Annex 1: Supervisory benchmarks for the setting of Pillar 2 additional own funds requirements for credit and concentration risk

Introduction

This document is an Annex to *Common criteria and methodologies for SREP* (Ytri viðmið og aðferðafræði vegna könnunar- og matsferlis hjá fjármálafyrirtækjum) which describes the criteria, procedures and methodology applied in the FME's assessment of institutions' overall risk level and need for capital, i.e. SREP. The methodology of the FME is based on the European Banking Authority's *Guidelines on common procedures and methodologies for SREP*.[1]

Building on chapter 2.4.3 in the main text, this Annex further elaborates on specific supervisory benchmark calculations used by FME to inform the setting of Pillar 2 capital for credit risk and concentration risk. Additional own funds requirements are determined on a risk-by-risk basis, using supervisory judgement, supported by the ICAAP calculations of institutions, the outcome of supervisory benchmarks and other relevant inputs, including those arising from dialogue with the institutions.

Supervisory benchmarks and *benchmark calculations* refer to risk-specific quantitative tools developed by the FME to provide an estimation of additional own funds needed to cover risks or elements of risk not covered by the Regulation (EU) No 575/2013[2], cf. Regulation No 233/2017[3] or to further support the determination of risk-by-risk additional own funds requirements where ICAAP calculations for those material risks, or elements of such risk, are considered insufficient or are unavailable. Given the variety of different business models, the outcome of the supervisory benchmarks may not be appropriate in every instance for every institution. The benchmarks calculations have been constructed adequately so as to avoid double counting.

1. Credit risk

Institutions' capital requirements for credit risk are generally determined under Pillar 1 in accordance with Regulation (EU) No 575/2013, cf. Regulation No 233/2017. According to FME's assessment, risk for certain asset classes is not appropriately covered by the standardised approach. Therefore, it regularly assesses the need for additional own funds for credit risk, under Pillar 2, as a part of its SREP. This chapter sets out the methodology and the supervisory benchmarks the FME uses in its assessment.

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[1] EBA/GL/2014/13: Guidelines on common procedures and methodologies for SREP:
https://www.eba.europa.eu/documents/10180/935249/EBA-GL-2014-
13+(Guidelines+on+SREP+methodologies+and+processes).pdf

[2] Regulation (EU) No 575/2013: http://eur-lex.europa.eu/legal-
content/EN/TXT/PDF/?uri=CELEX:32013R0575&from=en

[3] Reglugerð um varfærniskröfur vegna starfsemi fjármálafyrirtækja, nr. 233/2017:
https://www.reglugerd.is/reglugerdir/eftir-raduneytum/fjarmala--og-efnahagsraduneyti/nr/0233-2017

1.1. Holding companies with limited debt repayment capacity

Loans to holding companies that do not have independent cash flow generally pose more risk than loans to operating companies with independent cash flow. FME regards 150% risk weight to be appropriate for loans to holding companies irrelevant of securities pledged for the loans. If the value of pledged shares and the haircut applied is too low in the opinion of the FME, further capital will be required to meet the supervisory benchmark (see chapter 1.3 below). A holding company is considered to have independent cash flow if it fulfills either of the following conditions:

a) The parent company's cash flow is sufficient to pay its debt.

b) Operating companies that are subsidiaries of the holding company do not have any long-term debt and are prohibited from borrowing long-term.

Benchmark calculations for additional capital needs (K) because of holding companies with limited debt repayment capacity:

$$K = (X - Y) * Book\ value\ of\ loans * 8\%$$

	X	Y
Corporates	150%	100%
Retail	150%	75%

1.2. Non-performing exposures and forbearance

The FME has developed a methodology to classify assets according to quality, currently embedded in the Loan Portfolio Analysis Report (LPAR). The basis of the non-performing definition in LPAR is the cross-default methodology and a strict definition of loans in forbearance status.[4] FME considers appropriate to hold own funds under Pillar 2 for loans that are categorized as non-performing according to LPAR or have had a performing status for less than a year, and are not already reported in COREP as defaulted. Benchmark calculations for additional capital needs (K) because of non-performing exposures are as follows:

$$K = (X - Y) * Book\ value\ of\ loans * 8\%$$

	X	Y
Corporates	150%	100%
Retail	150%	75%
Regional Governments	150%	20%
Real estate: Loans fulfilling conditions for 35% risk weight	100%	35%
Real estate: Loans fulfilling conditions for 50% risk weight	100%	50%
Real estate: Loans fulfilling conditions for 75% risk weight	150%	75%
Real estate: Loans fulfilling conditions for 100% risk weight	150%	100%

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[4] The methodology for asset classification embedded in the LPAR generally provides more information for FME of the inherent risk of loan portfolios and is less dependent on institutions' own judgement than the methodology of the COREP or FINREP reports. The requirement to complete a monthly LPAR is currently under review and this supervisory benchmark calculation may be amended in the future.

1.3. Cases where the book value of a loan is based on the value of pledged assets rather than cash flow from regular operations

In cases where the value of a loan is based on the value of pledged assets rather than regular cash flow from the operations of a obligor, irrespective of performing status, the FME is deems appropriate that the pledged assets should be valued by using a best estimate of their value and prudent haircuts to meet liquidity risk, cost of collection, the periods until pledged assets are liquidated and maintenance costs for some type of assets. The FME regards the following haircuts for different assets classes as prudent:

Asset classes	Haircut
Cash	0%
Residential housing	15%
Commercial real estate	20%
Land ready for development	25%
Vehicles	30%
Agriculture land	30%
Raw land	35%
Listed shares on the main index	50%
Other pledged assets	50%
Receivables	50%
Listed shares on the secondary index (First North)	60%
Unlisted shares	70%
Inventory	70%
Fishing quota (see Chapter 1.3.1 below)	Table 1 below

Benchmark calculations where the book value of the loan is based on the value of pledged assets rather than cash flow from regular operations:

$$K = M - (M * RW * 8\%)$$

$$M = B - E + (H * E)$$

    RW: risk-weight of the loan

    B: Book value of loan

    E: Fair value estimate[5]

    H: Haircut

    M: Overvaluation of loan

    K: Additional capital needs

Example: The overvaluation (M) of a holding company were the only asset is 1.200 m ISK worth of unlisted shares with a debt of 1.000 m ISK with no specific credit adjustment (CV = BV) would be:

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[5] Fair value is defined as a sale price agreed upon by a willing buyer and seller, assuming both parties enter the transaction freely.

$$M = 640\ m\ ISK = 1.000\ m\ ISK - 1.200\ m\ ISK - (70\% * 1.200\ m\ ISK)$$

The benchmark calculations for additional capital needs would be as follows:

$$K = 603\ m\ ISK = \ 640\ m\ ISK - (640\ m\ ISK * 100\% * 8\%)$$

1.3.1 Prudent haircuts for fishing quotas[6]

In general, there is great uncertainty about the value of fishing quota. Transactions in the market for fishing quota in Iceland are usually low in volume (small individual transactions). The current market price of quota is therefore not always considered to reflect the fair value of fishing quota in transactions of higher volume.

Fair value of quota is estimated from total value of the fishing industry. Risk from possible changes in total allowable catch and price fluctuations are the predominant factors in the estimation of prudent haircuts. Probability of catch failure, specifically in pelagic species, is considered.

The value estimations presented below are only estimations of the quota value, excluding the vessels they are attached to, cf. Ch. III E. of Act No 75/1997.[7] However, it should be noted that quotas cannot be pledged individually and are only considered as collateral as a part of a pledged fishing vessel they are attached to, cf. Par. 4 of Art. 3 of Act No 75/1997.

In view of the above, the FME has developed an estimate of the value of fishing quota. The results are presented in Table 1:

Table 1 Prudent haircuts for valuation of fishing quota

Species	Fair Value of Fishing Quota in 2014 in the Common Quota System (ISK/Kg)	Fair Value of Fishing Quota in 2014 in the Longline Quota System (ISK/Kg)	Fair Value of Fishing Quota in 2017 in the Common Quota System (ISK/Kg)	Fair Value of Fishing Quota in 2017 in the Longline Quota System (ISK/Kg)	Haircut 2014	Haircut 2017
Þorskur / Cod	1.600	1.200	1.377	964	30%	30%
Ýsa / Haddock	1.410		1.527		30%	30%
Ufsi / Saithe	930	470	836	251	30%	
Karfi / Redfish	820		539		30%	
Djúpkarfi						100%
Litli karfi						100%
Úthafskarfi / Deepwater redfish	850		443		70%	70%
Steinbítur / Atlantic wolfish	1.200		791		30%	30%
Langa / Ling	1.310		673		30%	30%
Blálanga / Blue ling	730		471		70%	70%
Keila / Cusk	660		583		30%	30%
Skötuselur / Monkfish	1.810		1.137		30%	30%

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[6] The criterion on the estimated value of fishing quota was first published in a circular letter dated July 13, 2015, and made public on FME's website. The letter stated that this criterion could be republished as a part of the general criteria and methodology for SREP. Available here: https://www.fme.is/media/vidmid-fme/Dreifibref-til-lanastofnana-vegna-vidmida-Fjarmalaeftirlitsins-a-virdi-aflahlutdeilda.pdf

[7] Lög um samningsveð, nr. 75/1997: http://www.althingi.is/lagas/nuna/1997075.html

Gulllax / Atlantic argentine	440	267	70%	70%
Grálúða / Greenland halibut	1.690	2.199	30%	30%
Skarkoli / Plaice	1.010	484	30%	50%
Þykkvalúra / Lemon sole	1.080	865	30%	50%
Langlúra / Witch flounder	850	364	30%	50%
Sandkoli / Common dab	350	160	30%	50%
Skrápflúra / American plaice	370	112	30%	100%
Síld / Herring	460	163	60%	60%
N.Í síld / N.I. herring	520	0	70%	70%
Loðna / Capelin	570	206	70%	70%
Kolmunni / Blue whiting	130	148	80%	90%
Makríll / Mackerel	250	326	100%	100%
Humar / Lobster	14.700	13.375	30%	30%
Rækja / Shrimp	1.380	1.858	100%	100%

1.4. Debt criteria for highly indebted municipalities

A municipality is considered highly indebted if, simultaneously, its debt to income ratio is above 150% and if it does not meet certain minimums of working capital from operations to income, expressed in Table 2. If debt[8] to income is in excess of certain benchmarks (150%; 200%; 250%; 300%), the ratio of net working capital from operations (*í. veltufé frá rekstri*) to income has to be in excess of certain minimums (7,5%; 10%; 12,5%; 15%), attached to the debt benchmarks respectively in Table 2, to avoid the municipality from being considered highly indebted. As an example, if a municipality's debt ratio is 150%-199% of annual income, its ratio of working capital is required to be above 7,5% to avoid the municipality from being considered highly indebted.

Generally, municipalities with debt to income ratios lower than 150% are not considered heavily indebted, irrespective of their working capital to income ratio. Municipalities with working capital from operations higher than 15% of income are not considered heavily indebted, irrespective of their debt ratio.

Table 2 Municipalities – Debt criteria

Municipalities - Debt criteria				
Debt to income ratio	≥150%	≥200%	≥250%	≥300%
Working capital from operations to income ratio	<7,5%	<10%	<12,5%	<15%

Municipalities that meet both requirements of individual columns in Table 2 are generally considered highly indebted.

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[8] Consolidated balance-sheet (A and B parts combined).

Benchmark calculations for additional capital needs (K) because of loans to heavily indebted municipalities:

$$K = (X - Y) * Book\ value\ of\ loans * 8\%$$

	X	Y
Corporates	150%	100%
Retail	150%	75%
Regional Governments	150%	20%
Real estate: Loans fulfilling conditions for 35% risk weight	100%	35%
Real estate: Loans fulfilling conditions for 50% risk weight	100%	50%
Real estate: Loans fulfilling conditions for 75% risk weight	150%	75%
Real estate: Loans fulfilling conditions for 100% risk weight	150%	100%

1.5. High Volatility Commercial Real Estate (HVCRE)

HVCRE loans are all acquisition, development and construction (ADC) commercial real estate loans. Loans for permanent financing, where the underlying project is complete and no future advances will be made, are not considered HVCRE loans. Loans falling under the HVCRE definition will be subject to a 150% risk weight, except when all of the following conditions are met:

a) Loan to value (LTV) is less than or equal to 80%;

b) The borrower has contributed cash to the project of at least 15% of the real estate's appraised "as complete" value, prior to the advancement of funds by the bank; and

c) The borrower's contributed capital is contractually required to remain in the project until the credit facility is converted to permanent financing, sold or paid in full.

Benchmark calculations for additional capital needs (K) because of HVCRE loans:

$$K = (X - Y) * Book\ value\ of\ loans * 8\%$$

	X	Y
Corporates	150%	100%
Retail	150%	75%
Real estate: Loans fulfilling conditions for 35% risk weight	100%	35%
Real estate: Loans fulfilling conditions for 50% risk weight	100%	50%
Real estate: Loans fulfilling conditions for 75% risk weight	150%	75%
Real estate: Loans fulfilling conditions for 100% risk weight	150%	100%

1.6. Undrawn credit lines with a conversion factor of 0%

The Basel Committee states that consumer legislation, administrative restrictions in institutions and reputational risk will in practice make it difficult for institutions to cancel granted credit lines at the short notice required in order to use a zero conversion factor.[9] According to FME's assessment, granted credit lines where the institution has opted for a zero conversion factor are

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[9] https://www.bis.org/bcbs/publ/d347.pdf

generally not without risk. Thus, consideration should be given to setting a Pillar 2 capital add-on for these portfolios. Benchmark calculations for additional capital needs (K) because of off-balance sheet exposures with a zero conversion factor, in retail:

$$K = Off\ balance\text{–}sheet\ exposure\ of\ 0\%\ conversion\ factor * 10\% * 8\%$$

1.7. The conclusion of asset quality review

The FME regularly reviews the quality of loan portfolios of institutions. Based on AQR results, the FME may advise the concerned financial institution to review its valuation or instruct the institution to lower the amount of eligible own funds.

2. Concentration risk

This chapter sets out the methodology the FME uses to inform the setting of Pillar 2 capital for single name, sector and geographical credit concentration risk.

2.1. Single name concentration risk

Single name concentration risk captures risk from the granularity of the bank's exposures. Herfindahl-Hirschman Index (HHI) of exposure value is a good indicator of single name concentration within a portfolio and used by the FME as a supervisory benchmark:

$$\text{HHI}_{SN} = \sum_{i=1}^{n} \left(\frac{\text{EAD}_i}{\text{EAD}_{\text{Total net}}} \right)^2$$

EAD$_i$: Value of exposure **i**.

EAD$_{\text{Total net}}$: Total exposure value excluding exposures with 0% risk weight and exposures in default.

Additional capital requirements due to single name concentration risk thus becomes:

$$\text{K}_{SN} = 1{,}96 \cdot \text{HHI}_{SN} \cdot \text{EAD}_{\text{Net}}$$

Larger institution, and institutions with material concentration, should use more advanced methods for the assessment of single name concentration risk that at least takes into account the quality of the largest exposures.[10]

2.2. Sector concentration risk

Sector concentration risk captures risk due to concentration of exposures in one or few sectors. Standardized Herfindahl-Hirschman Index of total exposure value in individual sectors is an indicator of sector concentration and used by the FME as a supervisory benchmark:

$$\text{HHI}^{*}_{\text{Sector}} = \frac{n \cdot \text{HHI}_{\text{Sector}} - 1}{n - 1}$$

$$\text{HHI}_{\text{Sector}} = \sum_{i=1}^{n} \text{S}_i^2$$

S$_i$: Ratio of the exposure of sector **i** to the sum of all exposures.

n$_i$: Total number of sectors used.

The resulting value is compared to the value for the domestic market as a whole. If concentration is significantly more than generally in the market, additional capital requirements should be considered.

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[10] For example the method set forth by Gordy and Lütkebohmert (2007), 'Granularity adjustment for Basel II', Discussion Paper 01/2007, Deutsche Bank.

Additionally, larger institutions and institutions with material sector concentration should take into account the distribution of defaults in individual sectors, how much they fluctuate between years and how correlated they are with the domestic economy.

2.3. Geographical concentration risk

Geographical concentration risk captures risk due to concentration of exposures in one or few countries. Herfindahl-Hirschman Index of total exposure value in individual countries is a good indicator of geographical concentration and used by the FME as a supervisory benchmark:

$$\text{HHI}_{GC} = \sum_{i=1}^{n} s_i^2$$

s_i: Exposure in country i.

Domestic exposures are considered riskier, resulting in higher capital requirements for those institutions that do not use the internal ratings based method.

Table 3 Additional capital requirements of exposures in Iceland

Exposure class	Line	Risk-weight		
		P I	PII	$\Delta_{x\%}$
Regional government & Institutions	180	20%	24%	4%
Mortgage	190	35%	42%	7%
Commercial real estate	200	50%	61%	11%
Retail	220	75%	80%	5%
Corporate & other	230	100%	109%	9%