



Circular 2019/2 Interest Rate Risks - Banks

Measurement, management, monitoring and control of
interest rate risks in the banking book

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Annex 1	Outlier banks: identification, assessment and actions
Annex 2	Standardized interest rate shock scenarios

Addressees

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I. Subject, scope of application

This circular shall describe the minimum standards for the measurement, management, monitoring and control of interest rate risks in the banking book and provide more details regarding Article 12 of the Banking Ordinance (BO; SR 952.02), Article 19 of the Stock Exchange Ordinance (SESTO; SR 954.11) as well as Articles 45 and 96 of the Capital Adequacy Ordinance (CAO; SR 952.03). It contains specifications on the FINMA circular 2017/1 “Corporate governance – banks” 1

The scope of application of the Circular shall encompass all positions that do not meet the conditions pursuant to Article 5 CAO (“trading book”). However, periodically, all interest rate risks on and off the trading book shall be subjected to an overall consideration. 2

The measurement, management, monitoring and control of interest rate risks shall be performed at both single-entity and consolidated levels. Should interest rate risks, viewed individually or in aggregate, assumed in controlled entities active in banking or finance be immaterial in relation to those assumed by the bank in the banking book, they may be excluded from the consolidated approach with the consent of the external auditor. By issuing directives, limits or other policies, the bank shall ensure that these units do not enter into significant interest rate risks in their banking book. 3

The present circular is not applicable to security dealers that do not possess a banking license, provided they do not enter into significant interest rate risks outside the trading book. The audit firm must confirm this in its annual risk analysis. 4

II. Basel Minimum Standards

The present circular shall be based on the Basel Committee’s minimum standards for interest rate risks in the banking book: 5

- “Interest rate risk in the banking book” of April 2016 (IRRBB)¹. 6

The passages of the Basel text to which this circular refers to shall always be indicated in square brackets. 7

III. Basic considerations

[IRRBB§8] Interest rate risk in the banking book² shall be the risk to the bank’s capital and earnings arising from shifts in interest rates. Changes in interest rates affect the economic value of a bank’s assets, liabilities and off-balance-sheet items (net present value perspective). They also impact income from interest operations (earnings perspective). 8

¹ The IRRBB standards of the Basel Committee on Banking Supervision can be found online at: www.bis.org > Committees & associations > Basel Committee on Banking Supervision > Publications > Interest rate risk in the banking book

² Hereinafter only referred to as interest rate risk.

[IRRBB§9] Interest rate risks can take three forms:	9
<ul style="list-style-type: none"> • A gap risk arises from a mismatch in time or in the re-indexing of interest rates for assets, liabilities and off-balance-sheet exposures. 	10
<ul style="list-style-type: none"> • Basis risk describes the impact of relative changes in interest rates for financial instruments that have similar tenors but are valued using different interest rates. 	11
<ul style="list-style-type: none"> • Option risk arises from options or from embedded (implicit) options that allow the bank or its customer to alter the level and timing of their cash flows (e.g. deposits without fixed maturity, term deposits or fixed-rate loans). 	12

[IRRBB§10] Changes in interest rates may indirectly cause a change in the debtor's credit rating (solvency effect) ³ , without resulting in an immediate jump to default.	13
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The principles stipulated in the second chapter of this circular shall depend on the bank's size as well as the type, scope, complexity and riskiness of its business activities (principle of proportionality). Small banks as defined in margin no. 15 shall be excluded from the implementation of individual marginal numbers of this Circular; in accordance with Annex 3 BO, this exception shall also apply to category 3 banks with little income from interest rate transactions as defined in margin no. 15.	14
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For the purposes of the present circular, category 4 and 5 banks in accordance with Annex 3 BO shall be classified as "small banks." Category 3 banks with low income from interests shall be banks for which the share of net income from interests is less than one-third of the ordinary income. ⁴ FINMA may grant simplifications or set tighter requirements.	15
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IV. Principles

A. Principle 1: Interest rate risk management

[IRRBB§12–15] Banks shall identify, measure, monitor and control their interest rate risks in a timely and comprehensive manner. The credit rating effects of tradable financial instruments must also be taken into account according to their relevance. In this sense, category 1 high quality liquid assets (HQLA) in accordance with Article 15a LiqO, as well as those issued by the Mortgage Bond Bank of the Swiss Mortgage Institutions or the Swiss cantonal banks' Mortgage Bond Center in accordance with Article 15b LiqO do not have to be taken into account.	16
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³ This is deemed to be the credit-spread risk in the banking book.

⁴ Based on the values in accordance with margin no. 2 of FINMA Circular 08/14 "Supervisory reporting - banks" (form AU302), this means the following shall apply: $\text{Subtotal net income from interests} / (\text{Subtotal net income from interests} + \text{Subtotal income from commissions and services} + \text{Income from trading and the fair value option} + \text{Subtotal other ordinary income}) < 1/3$.

B. Principle 2: Governing body

[IRRBB§16–27] The governing body shall be responsible for the oversight and approval of an appropriate framework relating to interest rate risks and for defining the risk appetite for interest rate risks. 17

[IRRBB§17] The governing body or its delegates shall define how to measure, monitor and control interest rate risks so that these are consistent with the approved strategies and policies. This shall include interest rate shock and stress scenarios. 18

C. Principle 3: Risk tolerance

[IRRBB§29–31] The risk tolerance relating to interest rate risks shall be stated at least in regard to the net present value perspective. In doing so, the entity shall define appropriate limits that are based on its risk appetite in consideration of the short-term and long-term impacts of interest rate shifts and suitable shock and stress scenarios. If relevant in individual cases, limits may also be defined for the earnings perspective. 19

D. Principle 4: Internal interest rate risk measurement system

The measurement of interest rate risk shall be based on a broad and appropriate range of interest rate shock and stress scenarios. 20

[IRRBB§35] The internal interest rate risk measurement system shall consider the following scenarios: 21

- internally selected interest rate shock scenarios that adequately address the bank's risk profile; 22
- historical and hypothetical interest rate stress scenarios, which tend to be more severe than shock scenarios listed in margin no. 22. 23
- the six standardized interest rate shock scenarios as described in Annex 2; and 24
- any other interest rate shock scenarios prescribed by FINMA. 25

[IRRBB§40] When developing scenarios in accordance with margin nos. 22 and 23, the relevant factors shall be considered (such as currencies⁵, the curve and level of the current term structure of interest rates as well as the historical and implied volatility of interest rates). In low interest rate environments, banks shall also consider negative interest rate scenarios and their effects on assets and liabilities. 26

[IRRBB§41–42] The following elements shall typically be considered when developing interest rate shock and stress scenarios for the interest rate risk: 27

- severe and plausible interest rate shock and stress scenarios. 28
- the existing level of interest rates and the interest rate cycle as well as interest rate risk concentrations, interest rate volatility, solvency effects, dependencies with other types of risk, balance sheet structure effects and customer terms. 29

⁵ The relevant currencies according to the SNB data collection forms ZIRU and ZIRK must be taken into account.

- hypothetical assumptions: for changes in portfolio composition due to bank-internal and external factors; for new products where only limited historical data is available; for new market information and new, emerging risks. 30

[IRRBB§43] Banks shall consider interest rate risk as part of qualitative and quantitative stress tests (reverse stress tests) as part of their overall stress test framework concept. In such stress tests, banks shall assume a severe worsening of their capital or earnings in order to reveal vulnerabilities in view of their hedging strategies and the potential behavioral reactions of their customers. Small banks and Category 3 banks with low income from interest activities in accordance with margin no. 15 may limit themselves to qualitative stress tests. 31

If a small bank, as defined in margin no. 15, can comprehensibly justify and document that the interest rate shock scenarios according to margin nos. 24 and 25 are appropriate for the interest rate risks entered into, it may limit itself to these; in such cases, margin nos. 22–23 and 26–30 do not apply. 32

E. Principle 5: Modeling assumptions

[IRRBB§46–51] The key behavioral modeling assumptions used to measure interest rate risks shall be conceptually sound and reasonable, and, in regard to optionality, consistent with relevant historical experience. Sensitivity analyses for behavioral assumptions must be carried out periodically. The other modeling assumptions and their impact on interest rate risk shall be conceptually sound, reasonable and shall be reviewed at least annually and be consistent with the bank's business strategies. 33

Smaller banks or Category 3 banks with low income from interests as defined in margin no. 15, shall be exempt from reviewing their modeling assumptions and the impact at least once a year if they can comprehensibly justify and document that their business model, their client and product structure, market conditions and other factors relevant to the modeling assumptions have not changed significantly. However, modeling assumptions and their impact must be reviewed at least every three years. 34

F. Principle 6: Data integrity and validation

[IRRBB§52–65] Interest rate risk measurement systems shall be based on accurate data and appropriately documented, reviewed and tested. Models for interest rate risks shall also be appropriately documented and controlled and, if suitable data is available, also tested. Both shall be part of a risk framework and be subject to an independent and adequately documented validation. 35

[IRRBB§52–54] If appropriate, a variety of methodologies shall be used under both the net present value and the earnings perspective, ranging from static simulations to more dynamic modeling techniques for the earnings-based approach. 36

[IRRBB§57] The internal interest risk measurement system must be able to calculate the net present value and the earnings-based risks based on the scenarios set out in margin nos. 22–25. 37

For data validation, interest rate risk measurement systems, models and parameters, small banks and Category 3 banks with low income from interest activities as defined in margin no. 15 may select an adequately simplified implementation described in margin nos. 35 and 37. 38

Specifically, the implementation shall take into account the simpler organizational structure of such banks (e.g. no independent validation function). However, a validation has to be undertaken whenever significant changes occur to data, interest rate risk measurement systems, models and parameters, but at least every three years.

G. Principle 7: Reporting

[IRRBB§66] The governing body or its delegates shall be informed regularly (at least every six months) on the scope and the development of the interest rate risk as well as its measurement, management, monitoring and control. 39

[IRRBB§67] These reports shall include in particular the interest rate risk exposure (also under stress scenarios), the utilization of limits and the most important modeling assumptions. 40

H. Principle 8: Disclosure

[IRRBB§69-71] Disclosure requirements shall be based on FINMA circular 2016/1 “Disclosure – banks” 41

I. Principle 9: Internal risk capacity

[IRRBB§72, 74] When determining the appropriate capital adequacy of the institution in accordance with FINMA circular 2011/2 “Capital buffer and capital planning – banks”, in which the institution includes all risk types relevant to it, it shall demonstrate, if relevant, that adequate risk capital is reserved for the interest rate risk in accordance with margin no. 8. 42

[IRRBB§73] The appropriateness test of the risk capital shall not base exclusively on the results of the FINMA’s quantitative valuation process used to identify possibly inadequately high interest rate risk. 43

[IRRBB§75–76] The capital adequacy assessments shall adequately take into consideration the factors relevant to the institution, in particular: 44

- the limits and their level of utilization; 45
- the effectiveness and expected costs of hedging measures; and 46
- the risk-based allocation of capital across (legal) organizational units. 47

Margin nos. 44–47 are not applicable to small banks and Category 3 banks with low income from interest activities as defined in margin no. 15. 48

V. Data collection and data assessment

[IRRBB§77–79, Principle 10] With the exception of branch offices of foreign banks, banks shall regularly submit to FINMA information on their interest rate risks at both the stand-alone and group levels using a FINMA-defined form. 49

[IRRBB§88–95, Principle 12] The criteria for the definition and treatment of outlier banks used by FINMA to assess these shall be described in Annex 1. 50

Annex 1

Outlier banks: identification, assessment and actions

I. Identification of institutions with potentially unduly high interest rate risks in their banking book or inadequate interest rate risk management (outlier banks)

[IRRBB§88-95] FINMA shall identify outlier banks based on margin nos. 2 and 5 of this Annex. 1

Criteria for the identification of potentially unduly high interest rate risks: 2

- The change in the net present value of capital (based on cash flows according to the data collected as per margin no. 49 of the present circular) shall amount to at least 15% of its Tier 1 capital under at least one of the interest rate shock scenarios described in margin no. 24 of the present circular. 3
- The amount of the change in the net present value of capital shall be calculated as per margin no. 3, taking into consideration the reporting institution's assumptions as well as standard market assumptions (for comparative purposes). 4
- Criteria for the identification of inadequate interest rate risk management: 5
- Deficiencies in complying with Principles 1 through 9. 6

II. Assessment of outlier banks

FINMA shall assess outlier institutions on an individual basis. 7

FINMA shall assess outlier institutions on a case-by-case basis using on the following criteria: 8

- Capital adequacy relative to the institution's interest rate risks and its earnings position. 9
- Responsiveness to interest rate shocks and stress scenarios. In doing so, the impact on financial assets held at market value and the potential impact of a revaluation of financial assets stated at historical costs shall be considered. 10
- Adequacy of assumptions and parameters regarding margin payments and other credit rating-related spread, deposits without fixed term, the allocation of capital to risk types and entities as well as early repayments or withdrawals with regard to the specifics of the institution. 11
- As for the earnings situation, the amount and stability of earnings and their influence on future business activities, including dividend payments, shall be assessed. 12

Annex 1

Outlier banks: identification, assessment and actions

III. Measures

If FINMA's assessment of an individual outlier bank shows that its interest rate risk management is inadequate or that the interest rate risk is disproportionate in relation to the institution's capital (taking into account the target capital according to FINMA circ. 2011/2 "Capital buffer and capital planning – banks"), to the earnings or to the risk capacity (taking into account all of the institution's risks), FINMA may demand that the institution hold additional capital (in accordance with Article 45 CAO) or stipulate other measures. 13

In particular, measures according to margin no. 13 shall include: A reduction of the interest rate risks, active overriding of assumptions or parameters of the internal interest rate risk measurement system, an enhancement of the interest rate risk framework or a replacement of the institution's internal interest rate risk measurement system with the standardized framework of the Basel Committee standards for interest rate risk in the banking book in accordance with margin no. 6 of this circular [IRRBB§100-132]. 14

Annex 2

Standardized interest rate shock scenarios

Banks shall apply the standardized interest rate shock scenarios in accordance with margin no. 24 to calculate the change in the present value of their capital, broken down by major currencies. The six standardized interest rate shock scenarios are:

- i. parallel upward shock;
- ii. parallel downward shock;
- iii. Steepener shock (short-term interest rates fall and long-term interest rates rise);
- iv. Flattener shock (short-term interest rates rise and long-term interest rates fall);
- v. Upward shock of short-term interest rates; and
- vi. Downward shock of short-term interest rates.

When applying standardized interest rate shock scenarios, interpolation is possible in the maturity buckets if the internal interest rate risk measurement system cannot model the maturity buckets specified by FINMA. If more, fewer or different maturity buckets are used, the results must be equivalent to the results attained if the maturity buckets with the FINMA specifications had been used.

The definition of the maturity buckets and their maturity bucket medians (in years) are shown in the following table:

Maturity bucket	Maturity bucket limits	Maturity bucket median point	Maturity bucket	Maturity bucket limits	Maturity bucket median point
1	Overnight	0.0028	11	(4y;5y]	4.5
2	(0N;1M]	0.0417	12	(5y;6y]	5.5
3	(1M;3M]	0.1667	13	(6y;7y]	6.5
4	(3M;6M]	0.375	14	(7y;8y]	7.5
5	(6M;9M]	0.625	15	(8y;9y]	8.5
6	(9M;1y]	0.875	16	(9y;10y]	9.5
7	(1y;1,5y]	1.25	17	(10y;15y]	12.5
8	(1,5y;2y]	1.75	18	(15y;20y]	17.5
9	(2y;3y]	2.5	19	>20y	25
10	(3y;4y]	3.5			

Annex 2

Standardized interest rate shock scenarios

Banks may calculate the standardized interest rate shock scenarios for each currency themselves in accordance with the Basel minimum standards¹ on interest rate risks. In contrast, a value of 150 is assumed for a (parallel) interest rate shock $\bar{R}_{shocktype.CHF}$. The interest rate shocks $\bar{R}_{shocktype.ETC}$ are 300 (parallel), 350 (short) and 200 (long). The amount of standardized interest rate shocks per currency determined by banks must at least correspond to FINMA requirements. In the scenarios, no interest rate floor shall be applied. Standardized interest rate shock scenarios (in basis points) by currency:

Maturity bucket		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
CHF	i	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
	ii	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150
	iii	-97	-96	-90	-81	-70	-61	-47	-31	-10	12	29	43	53	61	68	73	82	88	90	90
	iv	120	118	113	104	94	85	72	56	36	15	-2	-14	-25	-32	-39	-43	-52	-58	-60	-60
	v	150	148	144	137	128	121	110	97	80	63	49	38	30	23	18	14	7	2	0	0
	vi	-150	-148	-144	-137	-128	-121	-110	-97	-80	-63	-49	-38	-30	-23	-18	-14	-7	-2	0	0
ARS	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269	269
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179	-179
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	1
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	-1

¹ Cf. Annex 2 of the standards "Interest rate risk in the banking book" of the Basel Committee on Banking Supervision's dated April 2016. www.bis.org > Committees & associations > Basel Committee on Banking Supervision > Publications > Interest rate risk in the banking book > Annex 2

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
AUD	i	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300			
	ii	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300		
	iii	-292	-288	-273	-250	-224	-200	-166	-125	-73	-17	27	61	87	108	124	136	159	174	179	179	179		
	iv	360	355	340	317	291	266	231	190	137	80	36	1	-25	-46	-63	-75	-99	-114	-119	-119	-119		
	v	450	445	432	410	385	362	329	291	241	188	146	114	89	69	54	42	20	6	1	1	1	1	
	vi	-450	-445	-432	-410	-385	-362	-329	-291	-241	-188	-146	-114	-89	-69	-54	-42	-20	-6	-1	-1	-1	-1	
BRL	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269	269	269	269	269
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179	-179	-179	-179	-179
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	1	1	1	1
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	-1	-1	-1	-1

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
CAD	i	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	ii	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
	iii	-195	-192	-182	-165	-147	-130	-106	-78	-42	-3	28	52	70	84	96	104	121	131	134	
	iv	240	237	227	210	192	175	151	123	87	48	17	-7	-25	-39	-51	-59	-76	-86	-89	
	v	300	297	288	273	257	241	219	194	161	125	97	76	59	46	36	28	13	4	1	
	vi	-300	-297	-288	-273	-257	-241	-219	-194	-161	-125	-97	-76	-59	-46	-36	-28	-13	-4	-1	
CNY	i	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	ii	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250
	iii	-195	-192	-182	-165	-147	-130	-106	-78	-42	-3	28	52	70	84	96	104	121	131	134	
	iv	240	237	227	210	192	175	151	123	87	48	17	-7	-25	-39	-51	-59	-76	-86	-89	
	v	300	297	288	273	257	241	219	194	161	125	97	76	59	46	36	28	13	4	1	
	vi	-300	-297	-288	-273	-257	-241	-219	-194	-161	-125	-97	-76	-59	-46	-36	-28	-13	-4	-1	

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
EUR	i	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	ii	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
	iii	-162	-160	-152	-140	-126	-113	-95	-73	-45	-15	8	26	40	51	60	67	79	87	90	
	iv	200	197	189	177	162	149	130	108	79	48	24	6	-9	-20	-29	-36	-49	-57	-59	
	v	250	247	240	228	214	201	183	161	134	104	81	63	49	38	30	23	11	3	0	
	vi	-250	-247	-240	-228	-214	-201	-183	-161	-134	-104	-81	-63	-49	-38	-30	-23	-11	-3	0	
GBP	i	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	ii	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250	-250
	iii	-195	-192	-182	-165	-147	-130	-106	-78	-42	-3	28	52	70	84	96	104	121	131	134	
	iv	240	237	227	210	192	175	151	123	87	48	17	-7	-25	-39	-51	-59	-76	-86	-89	
	v	300	297	288	273	257	241	219	194	161	125	97	76	59	46	36	28	13	4	1	
	vi	-300	-297	-288	-273	-257	-241	-219	-194	-161	-125	-97	-76	-59	-46	-36	-28	-13	-4	-1	

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
HKD	i	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	ii	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
	iii	-162	-160	-152	-140	-126	-113	-95	-73	-45	-15	8	26	40	51	60	67	79	87	90	
	iv	200	197	189	177	162	149	130	108	79	48	24	6	-9	-20	-29	-36	-49	-57	-59	
	v	250	247	240	228	214	201	183	161	134	104	81	63	49	38	30	23	11	3	0	
	vi	-250	-247	-240	-228	-214	-201	-183	-161	-134	-104	-81	-63	-49	-38	-30	-23	-11	-3	0	
IDR	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
	iii	-325	-318	-299	-268	-232	-199	-153	-98	-28	48	107	153	189	217	239	255	287	307	314	
	iv	400	394	375	345	312	280	236	184	117	44	-12	-56	-90	-116	-137	-153	-183	-202	-209	
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
INR	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1
JPY	i	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	ii	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
	iii	-65	-63	-59	-51	-43	-35	-23	-10	7	25	40	51	59	66	71	76	83	88	90
	iv	80	79	74	67	60	52	42	30	15	-2	-15	-25	-32	-39	-43	-47	-54	-58	-60
	v	100	99	96	91	86	80	73	65	54	42	32	25	20	15	12	9	4	1	0
	vi	-100	-99	-96	-91	-86	-80	-73	-65	-54	-42	-32	-25	-20	-15	-12	-9	-4	-1	0

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
KRW	i	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	ii	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300
	iii	-260	-255	-242	-221	-196	-174	-142	-104	-56	-3	37	69	93	113	127	139	161	174	179	
	iv	320	315	302	281	256	234	202	164	116	63	23	-9	-33	-53	-67	-79	-101	-114	-119	
	v	400	396	384	364	342	321	293	258	214	167	130	101	79	61	48	37	18	5	1	
	vi	-400	-396	-384	-364	-342	-321	-293	-258	-214	-167	-130	-101	-79	-61	-48	-37	-18	-5	-1	
MXN	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269	
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179	
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
RUB	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400		
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269	269	269	
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179	-179	-179	
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	1	1	
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	-1	-1	
SAR	i	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
	ii	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
	iii	-195	-192	-182	-165	-147	-130	-106	-78	-42	-3	28	52	70	84	96	104	121	131	134	134	134	134
	iv	240	237	227	210	192	175	151	123	87	48	17	-7	-25	-39	-51	-59	-76	-86	-89	-89	-89	-89
	v	300	297	288	273	257	241	219	194	161	125	97	76	59	46	36	28	13	4	1	1	1	1
	vi	-300	-297	-288	-273	-257	-241	-219	-194	-161	-125	-97	-76	-59	-46	-36	-28	-13	-4	-1	-1	-1	-1

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
SEK	i	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	ii	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
	iii	-195	-192	-182	-165	-147	-130	-106	-78	-42	-3	28	52	70	84	96	104	121	131	134	
	iv	240	237	227	210	192	175	151	123	87	48	17	-7	-25	-39	-51	-59	-76	-86	-89	
	v	300	297	288	273	257	241	219	194	161	125	97	76	59	46	36	28	13	4	1	
	vi	-300	-297	-288	-273	-257	-241	-219	-194	-161	-125	-97	-76	-59	-46	-36	-28	-13	-4	-1	
SGD	i	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
	ii	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150
	iii	-130	-128	-121	-110	-98	-87	-71	-52	-28	-2	19	34	47	56	64	70	80	87	90	
	iv	160	158	151	140	128	117	101	82	58	32	11	-4	-17	-26	-34	-40	-50	-57	-60	
	v	200	198	192	182	171	161	146	129	107	83	65	51	39	31	24	19	9	3	0	
	vi	-200	-198	-192	-182	-171	-161	-146	-129	-107	-83	-65	-51	-39	-31	-24	-19	-9	-3	0	

Annex 2

Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
TRY	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400		
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269	269	269	
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179	-179	-179	
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	1	1	
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	-1	-1	
USD	i	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
	ii	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
	iii	-195	-192	-182	-165	-147	-130	-106	-78	-42	-3	28	52	70	84	96	104	121	131	134	134	134	134
	iv	240	237	227	210	192	175	151	123	87	48	17	-7	-25	-39	-51	-59	-76	-86	-89	-89	-89	-89
	v	300	297	288	273	257	241	219	194	161	125	97	76	59	46	36	28	13	4	1	1	1	1
	vi	-300	-297	-288	-273	-257	-241	-219	-194	-161	-125	-97	-76	-59	-46	-36	-28	-13	-4	-1	-1	-1	-1

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Standardized interest rate shock scenarios

Maturity bucket Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
ZAR	i	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	ii	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
	iii	-325	-319	-301	-272	-239	-208	-165	-114	-48	22	77	120	153	179	199	215	244	263	269	269
	iv	400	394	376	348	316	286	244	194	130	62	8	-33	-66	-91	-111	-126	-155	-173	-179	-179
	v	500	495	480	455	428	402	366	323	268	208	162	126	98	77	60	47	22	6	1	1
	vi	-500	-495	-480	-455	-428	-402	-366	-323	-268	-208	-162	-126	-98	-77	-60	-47	-22	-6	-1	-1

Annex 2

Standardized interest rate shock scenarios

For all other currencies, the interest rate shocks depending on the maturity listed in the last table “ETC” apply. For currencies explicitly listed and where these make up less than 10% of assets or liabilities of total assets, these values may be used optionally.

Maturity bucket		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Scenario		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ETC	i	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	ii	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300	-300
	iii	-227	-223	-211	-191	-169	-147	-118	-83	-38	10	48	77	100	118	131	142	162	175	179
	iv	280	276	264	244	222	201	173	138	94	47	9.9	-19	-41	-59	-72	-83	-102	-115	-119
	v	350	346	336	319	299	281	256	226	187	146	114	88	69	54	42	33	15	4	1
	vi	-350	-346	-336	-319	-299	-281	-256	-226	-187	-146	-114	-88	-69	-54	-42	-33	-15	-4	-1

Contacts

Philipp Rickert

Partner, Head of Financial Services,
Member of the Executive Committee
Zurich
Tel. +41 58 249 42 13
prickert@kpmg.com

Helen Campbell

Partner, Banking Transformation
Tel. +41 58 249 35 01
hcampbell@kpmg.com

Thomas Dorst

Partner, Assurance & Regulation
Tel. + 41 58 249 54 44
tdorst@kpmg.com

Nicolas Moser

Partner, Geneva Office
Tel. +41 58 249 37 87
nmoser@kpmg.com

www.kpmg.ch

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