DANMARKS NATIONALBANK

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STRESS TEST

Banks are less resilient to stress

Some systemic banks fall short of their buffer requirements
A few of the systemic banks fall short of their capital buffer requirements in a severe recession scenario and should consider whether they maintain a sufficient distance to their capital requirements.

Weaker earnings are squeezing the banks
The banks generally fare worse than in previous stress tests. One of the reasons is that earnings are weaker than in the last few years, which means that the banks are less resilient in a stress scenario.

Banks are challenged by the MREL
If the banks are to satisfy the MREL in a stress scenario, it is essential that they hold ample capital or MREL-eligible instruments with long maturities. The stress test shows that in the severe recession scenario, the banks need to issue new MREL-instruments in substantial amounts to satisfy their requirements.

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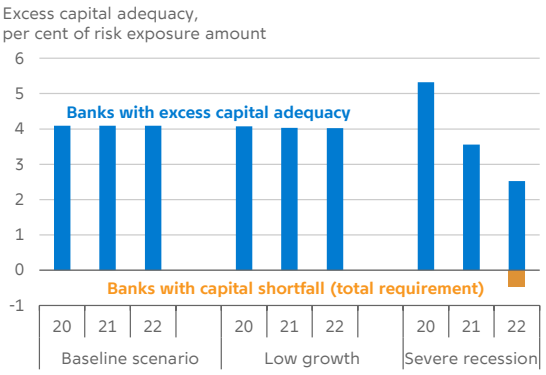
Danmarks Nationalbank performs a semi-annual stress test of the Danish banking sector. The stress test comprises the largest Danish banks.[1] In the stress test, the banks' capital ratios are compared with the current capital requirements in three scenarios: a baseline scenario, a low growth scenario and a severe recession scenario.[2] The purpose of the stress test is to assess the financial system overall, and consequently results are not published for individual banks.

Compared with the spring stress test, more banks either fall short of or are close to falling short of their capital buffer requirements.[3] One of the reasons is that earnings have been weaker, which means that the banks have smaller surpluses to draw on in a stress scenario. Furthermore, despite the sizeable profits in recent years, many banks have failed to strengthen their capitalisation. In view of the weaker earnings, the banks should reconsider whether the distance between their capitalisation and the aggregate buffer requirement is sufficient.

Some systemic banks fall short of their buffer requirements Chart 1



Note: The chart shows the excess capital adequacy or capital shortfall of the systemic banks that either have excess capital adequacy or a capital shortfall as percentages of the total risk exposure amounts of the systemic banks. The excess capital adequacy in 2020 is higher in the recession scenario than in the other scenarios because the countercyclical buffer is presumed to be released in the recession scenario.
Source: Danish Financial Supervisory Authority and own calculations.

A few systemic banks fall short of their risk-based capital requirements

The stress test shows that a few systemic banks fall short of their capital buffer requirements in a severe recession scenario, cf. Chart 1.

The banks generally make profits in the first year of the stress test. It is assumed that banks distribute all of their profits to shareholders, as long as profits are positive and their capital ratios exceed the total capital requirement by more than 3 percentage points. If banks were to retain earnings instead, it would substantially decrease their capital shortfall.

If a bank's capital ratio falls below the buffer requirement, a number of restrictions will be imposed, e.g. in relation to dividend payments and interest payments on hybrid capital instruments. This could reduce the banks' access to external funding in the financial markets at a time when obtaining funding is already difficult.

The banks must satisfy both minimum and buffer requirements, cf. chart 2. From the beginning of 2019, the capital conservation buffer and the SIFI capital buffer have been fully phased in. The countercyclical capital buffer is currently 1.0 per cent and will gradually be increased to 2.0 per cent by December 2020. In the stress test, we assume that the buffer will be released in the severe recession scenario.

Several reasons for lower excess capital adequacy
In general, the systemic banks have lower excess capital adequacy than they had in the most recent stress test, although several of them were also close

1 See Appendix 1 for an overview of the banks included in the stress test.

2 See Appendix 2 for an overview of the scenarios.

3 See Danmarks Nationalbank (2019), Banks face new requirements in the stress test, *Danmarks Nationalbank Analysis,* No. 10, 27 May.

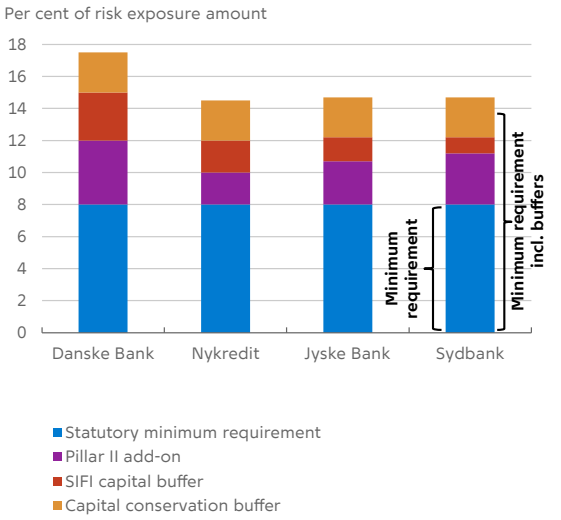
to falling short of the buffer requirements then. This can be attributed to several factors. In recent years, the net interest income of the banks has declined, while their costs have risen. This is partly, but not fully, offset by higher fee income. As a result, the banks' have less capital to cushion the effect of a downturn. And they will be more severely hit when e.g. loan impairment charges increase in a stress scenario.

The banks are also affected by higher funding costs. In Danmarks Nationalbank's stress test model, the banks' funding costs reflect factors such as the market perception of the banks, their losses in a stress scenario and the composition of their equity and liabilities. Consequently, it has an impact on the banks that their market value fell considerably in the pre-stress test period, while their losses will also be greater in a stress scenario. This is particularly true of the banks that are dependent on market-based funding.

Several of the small, non-systemic banks have insufficient capital to satisfy their capital buffer requirements in the severe recession scenario, cf. Chart 3. In 2022, the non-systemic banks will be about kr. 1.5 billion short of satisfying the buffer requirements. Breaches of the buffer requirements of that magnitude are not assessed to pose a threat to financial stability, and should the non-systemic banks fall short of the buffer requirements and be close to the minimum requirements, the authorities can intervene. If the solution is recovery or resolution, the authorities have the tools required to address the situation, but the owners and creditors of the banks in question may suffer losses.

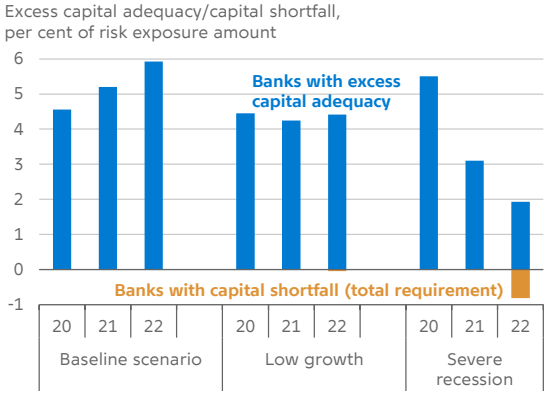
All banks, systemic as well as non-systemic, meet the risk-based minimum requirements and the requirement that the leverage ratio must be at least 3 per cent of their non-risk-based exposures in the severe recession scenario.

Composition of capital requirements for selected systemic banks Chart 2



Note: Data as at mid-2019. In the stress test (but not in the chart), the Pillar II add-on has been increased for Danske Bank as a result of the Flexinvest Fri case. The countercyclical capital buffer has not been included in the chart.

Most non-systemic banks meet the buffer requirement, but a few fall short of the requirement Chart 3



Note: The chart shows the excess capital adequacy or capital shortfall of the non-systemic banks that either have excess capital adequacy or a capital shortfall as percentages of the total risk exposure amounts of the non-systemic banks. The excess capital adequacy in 2020 is higher in the recession scenario than in the other scenarios because the countercyclical buffer is presumed to be released in the recession scenario. The reason for the accumulation of capital in the baseline scenario is that the non-systemic banks are assumed to retain earnings in order to satisfy the MREL, which is gradually phased in during this period.

Source: Danish Financial Supervisory Authority and own calculations.

Banks may struggle to satisfy the MREL in a stress scenario

For systemic banks, the MREL is nearly two times as high as their risk-based capital requirement.[4] The banks may satisfy this requirement by means of the capital used to meet the capital requirements and by means of further eligible liabilities.

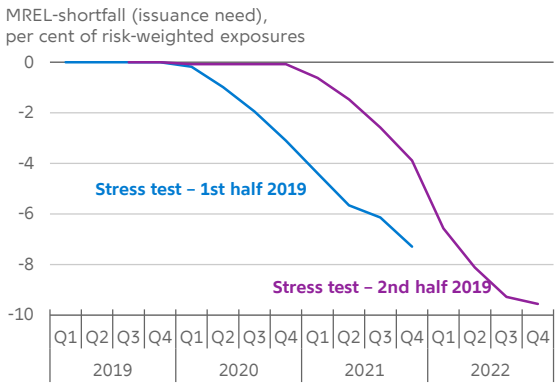
In a stress scenario, the banks suffer losses and their equity is eroded. In addition, some of the eligible liabilities of the banks will no longer qualify for inclusion in the MREL when their remaining maturity falls below 1 year. If the banks are to satisfy the MREL, they must issue new MREL-eligible instruments, both in order to compensate for the loss of capital and to replace old issues.

The systemic banks will have a substantial need to issue new MREL-eligible instruments in a stress scenario, cf. Chart 4. The chart shows the shortfall (or issuance requirement) that the systemic banks will have relative to the MREL in a stress scenario if they do not issue new MREL-eligible instruments in the last two and a half years of the stress test.

Compared with the stress test from the 1st half of 2019, it looks as if the banks will find it even more difficult to satisfy the MREL in a stress scenario.[5] This is because the banks have been more severely affected by stress in this half-year due to a weaker starting point, but also because the MREL has increased for some banks.[6] In addition, the fact that the scenarios have been extended by six months in this stress test may also have an impact on the results.

The MREL only took effect in mid-2019. To the extent that the banks are still building up MREL-eligible instruments, they can be expected to be better prepared if a crisis occurs in the not so immediate future.

The MREL is a challenge to systemic banks in a stress scenario Chart 4



Note: The MREL shortfall is defined as the amount the banks are short of satisfying the MREL divided by the banks' total risk exposure amount. The calculations have been based on the severe recession scenario, and all issues ceasing to qualify for inclusion in the MREL before mid-2020 are assumed to be refinanced. The banks' MREL instruments and their maturity profiles have been estimated on the basis of data from the Danish Financial Supervisory Authority and Bloomberg.
Source: Danish Financial Supervisory Authority, Bloomberg and own calculations.

Some of the banks' most recently issued MREL-eligible instruments have remaining maturities of 5 years or more. This limits the short-term issuance requirement. However, there are still many old issues that cease to qualify for inclusion in the MREL within the next year.

Unlike the systemic banks, the non-systemic banks primarily satisfy the MREL using own funds. Since the MREL consists of the general capital requirement plus an add-on, the MREL is generally the most binding requirement on the non-systemic banks.

Several of the non-systemic banks have difficulty satisfying the MREL in the low growth scenario, and

4 The countercyclical capital buffer is included only once.

5 It should be noted, however, that it is not possible to gain an exact overview of the banks' aggregate MREL issuances and their maturity profiles on the basis of the data available, and hence the calculations are subject to some uncertainty.

6 Today, the mortgage credit institutions must satisfy a debt buffer requirement, but from 2022 an aggregate requirement of at least 8 per cent of the group's total equity and liabilities will apply.

only few satisfy it in the severe recession scenario. For the non-systemic banks, the MREL will gradually be phased in until 2023. However, the Danish Financial Supervisory Authority has made the phasing-in conditional upon the level of earnings and loan impairment charges being normal in the phasing-in period. If this assumption fails, which will be the case in the stress scenario, the phasing-in period may be extended.

Stress test scenarios

Danmarks Nationalbank's stress test is based on three macroeconomic scenarios spanning the period from mid-2019 to 2022: a baseline scenario, low growth and severe recession. The baseline scenario follows Danmarks Nationalbank's projection of the Danish economy, while the low growth scenario is a domestic recession. The severe recession scenario involves a global crisis in which export market growth is reduced and GDP and house prices plunge, while unemployment rises. See Appendix 2 for a more detailed description of how a number of key variables develop.

When preparing the severe recession scenario, Danmarks Nationalbank emphasises developments in unemployment, real GDP and house prices. For each of these variables, a systematic approach is applied to determine their increase (unemployment) or fall GDP growth and house prices).[7] This approach ensures that the scenarios reflect the cycle, entailing that e.g. stress increases after a period of strong economic growth.

More specifically, we seek to hit selected targets for developments in unemployment, real GDP and house prices (divided by disposable income), cf. Table 1. These targets are based on historical data and are thus backward-looking. Therefore, the approach includes an option to adjust the scenarios based on expert judgement to capture forward-looking risks, but that has not been done in this stress test.

Change in key variables Table 1

Variable	Rule	Adjustment
Increase in unemployment	6.3 percentage points	0.0
Decline in real GDP	−5,7 per cent	0.0
Decline in house prices over disposable income	−24 per cent	0.0

Note: See Danmarks Nationalbank (2018), The largest banks satisfy capital requirements in stress test, *Danmarks Nationalbank Analysis,* No. 21, November for a technical description of the rules used to calculate the changes in the three key variables.
Source: MONA statistics and own calculations.

7 The scenarios are developed in cooperation with the Danish Financial Supervisory Authority. The approach used to generate the scenarios is described in detail in Danmarks Nationalbank's most recent stress test (Danmarks Nationalbank (2018), The largest banks satisfy capital requirements in stress test, *Danmarks Nationalbank Analysis*, No. 21, November).

Appendix 1: Stress test population

Systemic banks (credit institutions)
Danske Bank
Nykredit Realkredit
Jyske Bank
Nordea Kredit
Sydbank
DLR Kredit
Spar Nord

Non-systemic banks (credit institutions)
Arbejdernes Landsbank
Ringkjøbing Landbobank
Sparekassen Kronjylland
Vestjysk Bank
Lån & Spar Bank
Jutlander Bank
Sparekassen Sjælland-Fyn
Den Jyske Sparekasse
Sparekassen Vendsyssel
Alm. Brand Bank

Appendix 2:
Stress test scenarios

Key variables Table

	Baseline scenario	Low growth	Severe recession
2020			
GDP, per cent year-on-year	1.5	1.2	0.9
Private consumption, per cent year-on-year	2.2	1.7	1.6
Export market growth, per cent year-on-year	3.1	3.1	1.9
House prices, per cent year-on-year	3.5	2.9	1.4
Gross unemployment, per cent of labour force	3.2	3.3	3.3
Bond yields	0.4	0.4	0.4
2021			
GDP, per cent year-on-year	1.5	-0.8	-5.2
Private consumption, per cent year-on-year	2.1	-1.5	-4.2
Export market growth, per cent year-on-year	3.2	3.2	-8.5
House prices, per cent year-on-year	3.0	-4.3	-16.7
Gross unemployment, per cent of labour force	3.0	4.0	5.9
Bond yields	0.4	0.4	0.4
2022			
GDP, per cent year-on-year	1.6	0.8	-1.5
Private consumption, per cent year-on-year	2.2	-0.5	-2.6
Export market growth, per cent year-on-year	3.2	3.2	-0.4
House prices, per cent year-on-year	2.4	-1.4	-7.7
Gross unemployment, per cent of labour force	2.8	4.7	9.4
Bond yields	0.5	0.5	0.5

Note: Annual averages. House prices are cash prices of single-family houses.

ABOUT ANALYSIS

As a consequence of Danmarks Nationalbank's role in society we conduct analyses of economic and financial conditions.

Analyses are published continuously and include e.g. assessments of the current cyclical position and the financial stability.

The analysis consists of a Danish and an English version. In case of doubt regarding the correctness of the translation the Danish version is considered to be binding.

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