%	35.8%	33.6%	32.3%
-	3M	55.1%	54.7%	54.7%	54.4%	54.0%	49.8%	44.8%	44.8%	41.9%	35.9%	34.6%	34.9%	32.9%	32.1%
-								1							
-	6M	48.7%	48.4%	48.1%	47.6%	47.3%	45.0%	40.0%	40.0%	37.5%	32.0%	32.0%	32.5%	31.3%	30.4%
	9M	46.6%	46.3%	45.8%	45.3%	44.8%	42.1%	37.5%	35.5%	33.8%	28.6%	29.6%	30.0%	29.1%	28.1%
_	1Y	43.7%	43.4%	43.0%	42.6%	41.9%	40.6%	35.9%	32.8%	30.7%	26.0%	27.8%	28.5%	27.3%	26.1%
EXPIRY	2Y	36.8%	36.4%	36.1%	35.9%	35.6%	32.7%	28.5%	25.7%	24.1%	20.2%	21.5%	22.5%	21.2%	20.4%
ᆵ	3Y	31.2%	30.9%	30.6%	30.2%	29.7%	27.3%	24.4%	21.4%	19.9%	17.4%	17.2%	18.4%	17.7%	17.4%
<u>~</u>	5Y	24.8%	24.5%	24.1%	23.7%	23.3%	21.6%	19.5%	16.8%	15.4%	13.8%	13.1%	14.0%	13.9%	14.2%
	7Y	20.6%	20.5%	20.1%	19.7%	19.5%	17.9%	16.6%	14.6%	13.0%	12.0%	11.3%	12.0%	12.1%	12.6%
	10Y	16.1%	16.0%	15.9%	15.7%	15.5%	14.8%	13.9%	12.6%	11.0%	10.1%	10.1%	10.9%	10.7%	11.2%
	15Y	11.6%	11.5%	11.5%	11.3%	11.2%	10.8%	10.3%	9.3%	8.7%	8.2%	8.4%	9.3%	9.3%	9.6%
	20Y	9.0%	9.0%	9.0%	8.8%	8.8%	8.8%	8.7%	8.3%	8.0%	7.3%	7.3%	8.3%	8.5%	8.5%
	30Y	7.5%	7.5%	7.5%	7.3%	7.3%	7.2%	7.3%	7.2%	7.4%	7.0%	7.0%	7.5%	7.9%	7.9%
	US MBS Vega Other Advan 1M		nies 33.5%	32.9%	32.9%	32.9%	22.1%	20.4%	18.1%	16.8%	14.5%	13.9%	14.1%	14.0%	14.0%
-	3M	31.6%	31.2%	31.2%	31.2%	30.7%	21.2%	19.1%	17.2%	16.0%	13.8%		13.8%	13.4%	13.5%
-	6M			25.2%			19.4%		16.1%		13.0%	13.4% 12.6%	13.1%		13.5%
-	9M	25.5% 23.0%	25.2% 23.0%	25.2%	24.8% 22.7%	24.8% 22.4%	19.4%	17.9% 17.1%	15.3%	15.1% 14.4%	13.0%	12.6%	13.1%	12.8% 12.3%	12.8%
-								1							
>	1Y	20.7%	20.7%	20.5%	20.3%	20.0%	18.0%	16.4%	14.5%	13.6%	11.3%	11.6%	12.1%	11.8%	11.7%
EXPIRY	2Y	16.9%	16.8%	16.6%	16.4%	16.2%	14.5%	12.9%	11.3%	10.5%	8.7%	9.3%	9.8%	9.5%	9.3%
2	3Y	14.6%	14.4%	14.3%	14.1%	13.9%	12.1%	10.9%	9.4%	8.7%	7.3%	7.7%	8.2%	7.9%	7.9%
100 E	5Y	11.6%	11.5%	11.3%	11.0%	10.9%	9.9%	9.0%	7.5%	6.6%	5.9%	5.9%	6.2%	6.3%	6.3%
-	7Y	9.6%	9.5%	9.3%	9.2%	9.0%	8.2%	7.7%	6.5%	5.7%	5.1%	5.1%	5.4%	5.5%	5.6%
	10Y	7.7%	7.7%	7.5%	7.5%	7.4%	7.0%	6.6%	5.8%	4.7%	4.4%	4.6%	5.0%	4.9%	5.2%
	15Y	5.5%	5.3%	5.3%	5.2%	5.2%	4.9%	4.6%	4.0%	3.6%	3.5%	4.0%	4.3%	4.3%	4.5%
	20Y	4.4%	4.4%	4.2%	4.2%	4.2%	4.1%	4.0%	3.7%	3.7%	3.6%	3.5%	4.1%	4.2%	4.3%
	30Y	3.5%	3.5%	3.5%	3.5%	3.5%	3.6%	3.4%	3.6%	3.8%	3.4%	3.5%	3.8%	4.1%	4.4%
	Total Emergi														
-	1M	14.3%	13.9%	13.9%	13.9%	13.9%	15.0%	14.4%	13.4%	12.7%	11.1%	10.5%	10.8%	10.5%	10.4%
	1M 3M	14.3% 14.7%	14.7%	14.7%	14.3%	14.3%	14.9%	13.9%	12.9%	12.2%	10.7%	10.2%	10.6%	10.3%	10.2%
	1M 3M 6M	14.3%	14.7% 15.0%	14.7% 14.7%	14.3% 14.7%	14.3% 14.7%	14.9% 14.7%	13.9% 13.5%	12.9% 12.2%		10.7% 10.1%	10.2% 9.6%	10.6% 10.1%	10.3% 9.8%	10.2% 9.6%
	1M 3M 6M 9M	14.3% 14.7% 15.0% 14.9%	14.7% 15.0% 14.9%	14.7% 14.7% 14.6%	14.3% 14.7% 14.6%	14.3% 14.7% 14.4%	14.9% 14.7% 14.3%	13.9% 13.5% 13.0%	12.9% 12.2% 11.8%	12.2% 11.7% 11.1%	10.7% 10.1% 9.3%	10.2% 9.6% 9.3%	10.6% 10.1% 9.6%	10.3% 9.8% 9.2%	10.2% 9.6% 9.0%
	1M 3M 6M	14.3% 14.7% 15.0%	14.7% 15.0%	14.7% 14.7%	14.3% 14.7%	14.3% 14.7%	14.9% 14.7%	13.9% 13.5%	12.9% 12.2%	12.2% 11.7%	10.7% 10.1%	10.2% 9.6%	10.6% 10.1%	10.3% 9.8%	10.2% 9.6%
RY	1M 3M 6M 9M	14.3% 14.7% 15.0% 14.9%	14.7% 15.0% 14.9%	14.7% 14.7% 14.6%	14.3% 14.7% 14.6%	14.3% 14.7% 14.4%	14.9% 14.7% 14.3%	13.9% 13.5% 13.0%	12.9% 12.2% 11.8%	12.2% 11.7% 11.1%	10.7% 10.1% 9.3%	10.2% 9.6% 9.3%	10.6% 10.1% 9.6%	10.3% 9.8% 9.2%	10.2% 9.6% 9.0%
PIRY	1M 3M 6M 9M 1Y	14.3% 14.7% 15.0% 14.9% 14.6%	14.7% 15.0% 14.9% 14.6%	14.7% 14.7% 14.6% 14.6%	14.3% 14.7% 14.6% 14.3%	14.3% 14.7% 14.4% 14.3%	14.9% 14.7% 14.3% 13.7%	13.9% 13.5% 13.0% 12.4%	12.9% 12.2% 11.8% 11.1%	12.2% 11.7% 11.1% 10.5%	10.7% 10.1% 9.3% 8.8%	10.2% 9.6% 9.3% 8.8%	10.6% 10.1% 9.6% 9.4%	10.3% 9.8% 9.2% 8.8%	10.2% 9.6% 9.0% 8.7%
EXPIRY	1M 3M 6M 9M 1Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5%	14.7% 15.0% 14.9% 14.6% 12.5%	14.7% 14.7% 14.6% 14.6% 12.3%	14.3% 14.7% 14.6% 14.3% 12.0%	14.3% 14.7% 14.4% 14.3% 12.0%	14.9% 14.7% 14.3% 13.7% 11.6%	13.9% 13.5% 13.0% 12.4% 10.6%	12.9% 12.2% 11.8% 11.1% 9.3%	12.2% 11.7% 11.1% 10.5% 8.5%	10.7% 10.1% 9.3% 8.8% 7.1%	10.2% 9.6% 9.3% 8.8% 7.4%	10.6% 10.1% 9.6% 9.4% 7.9%	10.3% 9.8% 9.2% 8.8% 7.4%	10.2% 9.6% 9.0% 8.7% 7.3%
EXPIRY	1M 3M 6M 9M 1Y 2Y 3Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2%
EXPIRY	1M 3M 6M 9M 1Y 2Y 3Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.8%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2%
EXPIRY	1M 3M 6M 9M 1Y 2Y 3Y 5Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.8%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2% 4.6%
EXPIRY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5% 4.5%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.8% 4.1% 3.8%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1%
EXPIRY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5% 4.5% 3.5%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.8% 4.1% 3.8% 3.3%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% & Caribbean	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1%	12.9% 12.2% 11.8% 11.18% 11.176 9.3% 7.9% 6.44% 5.5% 4.55% 3.5% 3.0% 3.2%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2%	10.7% 10.1% 9.3% 8.8% 7.11% 6.0% 4.8% 4.2% 3.65% 3.00% 2.7% 3.0%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.11% 4.5% 4.0% 3.6% 3.3% 3.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.4% 3.6%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.7%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y	14.3% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% & Caribbean 20.6%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.11% 2.9%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 2.9%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 3.1%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5% 4.5% 3.5% 3.0% 3.2%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.3% 3.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.6% 3.6%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.5%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 3M	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9%	14.7% 14.7% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 2.9%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9%	14.3% 14.7% 14.4% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 2.9%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.1% 17.8% 15.8%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 3.1%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5% 4.5% 3.5% 3.0% 3.2%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.8% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.5% 11.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.6% 3.4% 3.6%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.7%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 6 1M 3M 6M	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.99% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3% 17.1%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 15.3% 14.6%	12.9% 12.2% 11.8% 11.189 9.3% 7.9% 6.4% 5.5% 4.5% 3.5% 3.0% 3.2%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3% 11.8% 9.6%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.3% 3.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.6% 3.6% 3.6% 11.3% 12.0% 9.7%	10.2% 9.6% 9.6% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 6 3M 6M 9M	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3% 17.1% 16.7%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.11% 2.9% 20.4% 18.1% 17.0% 16.5%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 15.8% 16.2% 15.4%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 15.3% 14.6% 13.9%	12.9% 12.2% 11.8% 11.189 9.3% 7.9% 6.4% 5.5% 4.5% 3.5% 3.0% 3.2% 15.1% 12.9% 12.8% 12.1%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 2.8% 3.2% 14.0% 12.8% 11.8% 11.8%	10.7% 10.1% 9.3% 8.8% 7.19% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3% 11.3% 11.8% 9.6% 9.6%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.3% 3.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.6% 3.14% 3.6% 11.3% 12.0% 9.7%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 4.6% 4.1% 3.5% 3.7% 3.5% 3.7%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 6 6M 3M 6M 9M 1Y	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8. Caribbean 20.6% 18.3% 17.1% 16.7% 16.7%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 2.9% 20.5% 18.3% 17.2% 16.7%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 7.5% 7.5% 2.9% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 5.7% 4.3% 2.9% 20.4% 18.1% 17.0% 16.5% 15.8%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 2.9% 20.3% 18.0% 16.7% 16.3%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.1% 17.8% 15.8% 16.2% 15.4% 14.5%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 14.6% 14.6% 13.9% 13.1%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5% 4.5% 3.5% 3.0% 3.2% 15.1% 12.9% 12.1% 11.4%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 12.8% 11.8% 11.4% 10.7%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 4.1% 3.3% 2.9% 3.1% 11.3% 11.3% 9.6% 9.6% 9.2%	10.6% 10.1% 9.6% 9.44% 7.9% 6.7% 4.5% 4.0% 3.6% 3.33% 3.5% 11.5% 12.2% 10.0% 9.9% 9.6%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.6% 3.4% 3.6% 11.3% 12.0% 9.7% 9.7% 9.4%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 4.6% 4.1% 3.7% 3.5% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 9.2%
RY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 4 1M 3M 6M 9M 1Y 2Y	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3% 17.1% 16.7% 16.7% 13.9%	14.7% 15.0% 14.46% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 18.3% 17.2% 16.7% 16.0% 13.8%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9% 13.7%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.33% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 15.8% 13.6%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9% 20.3% 18.0% 16.7% 16.3% 15.5% 13.6%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 14.5% 12.2%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 14.6% 13.9% 13.1% 11.2%	12.9% 12.2% 11.18% 11.11% 9.33% 7.9% 6.44% 5.55% 4.55% 3.55% 3.0% 3.2% 15.1% 12.9% 12.8% 12.1% 12.1% 9.7%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 12.8% 11.8% 11.4% 9.1%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 7.5%	10.2% 9.6% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3% 11.8% 9.6% 9.6% 9.2% 7.8%	10.6% 10.1% 9.6% 9.44% 7.9% 6.7% 5.11% 4.5% 4.0% 3.6% 3.3% 1.5% 11.5% 12.2% 10.0% 9.9% 8.3%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.6% 3.6% 3.6% 11.3% 12.0% 9.7% 9.7% 9.7% 9.4% 8.0%	10.2% 9.6% 9.6% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 9.2% 7.8%
RY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 6 6M 9M 1Y 2Y 3Y	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3% 17.1% 16.7% 16.7% 16.0% 13.9% 12.3%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 18.3% 17.2% 16.7% 16.0% 13.8% 12.2%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 5.7% 4.5% 3.1% 2.9% 20.5% 17.1% 16.7% 15.9% 12.1%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 15.8% 13.6% 12.0%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 5.7% 4.3% 3.1% 2.9% 20.3% 16.7% 16.3% 15.5% 11.5% 11.9%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 15.4% 14.5% 12.2% 10.8%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 15.9% 15.3% 14.6% 13.9% 13.1% 13.1% 9.8%	12.9% 12.2% 11.8% 11.189 11.196 9.3% 7.9% 6.498 5.5% 4.5% 3.5% 3.0% 3.2% 15.1% 12.9% 12.8% 12.1% 11.4% 9.7% 8.4%	12.2% 11.7% 11.11/4 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 12.8% 11.8% 11.4% 10.7% 9.11% 7.8%	10.7% 10.1% 10.1% 9.3% 8.8% 7.11% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 6.6%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 2.9% 3.1% 11.3% 11.3% 11.8% 9.6% 9.6% 9.2% 7.8% 6.8%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.3% 1.5% 11.5% 12.2% 10.0% 9.9% 9.63% 8.3% 7.3%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.4% 3.6% 11.3% 12.0% 9.7% 9.7% 9.4% 8.0% 7.1%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 9.2% 7.8%
-	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 6 6M 3M 6M 1Y 2Y 3Y 5Y 3Y 5Y 3Y 5Y	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.99% 8 Caribbean 20.6% 18.3% 17.1% 16.0% 13.9% 16.0% 13.9% 10.6%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 18.3% 17.2% 16.7% 16.0% 13.8% 12.2% 10.6%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9% 13.7% 10.4%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 15.8% 13.6% 12.0% 10.2%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9% 20.3% 18.0% 16.7% 16.3% 15.5% 13.6% 11.9% 10.1%	14.9% 14.7% 14.3% 13.7% 10.3% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 14.5% 12.2% 10.8% 9.2%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 14.6% 13.9% 13.1% 11.2% 9.8% 8.3%	12.9% 12.2% 11.8% 11.1% 9.3% 7.9% 6.4% 5.5% 4.5% 3.5% 3.0% 3.2% 15.1% 12.9% 12.1% 11.4% 9.7% 8.4% 7.0%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 12.8% 11.4% 10.7% 9.1% 6.1%	10.7% 10.1% 9.3% 8.8% 7.1% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 7.5% 6.6% 5.4%	10.2% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3% 11.8% 9.6% 9.6% 9.6% 9.2% 7.8% 6.8% 6.8%	10.6% 10.1% 9.6% 9.44% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.33% 3.5% 11.5% 12.2% 10.0% 9.9% 9.6% 8.3% 7.3% 5.8%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.6% 3.4% 3.6% 11.3% 12.0% 9.7% 9.7% 9.4% 8.0% 7.1% 5.7%	10.2% 9.6% 9.0% 8.7% 7.3% 6.2% 4.6% 4.1% 3.7% 3.5% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 9.2% 7.8% 7.0% 5.29
RY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 6M 9M 1Y 2Y 3Y 5Y 7Y	14.3% 14.7% 14.7% 14.6% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3% 17.1% 16.0% 13.9% 12.3% 10.6% 9.1%	14.7% 15.0% 14.46% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 18.3% 17.2% 16.7% 16.0% 13.8% 12.2% 10.6% 9.0%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9% 13.7% 10.4% 8.9%	14.3% 14.7% 14.4.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.33% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 13.6% 12.0% 10.2% 8.7%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9% 20.3% 18.0% 16.7% 16.3% 11.9% 10.1% 8.6%	14.9% 14.7% 14.7% 11.6% 13.7% 11.6% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 12.2% 10.8% 9.2% 8.0%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 14.6% 13.9% 14.6% 13.9% 11.2% 9.8% 8.3% 7.4%	12.9% 12.2% 11.18% 11.11% 9.33% 7.99% 6.44% 5.55% 4.55% 3.55% 3.2% 15.11% 12.9% 12.8% 12.14% 9.7% 8.44% 7.0% 6.13%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 11.8% 11.4% 10.7% 9.1% 7.8% 6.1% 5.3%	10.7% 10.1% 10.1% 9.3% 8.8% 7.11% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 7.5% 6.6% 4.7%	10.2% 9.6% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3% 11.8% 9.6% 9.6% 9.6% 9.6% 9.6% 9.6% 9.5% 6.8% 6.8%	10.6% 10.1% 9.6% 9.44% 7.9% 6.7% 5.11% 4.5% 4.0% 3.6% 3.3% 3.5% 11.5% 12.2% 10.0% 9.9% 8.3% 7.3% 5.8% 5.0%	10.3% 9.8% 9.8% 8.88% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.4% 3.6% 11.3% 12.0% 9.7% 9.7% 9.7% 9.7% 5.7% 5.0%	10.2% 9.6% 9.6% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 7.8% 7.0% 5.9% 5.2%
RY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 109 15Y 200 30Y Total Latam 8 1M 9M 1Y 2Y 3Y 5Y 7Y 100	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8. Caribbean 20.6% 18.3% 17.1% 16.7% 16.0% 12.3% 10.6% 9.1% 7.2%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 16.7% 16.0% 16.0% 17.2% 10.6% 9.0% 7.2%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9% 12.1% 10.4% 8.9% 7.1%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 15.8% 12.0% 10.2% 8.7% 7.0%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9% 20.3% 18.0% 16.7% 16.3% 11.9% 10.1% 8.6% 6.8%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 15.4% 14.5% 10.8% 9.2% 8.0% 6.5%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 15.9% 15.3% 14.6% 13.9% 13.1% 9.8% 8.3% 7.4% 6.2%	12.9% 12.2% 11.8% 11.18% 11.11% 9.33% 7.9% 6.44% 5.55% 4.55% 3.0% 3.2% 15.1% 12.9% 12.8% 12.1% 11.4% 9.77% 8.4% 7.0% 6.11% 5.33%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 12.8% 11.8% 11.4% 10.7% 9.1% 7.8% 6.1% 5.3% 4.5%	10.7% 10.1% 10.1% 9.3% 8.8% 7.11% 6.0% 4.8% 4.2% 3.65% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 6.6% 5.4% 4.7% 4.0%	10.2% 9.6% 9.68 8.88 7.4% 6.3% 4.1% 3.88 2.9% 3.1% 11.3% 11.3% 11.8% 9.6% 9.6% 9.2% 5.4% 6.8% 5.4% 4.6% 4.2%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.3% 3.5% 11.5% 12.2% 10.0% 9.9% 9.63% 7.3% 5.8% 5.0% 4.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.4% 11.3% 12.0% 9.7% 9.7% 9.7% 9.4% 5.7% 5.0% 4.6%	10.2% 9.6% 9.6% 8.7% 7.3% 6.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 9.2% 7.8% 7.0% 5.2% 4.8%
RY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 6M 9M 1Y 2Y 3Y 5Y 7Y	14.3% 14.7% 14.7% 14.6% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8 Caribbean 20.6% 18.3% 17.1% 16.0% 13.9% 12.3% 10.6% 9.1%	14.7% 15.0% 14.46% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 18.3% 17.2% 16.7% 16.0% 13.8% 12.2% 10.6% 9.0%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9% 13.7% 10.4% 8.9%	14.3% 14.7% 14.4.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.33% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 13.6% 12.0% 10.2% 8.7%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9% 20.3% 18.0% 16.7% 16.3% 11.9% 10.1% 8.6%	14.9% 14.7% 14.7% 11.6% 13.7% 11.6% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 12.2% 10.8% 9.2% 8.0%	13.9% 13.5% 13.5% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 3.1% 15.9% 14.6% 13.9% 14.6% 13.9% 11.2% 9.8% 8.3% 7.4%	12.9% 12.2% 11.18% 11.11% 9.33% 7.99% 6.44% 5.55% 4.55% 3.55% 3.2% 15.11% 12.9% 12.8% 12.14% 9.7% 8.44% 7.0% 6.13%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 11.8% 11.4% 10.7% 9.1% 7.8% 6.1% 5.3%	10.7% 10.1% 10.1% 9.3% 8.8% 7.11% 6.0% 4.8% 4.2% 3.6% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 7.5% 6.6% 4.7%	10.2% 9.6% 9.6% 9.3% 8.8% 7.4% 6.3% 4.1% 3.8% 3.3% 2.9% 3.1% 11.3% 11.8% 9.6% 9.6% 9.6% 9.6% 9.6% 9.6% 9.5% 6.8% 6.8%	10.6% 10.1% 9.6% 9.44% 7.9% 6.7% 5.11% 4.5% 4.0% 3.6% 3.3% 3.5% 11.5% 12.2% 10.0% 9.9% 8.3% 7.3% 5.8% 5.0%	10.3% 9.8% 9.8% 8.88% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.4% 3.6% 11.3% 12.0% 9.7% 9.7% 9.7% 9.7% 5.7% 5.0%	10.2% 9.6% 9.6% 8.7% 7.3% 6.2% 5.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 7.8% 7.0% 5.2%
RY	1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y 109 15Y 200 30Y Total Latam 8 1M 9M 1Y 2Y 3Y 5Y 7Y 100	14.3% 14.7% 14.7% 15.0% 14.9% 14.6% 12.5% 11.3% 9.7% 7.7% 5.9% 4.5% 3.3% 2.9% 8. Caribbean 20.6% 18.3% 17.1% 16.7% 16.0% 12.3% 10.6% 9.1% 7.2%	14.7% 15.0% 14.9% 14.6% 12.5% 11.1% 9.5% 7.7% 5.9% 4.5% 3.3% 2.9% 20.5% 16.7% 16.0% 16.0% 17.2% 10.6% 9.0% 7.2%	14.7% 14.7% 14.6% 14.6% 12.3% 11.1% 9.5% 7.5% 5.7% 4.5% 3.1% 2.9% 20.5% 18.2% 17.1% 16.7% 15.9% 12.1% 10.4% 8.9% 7.1%	14.3% 14.7% 14.6% 14.3% 12.0% 10.9% 9.3% 7.5% 5.7% 4.3% 3.1% 2.9% 20.4% 18.1% 17.0% 16.5% 15.8% 12.0% 10.2% 8.7% 7.0%	14.3% 14.7% 14.4% 14.3% 12.0% 10.6% 9.1% 7.3% 5.7% 4.3% 3.1% 2.9% 20.3% 18.0% 16.7% 16.3% 11.9% 10.1% 8.6% 6.8%	14.9% 14.7% 14.3% 13.7% 11.6% 10.3% 8.8% 7.1% 5.5% 4.2% 3.2% 3.1% 17.8% 15.8% 16.2% 15.4% 14.5% 10.8% 9.2% 8.0% 6.5%	13.9% 13.5% 13.0% 12.4% 10.6% 9.2% 7.8% 6.7% 5.3% 4.0% 3.1% 15.9% 15.3% 14.6% 13.9% 13.1% 9.8% 8.3% 7.4% 6.2%	12.9% 12.2% 11.8% 11.18% 11.11% 9.33% 7.9% 6.44% 5.55% 4.55% 3.0% 3.2% 15.1% 12.9% 12.8% 12.1% 11.4% 9.77% 8.4% 7.0% 6.11% 5.33%	12.2% 11.7% 11.1% 10.5% 8.5% 7.2% 5.5% 4.7% 3.9% 3.0% 2.8% 3.2% 14.0% 12.8% 11.8% 11.4% 10.7% 9.1% 7.8% 6.1% 5.3% 4.5%	10.7% 10.1% 10.1% 9.3% 8.8% 7.11% 6.0% 4.8% 4.2% 3.65% 3.0% 2.7% 3.0% 11.9% 12.2% 9.8% 9.5% 9.1% 6.6% 5.4% 4.7% 4.0%	10.2% 9.6% 9.68 8.88 7.4% 6.3% 4.1% 3.88 2.9% 3.1% 11.3% 11.3% 11.8% 9.6% 9.6% 9.2% 5.4% 6.8% 5.4% 4.6% 4.2%	10.6% 10.1% 9.6% 9.4% 7.9% 6.7% 5.1% 4.5% 4.0% 3.6% 3.3% 3.5% 11.5% 12.2% 10.0% 9.9% 9.63% 7.3% 5.8% 5.0% 4.5%	10.3% 9.8% 9.2% 8.8% 7.4% 6.3% 5.0% 4.5% 3.9% 3.6% 3.4% 11.3% 12.0% 9.7% 9.7% 9.7% 9.4% 5.7% 5.0% 4.6%	10.2% 9.6% 9.6% 8.7% 7.3% 6.2% 4.6% 4.1% 3.7% 3.5% 3.7% 11.4% 12.0% 9.7% 9.5% 9.2% 7.8% 7.0% 5.2% 4.8%

Relative Normal Interest Rate Shocks (Continued)

1M 17.5% 17.5% 17.5% 17.7% 16.3% 16.0% 15.2% 14.7% 13.0% 12.8% 13.6%		13.7%
3M 17.5% 17.5% 17.5% 17.5% 17.8% 16.5% 16.3% 14.5% 14.0% 11.6% 11.7% 12.2%		12.3%
6M 16.6% 16.6% 16.6% 16.6% 16.6% 15.8% 14.7% 13.7% 13.1% 11.0% 11.1% 11.9%	11.5%	11.6%
9M 16.0% 16.0% 16.0% 16.0% 16.0% 15.4% 14.4% 13.2% 12.5% 10.5% 10.6% 11.1%		10.8%
1Y 15.5% 15.5% 15.5% 15.3% 15.3% 14.1% 13.3% 12.2% 11.6% 9.7% 10.0% 10.7%	10.4%	10.3%
2Y 13.2% 13.2% 13.0% 13.0% 11.9% 11.2% 10.0% 9.6% 7.9% 8.3% 9.1%	8.7%	8.5%
3Y 12.6% 12.4% 12.4% 12.2% 12.0% 11.2% 10.1% 8.6% 7.9% 6.7% 6.9% 7.5% 5Y 11.0% 10.8% 10.6% 10.2% 9.8% 9.0% 7.2% 6.4% 5.5% 5.6% 6.0%	7.4%	7.5%
5Y 11.0% 10.8% 10.8% 10.6% 10.2% 9.8% 9.0% 7.2% 6.4% 5.5% 5.6% 6.0%	6.0%	6.0%
7Y 9.9% 9.7% 9.5% 9.3% 9.1% 8.5% 8.1% 6.5% 5.4% 4.9% 4.8% 5.1%	5.3%	5.5%
10Y 7.7% 7.5% 7.5% 7.3% 7.1% 7.4% 6.6% 5.7% 4.6% 4.1% 4.3% 4.7%	4.9%	5.0%
15Y 5.6% 5.4% 5.4% 5.2% 5.4% 4.6% 4.1% 3.6% 3.4% 3.9% 4.2%	4.3%	4.5%
20Y 4.4% 4.4% 4.4% 4.1% 4.7% 4.1% 3.8% 3.8% 3.5% 3.4% 4.2%	4.0%	4.1%
30Y 3.6% 3.6% 3.6% 3.6% 4.1% 3.5% 3.7% 3.8% 3.4% 3.6% 4.2%	4.3%	4.4%
	•	
Total ME/N. Africa		
1M 16.9% 16.9% 16.9% 16.9% 14.3% 13.5% 13.0% 13.1% 11.9% 11.1% 11.6%		11.4%
3M 16.1% 16.1% 16.1% 16.1% 13.4% 12.8% 12.6% 12.5% 11.4% 10.8% 11.3%		11.0%
6M 15.2% 15.2% 15.2% 15.2% 13.5% 12.2% 12.1% 12.0% 10.7% 10.3% 10.7%		10.4%
9M 14.3% 14.3% 13.0% 12.6% 11.6% 11.4% 11.2% 9.9% 9.8% 10.3%		10.0%
1Y 13.6% 13.6% 12.6% 12.6% 11.9% 11.2% 11.1% 10.8% 9.3% 9.4% 9.9%	9.6%	9.5%
2Y 11.2% 11.2% 11.2% 10.7% 10.3% 10.1% 9.2% 8.9% 7.6% 7.8% 8.4%	8.1%	7.8%
ZY 11.2% 11.2% 11.2% 10.7% 10.3% 10.1% 9.2% 8.9% 7.6% 7.8% 8.4% 3Y 10.7% 10.4% 10.1% 10.1% 9.9% 9.3% 8.1% 7.7% 6.4% 6.6% 7.2% 5Y 10.3% 10.1% 9.9% 9.8% 9.0% 8.2% 6.9% 6.0% 5.2% 5.2% 5.6%	7.0%	6.9%
	5.6%	5.7%
7Y 9.0% 8.9% 8.8% 8.6% 8.5% 7.9% 7.3% 6.1% 5.1% 4.6% 4.6% 4.9%	4.9%	5.1%
10Y 6.9% 6.9% 6.8% 6.7% 6.7% 6.3% 5.7% 4.9% 4.2% 3.9% 4.1% 4.4%	4.5%	4.7%
15Y 5.1% 4.9% 4.9% 4.8% 4.7% 4.6% 4.2% 3.7% 3.3% 3.3% 3.7% 4.0%	4.1%	4.1%
20Y 3.9% 3.9% 3.9% 3.9% 3.7% 3.8% 3.6% 3.5% 3.3% 3.2% 3.3% 3.7%	3.8%	4.0%
30Y 3.4% 3.2% 3.2% 3.2% 3.2% 3.2% 3.5% 3.6% 3.4% 3.5% 3.7%	4.1%	4.2%
Total Sub-Saharan Africa		
1M 14.7% 14.7% 14.6% 14.5% 14.4% 11.9% 10.7% 11.3% 10.9% 9.2% 8.5% 8.8%	8.6%	8.6%
3M 9.6% 9.5% 9.4% 9.4% 9.3% 9.2% 8.4% 9.2% 9.2% 7.9% 8.1% 8.4%	8.2%	8.1%
6M 10.0% 10.0% 9.9% 9.8% 9.8% 10.1% 9.2% 9.9% 9.5% 8.0% 8.3% 8.6%	8.4%	8.3%
9M 10.9% 10.9% 10.8% 10.7% 10.6% 10.9% 9.8% 10.0% 9.6% 8.0% 8.4% 8.7%	8.5%	8.4%
1Y 11.5% 11.4% 11.4% 11.2% 11.2% 10.3% 9.9% 9.5% 7.8% 8.3% 8.7%	8.4%	8.2%
	7.3%	7.2%
3Y 10.8% 10.7% 10.6% 10.4% 10.2% 9.4% 8.6% 7.5% 6.9% 5.8% 6.3% 6.8%	6.6%	6.4%
ZY 11.6% 11.5% 11.4% 11.3% 11.1% 10.2% 9.4% 8.5% 8.0% 6.5% 7.1% 7.6% 3Y 10.8% 10.7% 10.6% 10.4% 10.2% 9.4% 8.6% 7.5% 6.9% 5.8% 6.3% 6.8% 5Y 9.8% 9.8% 9.6% 9.4% 9.3% 8.5% 7.7% 6.4% 5.6% 4.9% 5.1% 5.6%	5.5%	5.6%
7Y 8.6% 8.5% 8.4% 8.2% 8.1% 7.5% 6.9% 5.9% 5.0% 4.5% 4.6% 4.9%	5.0%	5.2%
10Y 7.1% 7.1% 7.0% 6.9% 6.8% 6.4% 6.0% 5.2% 4.4% 4.1% 4.3% 4.7%	4.8%	5.0%
15Y 5.4% 5.3% 5.3% 5.2% 5.2% 4.6% 4.5% 3.8% 3.3% 3.4% 3.8% 4.2%	4.2%	4.4%
20Y 4.2% 4.1% 4.1% 4.0% 3.9% 3.8% 3.6% 3.5% 3.3% 3.5% 4.0%	4.0%	4.2%
30Y 3.6% 3.6% 3.6% 3.6% 3.6% 3.5% 3.5% 3.7% 3.7% 3.6% 3.6% 4.1%	4.3%	4.2%

Absolute Normal Interest Rate Shocks

Rates Vega
Absolute Normal Interest Rate Shocks (bps)

								MATU	IBITY						
		1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	25Y	30Y
	AUD	2.0.	5	0.00	3.01				<u> </u>	, ,	10.	10.		23.	50.
	1M	5.9	5.9	5.8	5.8	5.8	6.8	7.5	7.9	8.1	7.4	7.2	7.3	7.2	7.1
	3M	7.2	7.1	7.1	7.1	7.0	7.6	8.0	8.1	8.1	7.4	7.2	7.4	7.2	7.1
	6M	8.0	7.9	7.9	7.8	7.8	7.9	8.1	8.0	7.9	7.2	7.0	7.2	7.0	6.9
	9M	8.5	8.5	8.4	8.4	8.3	8.3	8.3	7.9	7.8	6.9	6.9	7.1	6.8	6.6
	1Y	9.2	9.2	9.1	9.0	8.9	8.9	8.6	7.8	7.6	6.7	6.7	6.9	6.6	6.3
EXPIRY	2Y	9.8	9.7	9.6	9.5	9.4	8.8	7.9	6.8	6.4	5.4	5.6	5.7	5.4	4.9
ᆵ	3Y	9.0	8.9	8.8	8.7	8.6	7.7	6.9	5.8	5.4	4.6	4.6	4.8	4.4	4.1
<u>~</u>	5Y	7.7	7.6	7.5	7.3	7.2	6.5	5.9	4.7	4.2	3.7	3.5	3.5	3.3	3.0
	7Y	6.4	6.3	6.2	6.1	6.0	5.4	5.0	4.1	3.5	3.1	2.9	2.9	2.7	2.5
	10Y	5.1	5.1	5.0	5.0	4.9	4.6	4.3	3.6	2.9	2.6	2.5	2.5	2.2	2.1
	15Y	3.5	3.4	3.4	3.3	3.3	3.1	2.9	2.4	2.1	2.0	2.0	1.9	1.7	1.6
	20Y	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.2	2.1	1.9	1.5	1.5	1.4	1.3
	30Y	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.0	0.9	0.9	0.9	0.9
	EUR														
	1M	2.9	2.8	2.7	2.7	2.6	3.5	4.7	6.9	7.9	8.5	9.6	10.0	10.0	11.5
	3M	2.9	2.8	2.7	2.6	2.6	3.4	4.5	6.7	7.7	8.3	9.4	9.8	9.7	10.9
	6M	3.3	3.2	3.1	3.0	2.9	3.6	4.5	6.3	7.2	8.0	9.3	9.6	9.4	10.2
	9M	3.8	3.7	3.5	3.3	3.2	3.7	4.4	5.9	6.9	7.6	9.1	9.4	9.2	9.6
	1Y	4.0	3.8	3.7	3.5	3.3	3.7	4.3	5.5	6.5	7.3	8.9	9.2	8.9	9.1
EXPIRY	2Y	4.4	4.3	4.1	3.9	3.7	3.8	4.2	5.0	5.8	6.3	7.5	7.8	7.5	7.3
=	3Y	4.8	4.7	4.6	4.4	4.3	4.3	4.5	5.1	5.7	6.1	6.6	6.8	6.6	6.6
EX	5Y	5.2	5.1	5.1	5.0	5.0	5.1	5.2	5.5	5.8	6.0	5.9	5.9	5.8	6.0
	7Y	5.3	5.3	5.3	5.3	5.3	5.4	5.5	5.6	5.7	5.9	5.7	5.5	5.4	5.6
	10Y	5.2	5.2	5.2	5.2	5.2	5.3	5.4	5.5	5.6	5.6	5.4	5.1	5.1	5.0
	15Y	4.9	4.9	4.9	4.9	4.9	4.9	5.0	5.1	5.2	5.1	4.8	4.3	4.2	4.1
	20Y	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.8	4.8	4.7	4.4	4.0	3.8	3.7
	30Y	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.1	4.1	4.0	3.9	3.5	3.5	3.4
	GBP														
	1M	6.7	6.7	6.6	6.6	6.5	7.7	8.6	9.3	9.3	8.0	7.6	7.7	7.5	7.4
	3M	7.0	7.0	7.0	6.9	6.9	7.8	8.5	8.9	9.0	7.8	7.5	7.6	7.3	7.3
	6M	7.1	7.1	7.0	7.0	6.9	7.7	8.2	8.6	8.7	7.6	7.4	7.5	7.2	7.2
	9M	7.2	7.1	7.1	7.0	7.0	7.8	8.1	8.3	8.3	7.2	7.1	7.3	7.1	6.9
	1Y	7.5	7.5	7.4	7.4	7.3	7.9	7.9	8.1	8.0	6.9	6.9	7.1	6.8	6.6
~	2Y	8.2	8.1	8.0	7.9	7.8	7.9	7.5	7.0	6.8	5.7	5.8	6.1	5.8	5.6
EXPIRY	3Y	8.5	8.4	8.3	8.2	8.0	7.7	7.2	6.3	5.8	4.9	4.9	5.2	5.0	4.9
EX	5Y	8.2	8.1	8.0	7.9	7.7	7.0	6.3	5.2	4.6	3.9	3.8	4.0	3.9	3.9
	7Y	7.2	7.1	7.0	6.9	6.8	6.1	5.5	4.6	3.8	3.4	3.2	3.4	3.3	3.4
	10Y	5.5	5.5	5.4	5.4	5.3	4.8	4.5	3.8	3.1	2.8	2.8	2.9	2.9	2.9
	15Y	3.7	3.7	3.6	3.6	3.5	3.2	3.0	2.5	2.2	2.1	2.2	2.4	2.3	2.3
	20Y	2.7	2.7	2.7	2.7	2.6	2.5	2.4	2.2	2.1	1.9	1.9	2.1	2.0	2.0
	30Y	2.1	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8
	JPY														
	1M	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4	1.7	1.7	1.8	2.4	2.8	3.2
	3M	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.4	1.7	1.7	1.8	2.3	2.8	3.2
	6M	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.7	1.7	1.8	2.3	2.7	3.1
	9M	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.5	1.6	1.6	1.8	2.3	2.6	3.0
_	1Y	1.7	1.7	1.6	1.6	1.6	1.5	1.4	1.5	1.6	1.6	1.8	2.3	2.6	2.9
۳	2Y	1.8	1.8	1.8	1.8	1.7	1.6	1.5	1.4	1.5	1.4	1.7	2.1	2.3	2.6
EXPI	3Y	1.9	1.8	1.8	1.8	1.8	1.6	1.5	1.4	1.4	1.3	1.6	2.0	2.1	2.4
Œ	5Y	1.9	1.9	1.8	1.8	1.8	1.7	1.5	1.4	1.3	1.3	1.5	1.7	1.9	2.1
	7Y	1.8	1.8	1.8	1.7	1.7	1.6	1.5	1.4	1.3	1.2	1.4	1.6	1.7	1.9
	10Y	1.8	1.7	1.7	1.7	1.7	1.6	1.5	1.4	1.2	1.2	1.4	1.6	1.7	1.8
	15Y	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.2	1.1	1.1	1.3	1.5	1.6	1.7
	20Y 30Y	1.4	1.4	1.4	1.4	1.4	1.3 1.3	1.3	1.3 1.4	1.3	1.2	1.3 1.5	1.5 1.7	1.6 1.8	1.7 1.9
	SUY	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1./	1.8	1.9

Absolute Normal Interest Rate Shocks (Continued)

	USD														
	1M	14.2	14.2	141	14.0	14.0	17.5	19.3	23.2	23.0	20.9	19.6	19.7	19.0	18.8
F		14.2 15.7	15.6	14.1 15.6	15.5	15.4	19.5	20.6	23.0	22.6	20.2	19.5	19.7	19.1	19.1
	3M														
-	6M	17.3	17.2	17.1	16.9	16.8	20.6	21.3	22.4	21.8	19.2	19.1	19.3	18.7	18.3
L	9M	18.7	18.6	18.4	18.2	18.0	21.0	20.8	21.3	20.9	17.9	18.1	18.0	17.6	17.2
_	1Y	19.8	19.7	19.5	19.3	19.0	21.3	20.6	20.4	19.5	16.7	17.7	18.0	17.2	16.4
EXPIRY	2Y	21.3	21.1	20.9	20.8	20.6	20.5	18.8	17.5	16.6	14.0	14.5	15.0	14.1	13.5
_	3Y	21.0	20.8	20.6	20.3	20.0	19.1	17.2	15.4	14.3	12.5	12.0	12.5	12.0	11.8
<u>a</u>	5Y	19.0	18.8	18.5	18.2	17.9	16.4	14.8	12.7	11.6	10.2	9.3	9.6	9.5	9.7
	7Y	16.0	15.9	15.6	15.3	15.1	13.8	12.7	11.1	9.8	8.8	7.9	8.1	8.1	8.4
	10Y	12.2	12.1	12.0	11.9	11.7	11.1	10.4	9.3	8.0	7.2	6.7	7.0	6.9	7.2
	15Y	7.8	7.7	7.7	7.6	7.5	7.2	6.8	6.1	5.6	5.2	5.0	5.4	5.4	5.6
	20Y	5.5	5.5	5.5	5.4	5.4	5.3	5.2	4.9	4.7	4.2	4.0	4.5	4.6	4.6
	30Y	4.1	4.1	4.1	4.0	4.0	3.9	3.9	3.9	4.0	3.8	3.5	4.0	4.2	4.2
	US MBS Vega Other Advan	ced Econom													
ļ	1M	5.9	5.9	5.8	5.8	5.8	6.8	7.5	7.9	8.1	7.4	7.2	7.3	7.2	7.1
	3M	7.2	7.1	7.1	7.1	7.0	7.6	8.0	8.1	8.1	7.4	7.2	7.4	7.2	7.1
	6M	8.0	7.9	7.9	7.8	7.8	7.9	8.1	8.0	7.9	7.2	7.0	7.2	7.0	6.9
	9M	8.5	8.5	8.4	8.4	8.3	8.3	8.3	7.9	7.8	6.9	6.9	7.1	6.8	6.6
	1Y	9.2	9.2	9.1	9.0	8.9	8.9	8.6	7.8	7.6	6.7	6.7	6.9	6.6	6.3
EXPIRY	2Y	9.8	9.7	9.6	9.5	9.4	8.8	7.9	6.8	6.4	5.4	5.6	5.7	5.4	4.9
4	3Y	9.0	8.9	8.8	8.7	8.6	7.7	6.9	5.8	5.4	4.6	4.6	4.8	4.4	4.1
EX	5Y	7.7	7.6	7.5	7.3	7.2	6.5	5.9	4.7	4.2	3.7	3.5	3.5	3.3	3.0
	7Y	6.4	6.3	6.2	6.1	6.0	5.4	5.0	4.1	3.5	3.1	2.9	2.9	2.7	2.5
	10Y	5.1	5.1	5.0	5.0	4.9	4.6	4.3	3.6	2.9	2.6	2.5	2.5	2.2	2.1
	15Y	3.5	3.4	3.4	3.3	3.3	3.1	2.9	2.4	2.1	2.0	2.0	1.9	1.7	1.6
Ī	20Y	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.2	2.1	1.9	1.5	1.5	1.4	1.3
ı	30Y	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.0	0.9	0.9	0.9	0.9
	Total Emergi	ng Europe													
ŀ			2.7	2.7	2 7	2.7						F 3	- 0	F 0	6.0
ŀ	1M	3.8	3.7	3.7	3.7	3.7	4.9	5.2	5.4	5.4	5.1	5.2	5.8	5.9	6.0
	3M	4.2	4.2	4.2	4.1	4.1	5.1	5.2	5.3	5.3	5.0	5.1	5.7	5.8	5.9
	3M 6M	4.2 4.9	4.2 4.9	4.2 4.8	4.1 4.8	4.1 4.8	5.1 5.4	5.2 5.3	5.3 5.2	5.3 5.2	5.0 4.8	5.1 4.9	5.7 5.5	5.8 5.6	5.9 5.6
	3M 6M 9M	4.2 4.9 5.2	4.2 4.9 5.2	4.2 4.8 5.1	4.1 4.8 5.1	4.1 4.8 5.0	5.1 5.4 5.5	5.2 5.3 5.3	5.3 5.2 5.1	5.3 5.2 5.0	5.0 4.8 4.5	5.1 4.9 4.8	5.7 5.5 5.3	5.8 5.6 5.3	5.9 5.6 5.3
,	3M 6M 9M 1Y	4.2 4.9 5.2 5.3	4.2 4.9 5.2 5.3	4.2 4.8 5.1 5.3	4.1 4.8 5.1 5.2	4.1 4.8 5.0 5.2	5.1 5.4 5.5 5.5	5.2 5.3 5.3 5.2	5.3 5.2 5.1 4.9	5.3 5.2 5.0 4.8	5.0 4.8 4.5 4.3	5.1 4.9 4.8 4.6	5.7 5.5 5.3 5.2	5.8 5.6 5.3 5.1	5.9 5.6 5.3 5.1
IRY	3M 6M 9M 1Y 2Y	4.2 4.9 5.2 5.3 5.2	4.2 4.9 5.2 5.3 5.2	4.2 4.8 5.1 5.3 5.1	4.1 4.8 5.1 5.2 5.0	4.1 4.8 5.0 5.2 5.0	5.1 5.4 5.5 5.5 5.1	5.2 5.3 5.3 5.2 4.8	5.3 5.2 5.1 4.9 4.3	5.3 5.2 5.0 4.8 4.1	5.0 4.8 4.5 4.3 3.6	5.1 4.9 4.8 4.6 4.0	5.7 5.5 5.3 5.2 4.5	5.8 5.6 5.3 5.1 4.4	5.9 5.6 5.3 5.1 4.3
(PIRY	3M 6M 9M 1Y 2Y 3Y	4.2 4.9 5.2 5.3 5.2 5.0	4.2 4.9 5.2 5.3 5.2 4.9	4.2 4.8 5.1 5.3 5.1 4.9	4.1 4.8 5.1 5.2 5.0 4.8	4.1 4.8 5.0 5.2 5.0 4.7	5.1 5.4 5.5 5.5 5.1 4.8	5.2 5.3 5.3 5.2 4.8 4.3	5.3 5.2 5.1 4.9 4.3 3.8	5.3 5.2 5.0 4.8 4.1 3.6	5.0 4.8 4.5 4.3 3.6 3.1	5.1 4.9 4.8 4.6 4.0 3.5	5.7 5.5 5.3 5.2 4.5 3.9	5.8 5.6 5.3 5.1 4.4 3.8	5.9 5.6 5.3 5.1 4.3 3.7
EXPIRY	3M 6M 9M 1Y 2Y 3Y 5Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4	4.2 4.9 5.2 5.3 5.2 4.9 4.3	4.2 4.8 5.1 5.3 5.1 4.9	4.1 4.8 5.1 5.2 5.0 4.8 4.2	4.1 4.8 5.0 5.2 5.0 4.7 4.1	5.1 5.4 5.5 5.5 5.1 4.8 4.2	5.2 5.3 5.3 5.2 4.8 4.3 3.8	5.3 5.2 5.1 4.9 4.3 3.8 3.8	5.3 5.2 5.0 4.8 4.1 3.6 2.9	5.0 4.8 4.5 4.3 3.6 3.1 2.6	5.1 4.9 4.8 4.6 4.0 3.5 2.8	5.7 5.5 5.3 5.2 4.5 3.9 3.1	5.8 5.6 5.3 5.1 4.4 3.8 3.1	5.9 5.6 5.3 5.1 4.3 3.7 3.1
EXPIRY	3M 6M 9M 1Y 2Y 3Y 5Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8	4.2 4.8 5.1 5.3 5.1 4.9 4.3	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6	5.3 5.2 5.1 4.9 4.3 3.8 3.3	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8	5.8 5.6 5.3 5.1 4.4 3.8 3.1	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7
EXPIRY	3M 6M 9M 1Y 2Y 3Y 5Y 7Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7
EXPIRY	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5 2.3	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0
EXPIRY	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0
EXPIRY	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5 2.3	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2	5.2 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0 1.2	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0 1.2	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2	5.9 5.6 5.3 5.1 4.3 3.7 2.7 2.4 2.0 1.7 1.2
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5 2.3 2.0 1.2	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2	5.0 4.8 4.5 4.3 3.6 2.6 2.4 2.2 2.0 1.8 1.1	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 3M 6M 9M	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0 1.2 20.2 20.1 19.7 19.1	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 1.8 1.1 15.5 15.5 15.7	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.7 1.1 15.0 15.2 15.7 15.9	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 1.7 1.2 15.6 15.8 16.2 16.4	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 3M 6M 9M	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1 23.6	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1 23.0 23.6 24.2 24.1 23.6	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.8	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7 21.3	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0 1.2 20.2 20.1 19.7 19.1 18.5	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.2 17.7	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.7 15.5	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6	5.8 5.6 5.3 5.1 4.4 3.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.4 16.3	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 15.9
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 6M 9M 9M	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1 24.1 23.6 20.0	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 24.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.3 19.6	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7 21.3 19.3	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5 2.3 2.0 1.2 20.1 19.7 19.1 18.5 16.1	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.7 17.7	5.0 4.8 4.5 4.3 3.6 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.7 15.5 15.2 13.1	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6 15.0	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.3 14.5	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 15.9 14.0
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 3M 6M 9M 1Y 2Y 3Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1 24.1 23.6 20.0 18.5	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1 23.0 23.6 24.2 24.1 23.6 19.9 18.4	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 19.7 18.2	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.8 23.8 24.8	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6 17.9	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7 21.3 19.3 17.5	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7 19.7 16.1	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.0 1.2 20.2 20.1 19.7 19.1 18.5 16.1 14.3	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.5 18.2 17.7 15.4 13.1	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.7 15.5 15.2 13.1 11.0	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7 13.9 11.5	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6 15.0 12.5	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.4 16.3 14.5 12.2	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 15.9 14.0 11.8
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 6M 9M 9M	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1 24.1 23.6 20.0	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 24.1	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.3 19.6	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7 21.3 19.3	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5 2.3 2.0 1.2 20.1 19.7 19.1 18.5 16.1	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.7 17.7	5.0 4.8 4.5 4.3 3.6 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.7 15.5 15.2 13.1	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6 15.0	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.3 14.5	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 15.9 14.0
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 3M 6M 9M 1Y 2Y 3Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1 24.1 23.6 20.0 18.5	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1 23.0 23.6 24.2 24.1 23.6 19.9 18.4	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 19.7 18.2	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.8 23.8 24.8	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6 17.9	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7 21.3 19.3 17.5	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7 19.7 16.1	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.0 1.2 20.2 20.1 19.7 19.1 18.5 16.1 14.3	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.5 18.2 17.7 15.4 13.1	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.7 15.5 15.2 13.1 11.0	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7 13.9 11.5	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6 15.0 12.5	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.4 16.3 14.5 12.2	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 15.9 14.0 11.8
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 3M 6M 9M 1Y 2Y 3Y	4.2 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8 Caribbean 23.1 23.6 24.1 24.1 24.1 23.6 20.0 18.5	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1 23.0 23.6 24.2 24.1 23.6 19.9 18.4 18.1	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 19.7 18.2 17.8	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.8 23.3 19.6 18.0 17.5	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6 17.9 17.2	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.2 22.1 21.7 21.3 19.3 17.5 15.8	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7 17.7 16.1 14.5	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0 1.2 20.1 19.7 19.1 18.5 16.1 14.3 12.4	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.2 17.7 15.4 13.1	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.5 15.7 15.8 15.9 13.1 11.0 8.2	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7 13.9 11.5 8.2	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6 15.0 12.5 9.0	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.4 16.3 14.5 12.2 8.9	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 15.9 14.0 11.8 8.8
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 8 1M 6M 9M 1Y 2Y 3Y 5Y	4.2 4.9 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8. Caribbean 23.1 24.1 24.1 24.1 24.1 23.6 20.0 18.5 18.2	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1 23.0 23.6 24.2 24.1 23.6 19.9 18.4 18.1 16.4	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 19.7 18.2 17.8 16.2	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 2.0 1.1 22.9 23.4 23.9 23.8 23.3 19.6 18.0 17.5 15.9	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6 17.9 17.2 15.6	5.1 5.4 5.5 5.5 5.1 4.8 4.2 3.7 2.1 1.2 22.2 22.1 21.7 21.3 19.3 17.5 15.8 14.4	5.2 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7 17.7 16.1 14.5 13.3	5.3 5.2 5.1 4.9 4.3 3.8 3.3 3.0 2.5 2.3 2.0 1.2 20.1 19.7 19.1 18.5 16.1 14.3 12.4 11.5	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.5 18.5 18.4 13.1 10.4 9.4	5.0 4.8 4.5 4.3 3.6 2.4 2.2 2.0 1.8 1.1 15.5 15.5 15.7 15.5 15.2 13.1 11.0 8.2 7.7	5.1 4.9 4.8 4.6 4.0 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7 13.9 11.5 8.2 7.6	5.7 5.5 5.3 5.2 4.5 3.1 2.8 2.6 2.2 1.8 1.2 15.6 15.9 16.4 16.7 16.6 15.0 12.5 9.0 8.3	5.8 5.6 5.3 5.1 4.4 4.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 15.8 16.2 16.4 16.3 14.5 12.2 8.9 8.1	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 15.8 16.1 16.1 16.1 15.9 14.0 11.8 8.8 8.1
	3M 6M 9M 1Y 2Y 3Y 5Y 7Y 10Y 15Y 20Y 30Y Total Latam 6 1M 3M 6M 9M 1Y 2Y 3Y 5Y 7Y	4.2 4.9 4.9 5.2 5.3 5.2 5.0 4.4 3.8 3.1 2.8 2.1 1.1 8. Caribbean 23.1 23.6 24.1 24.1 24.1 23.6 20.0 18.5 18.2 16.6 14.7	4.2 4.9 5.2 5.3 5.2 4.9 4.3 3.8 3.1 2.8 2.1 1.1 23.0 23.6 24.2 24.1 23.6 19.9 18.4 18.1 16.4 14.6	4.2 4.8 5.1 5.3 5.1 4.9 4.3 3.7 3.0 2.8 2.0 1.1 23.0 23.5 24.1 24.0 23.5 19.7 18.2 17.8 16.2 14.4	4.1 4.8 5.1 5.2 5.0 4.8 4.2 3.7 3.0 2.7 2.0 1.1 22.9 23.4 23.9 23.8 23.3 19.6 18.0 17.5 15.9 14.2	4.1 4.8 5.0 5.2 5.0 4.7 4.1 3.6 3.0 2.7 2.0 1.1 22.8 23.3 23.6 23.5 23.0 19.6 17.9 17.2 15.6 13.9	5.1 5.4 5.5 5.5 5.5 5.1 4.8 4.2 3.7 3.0 2.7 2.1 1.2 22.2 22.1 21.7 21.3 19.3 17.5 15.8 14.4 13.0	5.2 5.3 5.3 5.2 4.8 4.3 3.8 3.6 2.9 2.6 2.1 1.2 21.0 20.9 20.5 20.1 19.7 17.7 16.1 14.5 13.3 12.1	5.3 5.2 5.1 4.9 4.3 3.8 3.0 2.5 2.3 2.0 1.2 20.2 20.1 19.7 19.1 18.5 16.1 14.3 12.4 11.5 10.5	5.3 5.2 5.0 4.8 4.1 3.6 2.9 2.6 2.3 2.0 1.9 1.2 18.6 18.5 18.5 18.5 18.2 17.7 15.4 13.1 10.4 8.6	5.0 4.8 4.5 4.3 3.6 3.1 2.6 2.4 2.2 2.0 1.8 1.1 15.5 15.7 15.5 15.7 15.5 15.7 17.7 7.3	5.1 4.9 4.8 4.6 4.0 3.5 2.8 2.5 2.4 2.2 1.7 1.1 15.0 15.2 15.7 15.9 15.7 13.9 11.5 8.2 7.6 7.8	5.7 5.5 5.3 5.2 4.5 3.9 3.1 2.8 2.6 2.2 1.8 1.2 15.6 16.4 16.7 16.6 15.0 12.5 9.0 8.3 8.3	5.8 5.6 5.3 5.1 4.4 3.8 3.1 2.8 2.4 2.1 1.7 1.2 15.6 16.2 16.4 16.3 14.5 12.2 8.9 8.1 7.9	5.9 5.6 5.3 5.1 4.3 3.7 3.1 2.7 2.4 2.0 1.7 1.2 15.7 1.5.8 16.1 16.1 15.9 14.0 11.8 8.8 8.8 8.1 7.9

Absolute Normal Interest Rate Shocks (Continued)

	Total Asia Ex	c-Japan													
	1M	6.2	6.2	6.2	6.3	6.3	6.5	6.5	6.6	6.5	5.9	5.8	6.2	5.9	5.8
	3M	6.2	6.2	6.2	6.2	6.3	6.4	6.4	6.4	6.3	5.6	5.7	6.0	5.8	5.6
	6M	6.2	6.2	6.2	6.2	6.2	6.3	6.2	6.1	6.0	5.3	5.4	5.8	5.5	5.4
	9M	6.2	6.2	6.2	6.2	6.2	6.2	6.0	5.9	5.7	5.0	5.2	5.5	5.3	5.1
	1Y	6.2	6.2	6.2	6.1	6.1	6.0	5.8	5.6	5.4	4.7	5.0	5.3	5.0	4.8
∑	2Y	6.1	6.1	6.0	6.0	6.0	5.6	5.2	4.7	4.5	3.8	4.1	4.4	4.1	3.9
EXPIRY	3Y	6.0	5.9	5.9	5.8	5.7	5.3	4.7	4.0	3.7	3.2	3.4	3.6	3.4	3.3
Ä	5Y	5.6	5.5	5.5	5.4	5.2	4.7	4.1	3.3	2.9	2.5	2.6	2.7	2.6	2.5
	7Y	4.8	4.7	4.6	4.5	4.4	4.0	3.6	2.9	2.4	2.2	2.2	2.2	2.2	2.2
	10Y	3.9	3.8	3.8	3.7	3.6	3.3	3.1	2.5	2.0	1.8	1.9	1.9	1.9	1.9
	15Y	2.6	2.5	2.5	2.5	2.4	2.2	2.0	1.7	1.4	1.3	1.5	1.5	1.5	1.5
	20Y	1.6	1.6	1.6	1.6	1.5	1.5	1.4	1.2	1.2	1.1	1.1	1.3	1.2	1.2
	30Y	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9	1.0	1.1	1.1	1.1
	Total ME/N.	Africa 0.6	0.6	0.6	0.6	0.6	1.0	1.6	2.9	4.3	5.5	6.6	7.7	7.3	7.1
	3M	0.7	0.7	0.7	0.7	0.7	1.1	1.7	3.0	4.3	5.4	6.5	7.6	7.2	6.9
	6M	0.9	0.9	0.9	0.9	0.9	1.4	1.9	3.2	4.4	5.3	6.4	7.3	6.9	6.6
	9M	1.1	1.1	1.1	1.0	1.0	1.6	2.1	3.3	4.4	5.1	6.2	7.1	6.7	6.4
	1Y	1.3	1.3	1.2	1.2	1.2	1.8	2.3	3.5	4.5	5.0	6.1	6.9	6.4	6.1
<u>~</u>	2Y	2.3	2.3	2.3	2.3	2.2	2.7	3.2	3.9	4.6	4.7	5.5	6.1	5.6	5.2
<u>.</u>	3Y	3.4	3.3	3.3	3.2	3.2	3.7	4.0	4.3	4.7	4.4	5.0	5.4	5.0	4.7
EXPIRY	5Y	5.6	5.5	5.5	5.4	5.3	5.3	5.2	4.9	4.6	4.2	4.4	4.4	4.1	4.0
_	7Y	6.5	6.4	6.3	6.2	6.1	6.0	5.8	5.1	4.3	4.0	3.9	3.8	3.6	3.5
	10Y	6.0	6.0	5.9	5.8	5.8	5.6	5.1	4.4	3.8	3.6	3.3	3.2	3.1	3.0
	15Y	4.6	4.5	4.5	4.4	4.3	4.2	3.9	3.5	2.7	2.4	2.4	2.4	2.3	2.2
	20Y	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.7	1.6	1.5	1.5	1.6	1.6	1.6
	30Y	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.4	1.4
	Total Sub-Sa			1									1		
	1M	12.8	12.8	12.7	12.6	12.5	13.8	13.7	15.9	16.1	14.5	14.4	15.0	14.3	13.8
	3M	11.4	11.3	11.2	11.2	11.1	13.4	13.2	15.2	15.6	13.9	15.2	15.8	15.0	14.4
	6M	13.0	13.0	12.9	12.8	12.7	14.6	14.1	15.6	15.6	13.8	15.2	15.7	14.9	14.3
	9M	14.9	14.9	14.7	14.6	14.5	16.4	15.4	15.6	15.4	13.5	14.9	15.4	14.6	13.9
>	1Y	16.4	16.3	16.2	16.0	15.9	17.7	16.4	15.4	15.1	13.1	14.4	15.0	14.2	13.4
~	2Y	18.7	18.5	18.3	18.1	17.9	16.5	15.1	13.5	13.1	11.2	12.7	13.2	12.3	11.5
EXPIRY	3Y	17.0	16.8	16.6	16.4	16.1	15.5	14.0	12.1	11.4	9.9	10.9	11.4	10.7	10.0
ω	5Y	14.7	14.6	14.4	14.1	13.9	13.4	12.3	10.5	9.3	8.1	8.3	8.8	8.5	8.4
	7Y	14.5	14.4	14.2	13.9	13.7	12.7	11.7	10.1	8.7	7.9	7.7	8.1	7.9	8.0
	10Y	13.0	12.9	12.7	12.6	12.4	11.7	11.0	9.5	8.0	7.4	7.6	7.9	7.7	7.9
	15Y	8.5	8.4	8.3	8.2	8.1	7.6	7.6	6.3	5.4	5.6	6.0	6.3	6.1	6.1
	20Y	5.7	5.6	5.6	5.6	5.5	5.6	5.7	5.3	5.1	5.0	4.7	5.0	4.8	4.7
	30Y	1.7	1.7	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.5	2.4	2.6	2.6	2.5

Other Rates

Absolute Change in Inflation (bps)

		MATURITY													
Currency	1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	30Y		
AUD	(18.4)	(18.0)	(17.5)	(17.0)	(16.6)	(15.1)	(14.0)	(12.6)	(11.9)	(11.4)	(11.0)	(10.9)	(10.9)		
EUR	(34.0)	(34.1)	(34.2)	(34.3)	(34.2)	(33.5)	(32.2)	(29.0)	(26.1)	(23.0)	(20.7)	(20.4)	(21.0)		
GBP	(19.9)	(19.6)	(19.1)	(18.7)	(18.3)	(17.2)	(16.5)	(15.7)	(15.0)	(14.0)	(12.2)	(10.8)	(8.9)		
JPY	(47.0)	(47.1)	(47.3)	(47.3)	(47.4)	(46.7)	(45.2)	(40.7)	(35.4)	(28.0)	(20.4)	(20.1)	(35.7)		
USD	86.9	84.1	80.1	76.5	73.2	62.7	55.2	45.0	38.6	32.5	28.1	27.5	31.2		
Other	86.9	84.1	80.1	76.5	73.2	62.7	55.2	45.0	38.6	32.5	28.1	27.5	31.2		

Absolute Change in Cross-Currency vs. USD Basis (bps)

(move in bps of spread on non-USD leg)

	MATURITY													
Currency	1M	3M	6M	9M	1Y	2Y	3Y	5Y	7Y	10Y	15Y	20Y	30Y	
AUD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GBP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
JPY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Appendix 12: Data Notes

Sources for data through 2017:Q4 (as released through 1/18/2018). The 2017:Q4 values of variables marked with an asterisk (*) are projected.

U.S. real GDP growth*: Percent change in real Gross Domestic Product, chained (2009) dollars, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 1.1.6, line 1).

U.S. nominal GDP growth*: Percent change in Gross Domestic Product (current dollars), expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 1.1.5, line 1).

U.S. real disposable income growth*: Percent change in disposable personal income (current dollars), divided by the price index for personal consumption expenditures, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 2.1, line 27, and NIPA table 1.1.4, line 2).

U.S. nominal disposable income growth*: Percent change in nominal disposable personal income (current dollars), expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 2.1, line 27).

U.S. unemployment rate: Quarterly average of seasonally-adjusted monthly data for the unemployment rate of the civilian, noninstitutional population of age 16 years and older, Bureau of Labor Statistics (series LNS14000000).

U.S. CPI inflation: Percent change in the quarterly average of seasonally-adjusted monthly data for the Consumer Price Index, expressed at an annualized rate, Bureau of Labor Statistics (series CUSR0000SA0).

U.S. 3-month Treasury rate: Quarterly average of 3-month Treasury bill secondary market rate on a discount basis, H.15 Release, Selected Interest Rates, Federal Reserve Board (series RIFSGFSM03 N.B).

U.S. 5-year Treasury yield: Quarterly average of the yield on 5-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based on the Svensson smoothed term structure model; see Lars E. O. Svensson (1995), "Estimating Forward Interest Rates with the Extended Nelson-Siegel Method," *Quarterly Review*, no. 3, Sveriges Riksbank, pp. 13–26

U.S. 10-year Treasury yield: Quarterly average of the yield on 10-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based on the Svensson smoothed term structure model; see id.

U.S. BBB corporate yield: Merrill Lynch 10-year BBB corporate bond yield, Z.1 Release (Financial Accounts of United States), Federal Reserve Board (series FL073163013.Q).

U.S. mortgage rate: Quarterly average of weekly series for the interest rate of a conventional, conforming, 30-year fixed rate mortgage, obtained from the Primary Mortgage Market Survey of the Federal Home Loan Mortgage Corporation.

U.S. prime rate: Quarterly average of monthly series, H.15 Release (Selected Interest Rates), Federal Reserve Board (series RIFSPBLP_N.M).

U.S. Dow Jones Total Stock Market (Float Cap) Index: End of quarter value via Bloomberg Finance L.P.

U.S. House Price Index*: Price Index for Owner-Occupied Real Estate, CoreLogic National, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035243.Q).

U.S. Commercial Real Estate Price Index*: Commercial Real Estate Price Index, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035503.Q, divided by 1000).

U.S. Market Volatility Index (VIX): VIX converted to quarterly frequency using the maximum close-of-day value in any quarter, Chicago Board Options Exchange via Bloomberg Finance L.P. Euro area real GDP growth*: Percent change in real gross domestic product at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver, extended back using ECB Area Wide Model dataset (ECB Working Paper series no. 42).

Euro area inflation: Percent change in the quarterly average of the harmonized index of consumer prices at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver.

Developing Asia real GDP growth*: Percent change in real gross domestic product at an annualized rate, staff calculations based on Bank of Korea via Haver; National Bureau of Statistics of China via Haver; Indian Central Statistical Office via Haver; Census and Statistics Department of Hong Kong via Haver; and Taiwan Directorate-General of Budget, Accounting, and Statistics via Haver.

Developing Asia inflation*: Percent change in the quarterly average of the consumer price index, or local equivalent, at an annualized rate, staff calculations based on data from National Bureau of Statistics of China via Haver; Indian Ministry of Statistics and Programme Implementation via Haver; Labour Bureau of India via Haver; National Statistical Office of the Republic of Korea via Haver; Census and Statistic Department of Hong Kong via Haver; and Taiwan Directorate-General of Budget, Accounting, and Statistics via Haver.

Japan real GDP growth*: Percent change in gross domestic product at an annualized rate from 1980 to present and percent change in gross domestic expenditure at annualized rate prior to 1980, Cabinet Office of Japan via Haver.

Japan inflation*: Percent change in the quarterly average of the Consumer Price Index at an annualized rate, based on data from the Ministry of Internal Affairs and Communications via Haver.

U.K. real GDP growth*: Percent change in gross domestic product at an annualized rate, U.K. Office for National Statistics via Hayer.

U.K. inflation: Percent change in the quarterly average of the Consumer Price Index at an annualized rate from 1988 to present and percent change in the quarterly average of the retail prices index prior to 1988, staff calculations based on data from the U.K. Office for National Statistics via Haver.

Exchange rates: End-of-quarter exchange rates, H.10 Release (Foreign Exchange Rates), Federal Reserve Board.