Implementing BCBS 368 (Interest Rate Risk in the Banking Book) in Switzerland

The Basel Committee on Banking Supervision (BCBS) finalised its Pillar 2 capital framework for Interest Rate Risk in the Banking Book (IRRBB) in April 2016. The new framework replaces its previous version from 2004 and sets out nine principles for banks and three principles for supervisors for the management and supervision of IRRBB.

The key upgrades triggered by the financial crisis and the following long period of low interest rates can be summarised below.

IRRBB process	Enhanced guidance on the expectations around a bank's IRRBB process: models used, shock and stress scenarios, key behavioural assumptions and validation processes for the internal measurement systems
Credit spread risk in the banking book (CSRBB)	Banks need to monitor and assess CSRBB in the IRRBB management framework. CSRBB is defined as spread risk of credit-risky instruments which is not explained by IRRBB, nor by the expected credit/jump-to-default risk
Disclosures	More comprehensive and standardised disclosures promote consistency, transparency and comparability, including a quantitative reporting based on a set of common interest rate shock scenarios
Outlier banks	A tighter 15% threshold applied to the sensitivity of interest rate shocks to Tier 1 capital (previously 20%)
Supervisory process	Elements that supervisors should consider when assessing the bank's level and management of IRRBB exposures

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FINMA implementation of IRRBB

FINMA proposed in a consultation in Q4 2017 to adapt the Basel IRRBB by 1 January 2019 whereby the relevant FINMA Circular is yet to be finalised (refer to the appendix for an unofficial translation).

The following points are important:

- FINMA decided **not** to require by default the Basel Committee optional standardised approach which will have come with some relief for banks
- Instead, to promote market discipline, FINMA requires public disclosures that go beyond the requirements of the Basel Committee. These relate to repricing dates by position types which banks will have to disclose in a separate table. The new annual disclosures will be required from 1 January 2019, i.e. will be effective 31 December 2019 for most banks
- FINMA also upgraded the SNB/FINMA Interest Rate Risk Report which is required from stand-alone banks (quarterly) and consolidated banks (semi-annually). Branches of foreign banks are excluded. The implementation date of the new form is 31 March 2019
- In adapting the Basel Committee principles 10 to 12, FINMA will require additional information from outlier banks and may impose additional capital requirements should the specific circumstances require such measures. For the assessment of banks' IRRBB approaches, FINMA will in principle rely on the work of the external auditors but will also continue with on-site audits

Basel Committee principles on IRRBB for banks

1. IRRBB elements
IRRBB must be identified, measured, monitored and controlled. In addition, banks should monitor and assess CSRBB.

2. Governing body
The governing body of each bank is responsible for oversight of the IRRBB management framework, and the bank's risk appetite for IRRBB. Monitoring and management of IRRBB may be delegated by the governing body to delegates. Banks must havean adequate IRRBB management framework, involving regular independent reviews and evaluations of the effectiveness of the system.

3. Risk appetite
Banks' risk appetite for IRRBB should be articulated in terms of the risk to both economic value and earnings. Banks must implement policy limits that target maintaining IRRBB exposures consistent with their risk appetite.

4. IRRBB measurement
Measurement of IRRBB should be based on outcome of both economic value and earning-based measures, arising from a wide and appropriate range of interest rate shock and stress scenarios.

5. Assumptions
In measuring IRRBB, key behavioural and modelling assumptions should be fully understood, conceptually sound and documented. Such assumptions should be rigorously tested and aligned with the bank's business strategies.

6. Measurement and model validation
Measurement systems and models used for IRRBB should be based on accurate data, and subject to appropriate documentation, testing and controls to give assurance on the accuracy of calculations. Models used to measure IRRBB should be comprehensive and covered by governance processes for model risk management, including a validation function that is independent of the development process.

7. Internal Reporting
Measurement outcomes of IRRBB and hedging strategies should be reported to the governing body or its delegates on a regular basis, at relevant levels of aggregation (by consolidation level and currency).

8. External disclosures
Information on the level of IRRBB exposure and practices for measuring and controlling IRRBB must be disclosed on a regular basis.

9. Capital adequacy
Capital adequacy for IRRBB must be specifically considered as part of the Internal Capital Adequacy Assessment Process (ICAAP) approved by the governing body.

Action points

All banks
We would expect that principles 1 to 7 around the governance and expectations on the identification, measurement, monitoring, control and management of IRRBB are in some form already in place at many banks in Switzerland. This also applies to principle 9 concerning the internal capital adequacy assessment processes (ICAAP) for IRRBB. This is consistent with the comments made by FINMA in its consultative report.

Banks will nevertheless need to perform a gap analysis and then adapt the new framework in their asset and liability management processes. This will include incorporating the new IRRBB principles into policies and procedures, upgrading ALM and validation tools, reassessing assumptions and revising the internal governance, reporting and escalation of market events and movements in sensitivities.

Importantly, for principle 8, "public disclosures", all banks will be required to implement the revised regulatory reporting on interest rate risks and the standardised EVE (Economic Value of Equity) and NII (Net Interest Income) calculations which will be subject to annual disclosure requirements.

The key reform costs will arise from the implementation of the standardised and possibly additional internal EVE scenario calculations and the implementation of the revised SNB/FINMA Interest Rate Risk Report.

In that latter context, banks should participate in the dry run FINMA will offer for 31 March 2018 to test the new quarterly reporting requirements and calculate the standardised EVE and NII sensitivities in advance of the go-live in 2019. This will allow banks to compare the new standardised sensitivities to their existing ALM framework and take any necessary action (to be no outlier) on a timely basis.

For the standardised EVE calculations, banks will need to assess whether they continue to discount cash flows with risk-free rates which could push them towards an outlier or whether they would invest in a model that allows them to discount future cash flows with rates that include a commercial margin.

Finally, banks should rethink their existing deposit characterisation when the country enters a rising interest rate environment after nearly a decade of low or negative interest rates. The currently used replication factors may have been calibrated during a time when most banks were overwhelmed with deposits, which are the main source of funding for many banks.

It is difficult to predict though how quickly money will leave the balance sheets of banks once higher returns will be available elsewhere. For that purpose banks will require well-designed "what if" scenarios to make good decisions in an environment of increasing interest rates.

Category 4 to 5 banks (small banks)
The steps that FINMA envisions to make IRRBB more proportional for category 4 and 5 banks only impact a certain number of principles. This means that smaller banks still have to implement the vast majority of the IRRBB framework. This demonstrates the motivation of FINMA that the exclusions are primarily driven by the procedures, models and IT systems employed by smaller banks as opposed to their general interest rate risk profiles.

Specifically, the potential exclusions for category 4 and 5 banks are:

Principles	*Exclusions*	*Implications*
Shock scenarios (principle 4)	If a bank can demonstrate that the standardised prescribed interest rate shocks are commensurate for their interest rate risk profile, the following scenarios are not required: • Internally selected interest rate shocks addressing the bank's risk profile, according to its ICAAP • Historical and hypothetical interest rate stress scenarios, which tend to be more severe than shocks Additionally, no qualitative and quantitative reverse stress tests are required. These address tail risks by starting from a known stress test outcome and then asking what events could lead to such an outcome for the financial institution.	Only the six prescribed interest rate shock scenarios and any additional interest rate shock scenarios that FINMA may require. Unless required by FINMA, no scenarios of negative interest rates will have to be considered.
Behavioural and modelling assumptions (principle 5)	If a bank can demonstrate that behavioural and modelling assumptions have not changed significantly, no annual review of such assumptions is required.	Instead, assumptions will have to be reviewed at least every three years.
Data integrity and validation (principle 6)	The validation of data, measurement, models and parameters can be implemented in a simplified manner.	Validation is only required based on significant changes, at the minimum every three years.
IRRBB exposures and disclosures (principle 8)	For Economic Value of Equity (EVE) calculations, cash flows can be discounted with a risk-free rate regardless of whether commercial margins are included in the cash flows in the first place.	Considerable simplification even though using risk-free rates without commercial margins will lead to higher EVE sensitivities.
Capital adequacy (ICAAP) (principle 9)	The factors provided to assess the capital adequacy are not applicable.	Instead, category 4 and 5 banks will assess the capital adequacy for their IRRBB with simpler measures such as the size of interest income relative to overall income.

How PwC can help

- **Identify** banking book on- and off-balance-sheet interest rate risk exposures, establish **behavioural assumptions** and conduct behavioural **model validations**
- Design and implement IRRBB **stress testing methodologies** including the required base scenarios
- Implement **hedging strategies** by identifying appropriate instruments and strategies considering risk tolerance and costs/benefits
- Design and validate **interest rate derivative valuations** and modelling assumptions
- Provide interest rate related **accounting assistance** to address derivative accounting issues and compliance requirements
- Assess independence and governance controls, assist in developing **IRRBB policies, processes and procedures**
- Evaluate IRRBB risk appetite, tolerances, capital allocations and monitor capital adequacy **(ICAAP)**
- **BCBS 368 gap analysis**, pre-audits and project support in FINMA dry runs

Appendix: Unofficial translation of consultative FINMA documents

Draft Circular 2018/xx interest rate risks – banks

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

Reference:	FINMA circ. 18/xx "Interest rate risks – banks"
Issued:	…
Entry into force:	1 January 2019
Concordance:	Previously FINMA circ. 08/6 "Interest rate risks – banks", dated 20 November 2008
Legal basis:	FINMASA art. 7 para. 1 lit. b, 29 para. 1 BankA art. 4 BankO art. 12 SESTO art. 19 CAO art. 45, 96
Appendix:	Outlier banks: identification, assessment and actions

Addressees		
X	Banks	**BankA**
X	Financial groups and congl.	
	Other intermediaries	
	Insurers	**IOA**
	Insurance groups and congl.	
	Intermediaries	
X	Securities traders	**SESTA**
	Trading platforms	**FMIA**
	Central clearing houses	
	Central securities depositories	
	Trade repository	
	Payment systems	
	Participants:	
	Fund mgmt co.	**CISA**
	SICAV	
	Limited partnerships for CIS	
	SICAF	
	Custodian banks	
	CIS asset managers	
	Distributors	
	Foreign reps. of CIS	
	Other intermediaries	
	SRO	**AMLA**
	DSFI	
	SRO-supervised institutions	
	Audit firms	**Others**
	Rating agencies	

Table of contents

I. Subject, scope of application

This circular describes the minimum standards for the measurement, management, monitoring and control of interest rate risks in the banking book and provides more details regarding art. 12 of the Banking Ordinance (BankO; SR 952.02), art. 19 of the Stock Exchange Ordinance (SESTO; SR 954.11) as well as art. 45 and 96 of the Capital Adequacy Ordinance (CAO; SR 952.03). It contains specifications relating to FINMA circular 2017/1 "Corporate governance – banks".

The scope of application of this circular comprises all positions that do not fulfil the provisions of art. 5 CAO (trading book). A holistic consideration of all interest rate risks, both inside and outside the trading book, must still be performed on at least a periodic basis.

The measurement, management, monitoring and control of interest rate risks in the banking book has to be performed at the level of the individual institution and on a consolidated (group) basis. If the interest rate risks in the banking book undertaken by the banking or financial organisations controlled by the bank are immaterial, individually or in aggregate, in relation to those undertaken by the bank itself, they may be excluded from the consolidated approach with the consent of the external auditor. The bank shall ensure by means of policies, limits and other provisions that these entities have not undertaken any material interest rate risks in the banking book.

The present circular does not apply to securities dealers that do not have a banking licence provided they do not undertake material interest rate risks outside the trading book. The external auditor shall confirm this is so.

II.Basel Committee minimum standards

The present circular is based on the Basel Committee's minimum standards for interest rate risks in the banking book:

- "Interest rate risk in the banking book" of April 2016 (IRRBB)[1]

In the following descriptions, references to the text of the Basel standards are enclosed in square brackets.

III. Fundamentals

[IRRBB§8] Interest rate risk in the banking book[2] is the risk to the bank's capital and earnings arising from movements in interest rates. Changes in interest rates affect the economic value of a bank's assets, liabilities and off-balance-sheet items (economic value approach). They also affect earnings from interest rate operations (earnings-based approach).

[IRRBB§9] Interest rate risks can take three forms:

1. Gap risk arises from the term structure or differences in the timing of rate changes of assets, liabilities and off-balance-sheet items.
2. Basis risk describes the impact of relative changes in interest rates for financial instruments that have similar tenors but are priced using different interest rates.
3. Option risk arises from options or from optional elements embedded in a bank's assets, liabilities and/or off-balance sheet items, where the bank or its customer can alter the level and timing of their cash flows (e.g. deposits without fixed maturity, term deposits or fixed-rate loans).

[IRRBB§10] Changes in interest rates can lead indirectly to changes in credit worthiness (solvency effect)[3] without a jump to default.

The principles of the present circular are to be applied depending on the size of the bank as well as the type, scope, complexity and riskiness of the business activities (principle of proportionality). Small banks according to mn 15 are exempted from implementing certain margin numbers of the present circular.

Category 4 and 5 banks according to Annex 3 BankO are classified as "small banks" for the purposes of the present circular. FINMA is authorised to relax or tighten the rules in individual cases.

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. In doing so, solvency effects must also be taken into consideration.

B. Principle 2: Governing body
[IRRBB§16–27] The governing body or its delegates are responsible for the oversight and approval of an appropriate framework relating to interest rate risks and for establishing the risk tolerances for interest rate risks.

[IRRBB§17] The governing body or its delegates establish requirements for the measurement, monitoring and control of interest rate risks consistent with the approved strategies and policies. This includes provisions relating to interest rate shock and stress scenarios.

C. Principle 3: Risk tolerance
[IRRBB§29–31] The risk tolerance relating to interest rate risks has to be formulated for the economic value approach and the earnings-based approach. In doing so, appropriate limits shall be set that are based on risk tolerance in relation to the short-term and long-term impacts of interest rate movements and meaningful shock and stress situations. In order to limit maturity transformation, limits may also be formulated for the earnings-based approach.

D. Principle 4: Internal interest rate risk measurement system
The measurement of interest rate risk is based on a broad and appropriate range of interest rate shock and stress scenarios.

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

- Internally selected interest rate shock scenarios that address appropriately the bank's risk profile;
- Historical and hypothetical interest rate stress scenarios, which tend to be more severe than the scenarios as per mn 22;

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

[2] In the following, the term "interest rate risks" is used.

[3] The credit spread risk in the banking book.

- The six interest rate shock scenarios[4]; and
- Additional interest rate shock scenarios required by FINMA.

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

[IRRBB§41–42] When developing interest rate shock and stress scenarios for interest rate risks, the following should be considered:

- Severe and plausible interest rate shock and stress scenarios.
- The existing level of interest rates and the interest rate cycle as well as interest rate risk concentrations, interest rate volatility, solvency effects, interactions with other types of risk, balance sheet structure effects, changes in the accounting rules and customer terms.
- Hypothetical assumptions: for changes in portfolio composition due to factors under the control of the bank as well as external factors; for new products where only limited historical data are available; for new market information and new emerging risks.

[IRRBB§43] Banks should consider interest rate risk as part of qualitative and quantitative stress tests[5] that assume a severe worsening of its capital and earnings in order to reveal vulnerabilities arising from its hedging strategies and the potential behavioural reactions of its customers. Small banks, as defined by mn 15, may perform qualitative stress tests only.

If a small bank, as defined by mn 15, can verifiably justify and document that the interest rate shock scenarios according to mn 24 and 25 are appropriate for the interest rate risks undertaken, it may limit itself to these; in such cases, mn 22–23 and 26–30 do not apply.

E. Principle 5: Modelling assumptions
[IRRBB§46–51] The key behavioural and other modelling assumptions used to measure interest rate risks are conceptually sound and reasonable, and consistent with historical experience. The key modelling assumptions and their impact on interest rate risk shall be reviewed at least annually and matched to the bank's business strategies.

Smaller banks, as defined by mn 15, are exempted from a minimum annual review of the modelling assumptions and their impact if it can verifiably justify and document that the business model, the client and product structure, the market conditions and other factors relevant to the modelling assumptions have not changed significantly. The modelling assumptions and their impact must be reviewed every three years, however.

F. Principle 6: Data integrity and validation
[IRRBB§52–65] Interest rate risk measurement systems and models used for interest rate risks shall be based on accurate data and appropriately documented, tested and controlled. They should form part of a risk framework and be subject to an independent and adequately documented validation.

[IRRBB§52–54] A variety of methodologies shall be used under both the economic value and earnings-based approaches, ranging from static simulations to more dynamic modelling techniques for the earnings-based approach.

[IRRBB§57] The internal interest risk measurement system must be able to compute the economic value and earnings-based risks based on the scenarios set out in mn 22–25.

Small banks, as defined by mn 15, can choose an appropriate, simplified implementation for data validation, interest rate risk measurement systems, models and parameters according to mn 35 and 37. The implementation specifically takes into account the simpler organisational structure of such banks (e.g. no independent validation function). However, a validation has to be undertaken if significant changes occur to data, interest rate risk measurement systems, models and parameters, and at least every three years.

G. Principle 7: Reporting
[IRRBB§66] The governing body or its delegates are regularly informed (at least every six months) about the extent and the development of interest rate risks as well as their measurement, management, monitoring and control.

[IRRBB§67] The reports include at least the interest rate risk exposure (including under stress scenarios), the degree to which limits are reached and key modelling assumptions.

H. Principle 8: Disclosure
[IRRBB§69-71] The disclosure requirements are based on FINMA circular 2016/1 "Disclosure – banks".

I. Principle 9: Internal risk capacity
[IRRBB§72, 74] In determining the level of capacity the institution should hold in accordance with FINMA circular 2011/2 "Capital buffer and capital planning – banks", the institution includes all of the risk types relevant to it and demonstrates, if relevant, that it holds adequate risk capital for the interest rate risk according to mn 8.

[IRRBB§73] The appropriate level of risk capital is not based exclusively on the results of FINMA's quantitative evaluation process to identify potentially unduly high interest rate risks.

[IRRBB§75–76] The capital adequacy assessments should give appropriate consideration to the factors relevant to the institution and specifically:

- the limits and whether these limits are reached;
- the effectiveness and expected cost of hedging measures; and
- the allocation of capital relative to risks across the (legal) organisational entities.

Mn 44 does not apply to small banks, as defined by mn 15.

V. Data collection and data assessment

[IRRBB§77–79, Principle 10] With the exception of branches of foreign banks, banks submit to FINMA, on a regular basis and by means of a form specified by FINMA, information on their interest rate risks at both the level of the individual institution and a consolidated (group) level.

[IRRBB§88–95, Principle 12] The criteria for the definition and treatment of outlier banks, which FINMA applies during its assessment, are described in Annex 1.

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4 www.bis.org > Committees & associations > Basel Committee on Banking Supervision > Publications > Interest rate risk in the banking book > Annex 2

5 So-called *reverse* stress tests in accordance with Principle 9 of the "Principles of sound stress testing practices and supervision", published by the Basel Committee in May 2009. They can be downloaded at www.bis.org > Committees & associations > Basel Committee on Banking Supervision > Principles for sound stress testing practices and supervision.

Draft FINMA annex to Circular 2018/xx

Outlier banks: Identification, assessment and actions

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

[IRRBB§88-95] FINMA identifies outlier banks in accordance with mn 2 and 5 of this annex.

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

- The change in the economic value of equity (based on payment flows according to the data collected as per mn 49 of the present circular) under at least one of the interest rate shock scenarios (as per mn 24 of the present circular) amounts to at least 15% of its Tier 1 capital.
- The amount of the change in the economic value of equity (according to mn 3) calculated by applying the reporting institution's assumptions as well as market-conform assumptions (for comparison purposes).
- Criteria to identify inadequate interest rate risk management:
- Deficiencies relating to compliance with Principles 1 to 9.

II. Assessment of outlier banks

FINMA assesses outlier banks individually.

FINMA assesses outlier banks on a case-by-case basis, applying the following criteria:

- Capital adequacy in relation to the interest rate risks and the earnings position.
- Responsiveness to interest rate shocks and stress scenarios. In doing so, the impacts on financial assets stated at market value and the potential impacts of the revaluation of financial assets stated at amortised acquisition costs are considered.
- Assumptions and parameters relating to margin payments and other spread components based on credit rating; to deposits without fixed maturity; to the allocation of capital to risk types and entities; and to anticipated repayments or withdrawals.
- With regard to the earnings situation, the size and stability of the earnings and their influence on the future business activities, including dividend payments, will be assessed.

III. Actions

If FINMA's assessment of outlier banks identifies in some cases that interest rate risk management is inadequate or that the interest rate risk is inappropriate in relation to the capital (taking into account the adequacy target level 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 risks), FINMA can require additional capital to be held (in accordance with art. 45 CAO) or other actions to be taken.

The measures in accordance with mn 13 specifically comprise the following: reducing the interest rate risks, limiting the assumptions or parameters of the internal interest rate risk measurement system, improving the interest rate risk framework or replacing the internal interest rate risk measurement system by the standardised framework of the Basel Committee standards for interest rate risk in the banking book in accordance with mn 6 of this circular [IRRBB§100- 132].