

Banks

Market Developments in 2016

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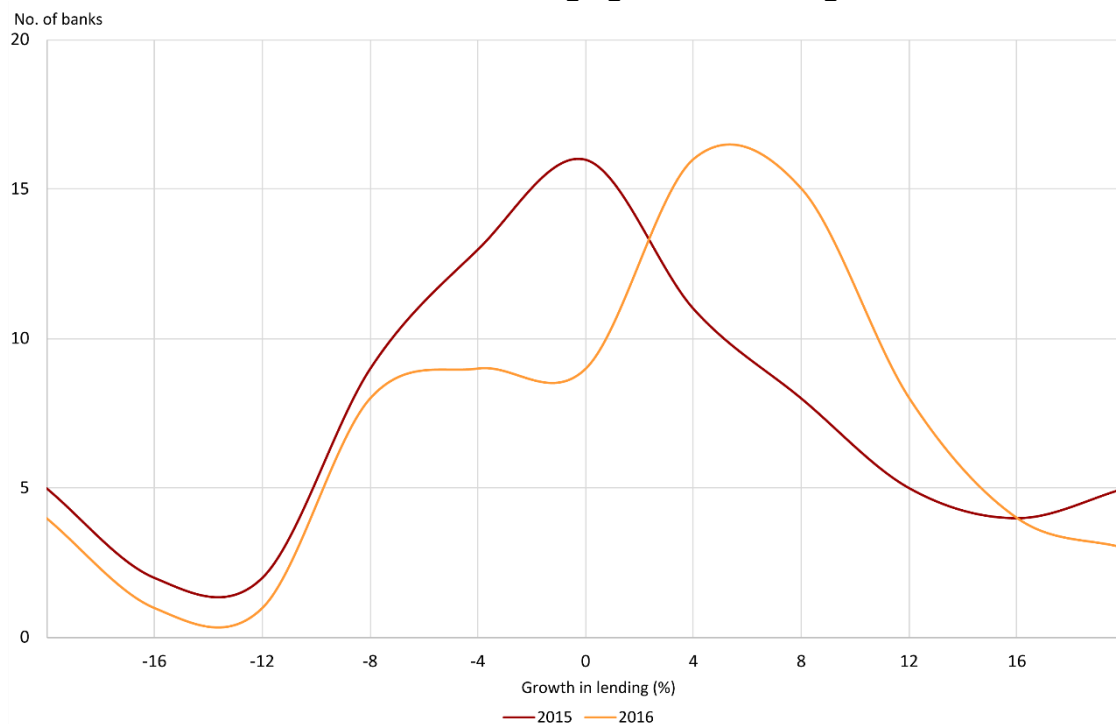
1. Summary

The Danish economy has genuinely left the financial crisis behind, unemployment is low and property prices in some parts of the country are higher than ever. This has obviously had an effect on banks, which have substantially improved their earnings in recent years. In 2016 alone, the sector's overall profits increased by over 40 per cent.

Historically speaking, it is in periods of economic upturns that the seeds of the problems in the next crisis are sown. As the economy improves, banks take more risks, which are to some extent underestimated and to some extent excessive in relation to the individual enterprises. Consumers also take more risks: for example, they are more likely to take out big loans with variable interest rates.

There is a clear tendency for many financial institutions to increase growth in lending. In 2015 there was typically no growth in lending, while in 2016 the typical growth rate increased to around 6%. Strong growth in lending at the expense of credit quality is one of several symptoms that characterised problematic financial institutions during the most recent crisis.

More banks with high growth in lending



Note: This figure shows the distribution of the banks' growth in lending.
Source: Reports to the Danish FSA.

The Danish FSA has noted that property investors are requiring a steadily declining return on their investments both in Denmark and abroad. This falling requirement for returns leads to rising prices, and the higher prices provide a basis for rising lending. The Danish FSA has surveyed the property-related project financing of banks, and has established that medium-sized banks' guidelines in this area appear inadequate. The majority of banks also deviate from their own guidelines in this area. More detailed conclusions from this survey are expected to be published later in May 2017.

Mortgage lending for medium-sized banks in Copenhagen and Århus has risen by over 30% since 2014. Competition is particularly fierce for lending for cooperative flats in the Copenhagen area, and some were mortgaged without any requirement for down payment. Since 2014 the Danish FSA has introduced a range of measures to improve mortgage lending. We have also clarified that an appropriate down payment when purchasing traditional residential real estate is 5 per cent. However, there are currently no similar guidelines for the cooperative property market.

It has historically been the case that banks “grant bad loans in good times”. The Danish FSA wants banks to become less procyclical. Their risk-taking in the impending boom should be more balanced than last time, and their financial resilience should be better before the next recession hits.

Based on the Danish Parliament's implementation of the European Union's bank recovery and resolution directive (BRRD), in 2017 the Danish FSA expects to set a minimum requirement for own funds and eligible liabilities for all financial institutions, the so-called MREL requirement (NEP in Danish). This is an additional capital requirement intended to ensure that banks have sufficient own funds and eligible liabilities if they fail and resolution is necessary.

In 2017 Nordea Bank Denmark moved from being a separate bank within the Nordea Group to being a subsidiary of Nordea Sweden. Nordea Denmark is nevertheless included in the data for this publication; for a detailed explanation, see Appendix 6.

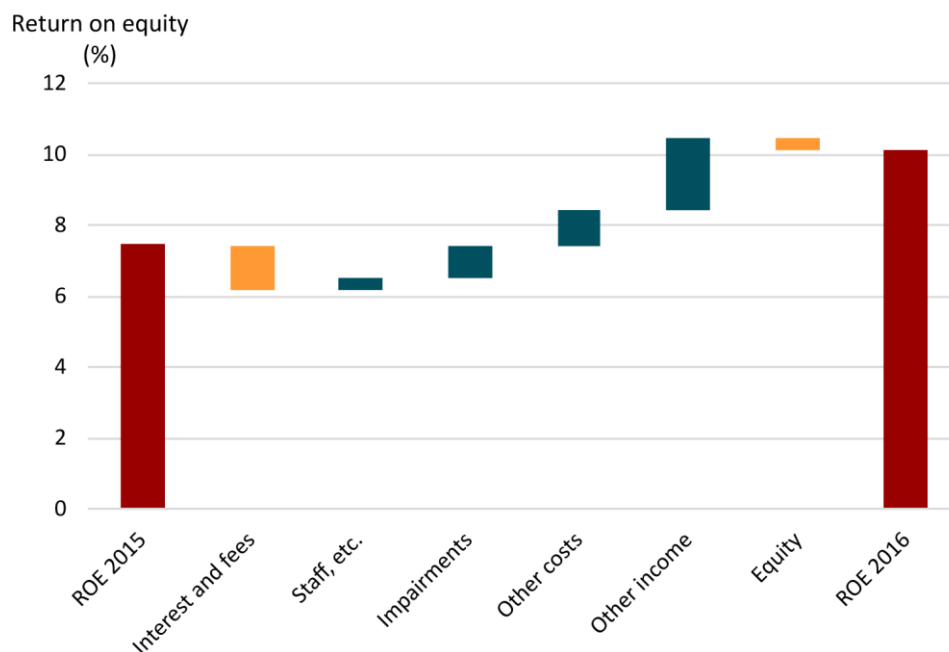
3. Better earnings

Things are going well for banks. The net profit for the year rose by over 40 per cent from 2015 to 2016, and the annual accounts show a profit of DKK 34 billion for the sector as a whole. Return on equity rose from 7.5 per cent in 2015 to over 10 per cent in 2016; cf. Figure 1. The two biggest contributors to improved earnings derive from positive value adjustments and a fall in impairment on intangible assets. The return in 2015 was kept down by a single, large write-down of goodwill by Danske Bank. If we excluded this write down, return on equity would have been 1.4 per cent higher in 2015.

The positive results were also driven by falling impairment and results in associated and affiliated enterprises. Improvement in the Danish economy means that borrowers are coping better. The long-term focus on credit quality after the financial crisis may also have helped to reduce impairment.

Several banks are focusing on costs, and improved earnings in the sector are also driven by falling operating costs. Branches are closing around the country, and enterprises are run by fewer and fewer employees as operations increasingly become digitised.

Figure 1: Better earnings



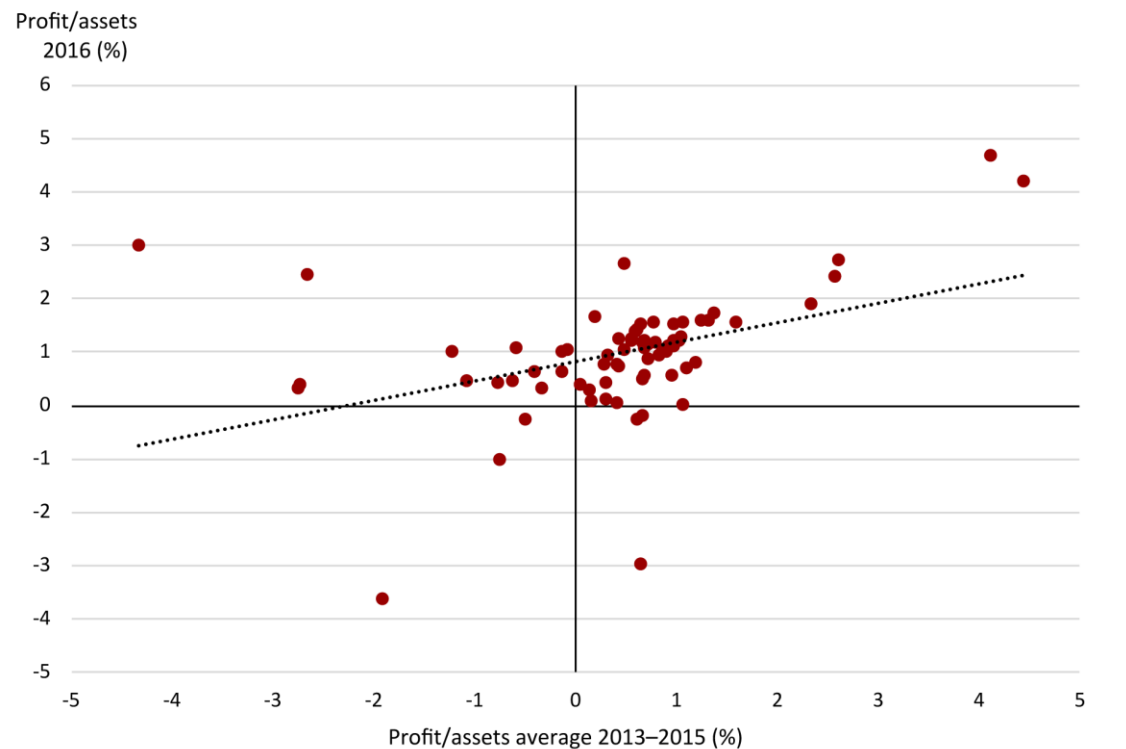
Note: This figure shows the factors that have affected return on equity after tax from 2015 to 2016. For example, other income rose in the order of over 2% of equity, and this improved return on equity by over 2%. Other income covers value adjustments, other operating income, income from associates and group undertakings and income from activities during liquidation. Other expenses are amortisation and impairment on intangible and tangible assets and tax. Growth in equity reduces the return on equity, all other things being equal.

Source: Reports to the Danish FSA.

Overall, banks have increased earnings substantially in recent years, and this year's profit before tax is more than five times that in 2012. This trend was primarily driven by falling impairments. During the same period, banks have experienced falling net interest income, but rising fee and commission income has compensated for this to some extent.

This improvement in earnings is a general trend across the sector. More than 75% of banks saw an improvement in 2016 compared with the 2013 to 2015 period. However, there is a slight indication that those banks who managed less well in previous years also delivered poorer results in 2016. Figure 2 shows that banks with relatively low return in 2016 also had low returns during the 2013 to 2015 period. If we are to maintain a healthy, robust banking sector, it is crucial that the majority of banks deliver good results for the bottom line.

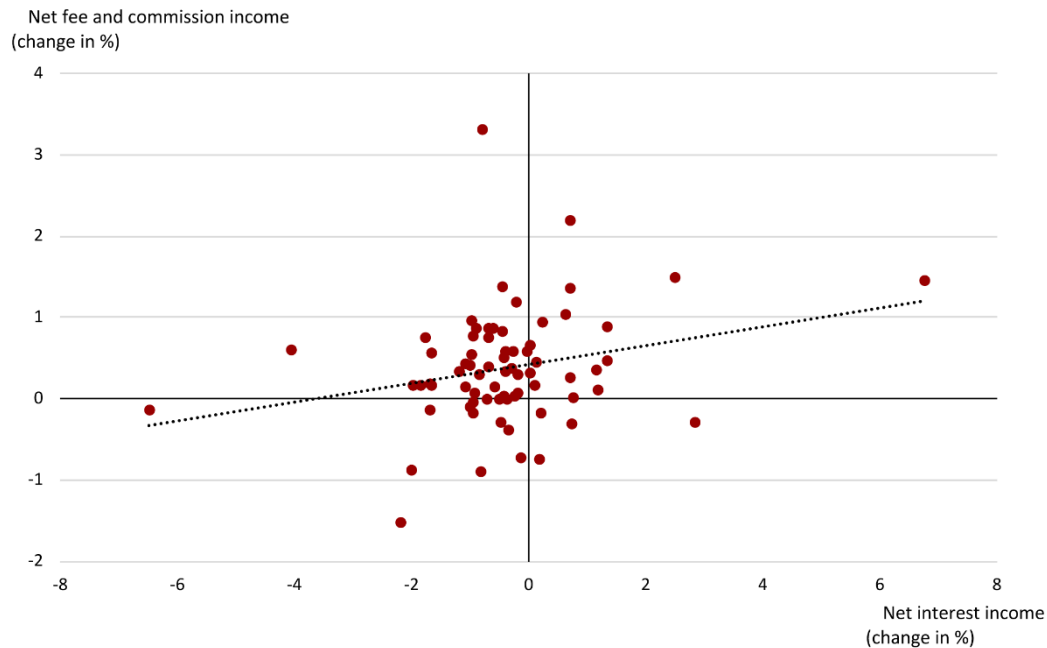
Figure 2: Low income mobility in the sector



Note: This figure shows banks' profit before tax as a percentage of assets in 2016, compared with an average for 2013 to 2015. The dotted line is a linear trend using P^2 of 0.17.
Source: Reports to the Danish FSA.

Banks with weak earnings often do poorly on several parameters. As already stated, interest income has been falling since 2012 if we look at all the banks as a whole. Rising fee and commission income has compensated for this to some extent. It makes sense for the banks to compensate for falling interest income by increasing fees. However, there are no signs that banks with negative development in net interest income have a corresponding positive development in fee and commission income; in fact (see Figure 3) the opposite is true. This implies that the banks have not found it easy to compensate for falling interest income by increasing fees. Banks with weak development in both interest and fee income may need to adapt their cost levels if they are to achieve good results for the bottom line.

Figure 3: Weak development in interest income is followed by weak development in fee and commission income



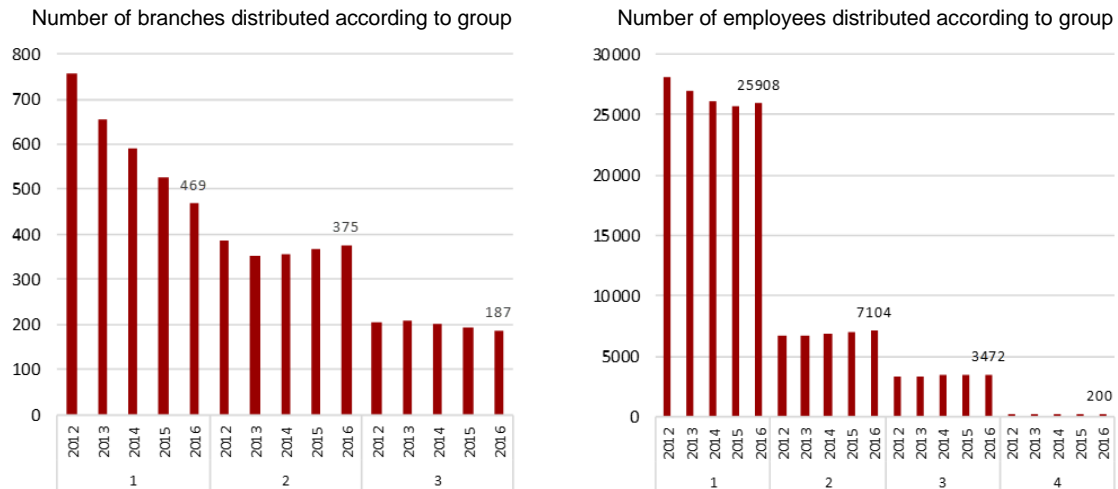
Note: This figure shows the change in net interest income and net fee and commission income as a percentage of assets from 2009 to 2016. The dotted line is a linear trend using P^2 of 0.07.
Source: Reports to the Danish FSA.

4. Costs

Operating costs for banks have been reduced over the past couple of years. In general, costs can be divided into operating costs and costs associated with financing assets. Costs associated with financing assets, e.g. interest on debt or requirement for returns on share capital, are to a great extent determined by the general interest rate level and the shareholders' requirement for returns. Operating costs, on the other hand, are more closely associated with the bank's own ability to efficiently produce and arrange lending. Staff and administrative expenses make up the biggest proportion of these costs for a bank. In recent years the Group 1 banks have reduced the number of branches and the number of employees as part of cost reduction measures; cf. Figure 4.

Running a bank involves certain more or less fixed costs. For example, the bank must make provisions for overall liquidity and risk management of its portfolios. These costs must be maintained, and savings on operating costs are not necessarily the best choice in the long run if they lead to unnecessary risks.

Figure 4: Fewer branches and employees in Group 1 banks

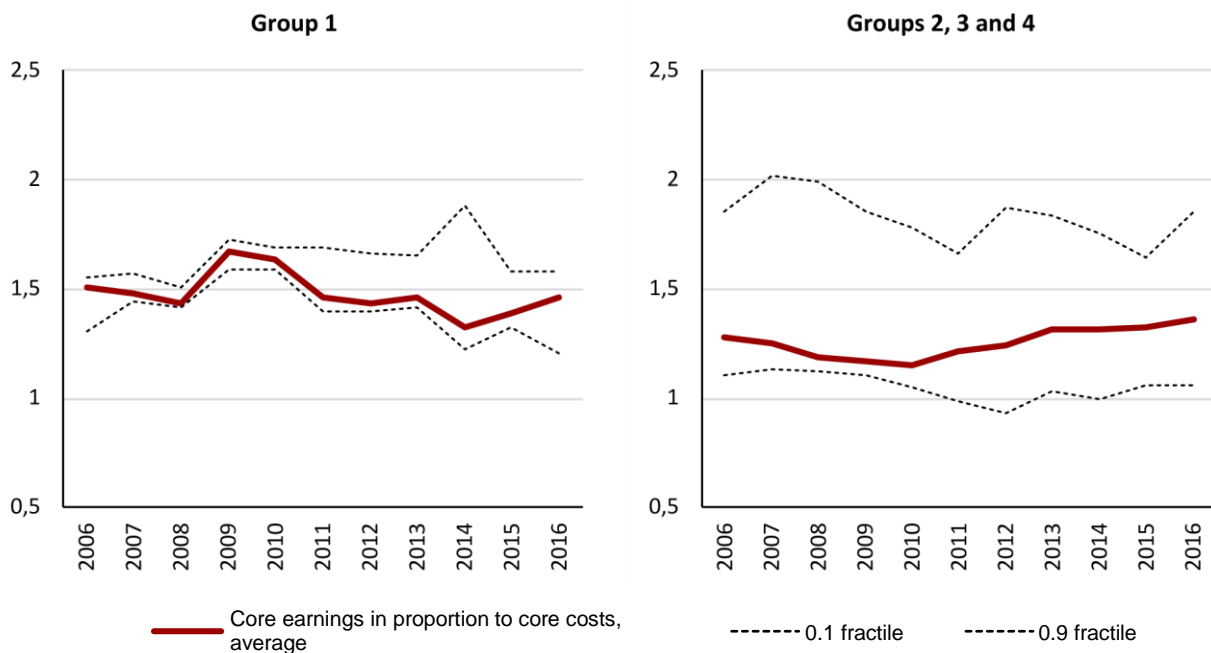


Note: Group 4 banks are not obliged to report the number of branches they have. Group allocation is based on the allocation in 2016.

Source: Accounting data and reports to the Danish FSA.

Core earnings in proportion to core costs have risen since 2014 for Group 1 banks, while the weighted average for the smaller banks in Groups 2, 3 and 4 has also risen; cf. Figure 5.

Figure 5: Core earnings in proportion to core costs have risen since 2014



Note: Individual banks in Groups 2, 3 and 4 were not included, as the value of core costs relative to core income fluctuates substantially depending on business model. The average is a weighted average. Core costs comprise staff and administrative expenses, amortisation and impairment and other operating costs. Core income comprises net interest and fee income and other operating income. Group allocation is based on the allocation in 2016.

Source: Own calculations based on reports to the Danish FSA.

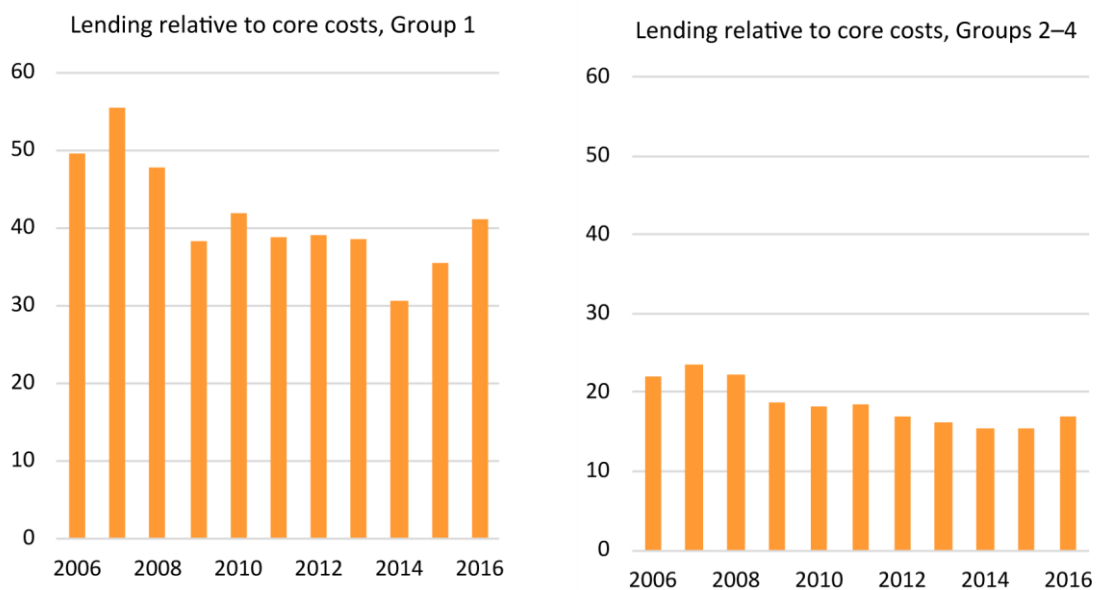
The Group 1 banks have increased their core earnings more than their core costs since 2014. Core costs are now in line with the costs in the years following the financial crisis. The smaller banks, on the other hand, have kept their costs relatively constant while their income has

risen. In recent years, the average smaller bank has been in a position to generate greater core earnings for the same core costs, but the dispersion within the smaller banks is substantially greater than it is for Group 1. Each year during the observed period, core earnings in certain Group 2, 3 or 4 banks have barely covered their core costs.

Staff and administrative expenses make up the biggest proportion of these costs for a bank. Expenses per employee rose after 2008 for Group 1 banks, but have dropped off since 2014. Group 1 banks have also reduced their administrative expenses by reducing the number of branches, among other things. This trend continued in 2016. The number of employees has been falling since 2008 as part of cost reduction measures, but the trend appears to have flattened out in 2016, where the number of employees increased by about 1%.

Overall lending in relation to costs has been more or less constant since 2009. However, there are substantial differences in levels between the groups. Group 1 banks have generated lending that is more than twice that generated by the smaller banks relative to core costs. This indicates that economies of scale may come into play.

Figure 6: Lending relative to core costs is substantially higher for Group 1



Note. The average is a weighted average. Core costs comprise staff and administrative expenses, amortisation and impairment and other operating costs. Group allocation is based on the allocation in 2016.

Source: Own calculations based on reports to the Danish FSA.

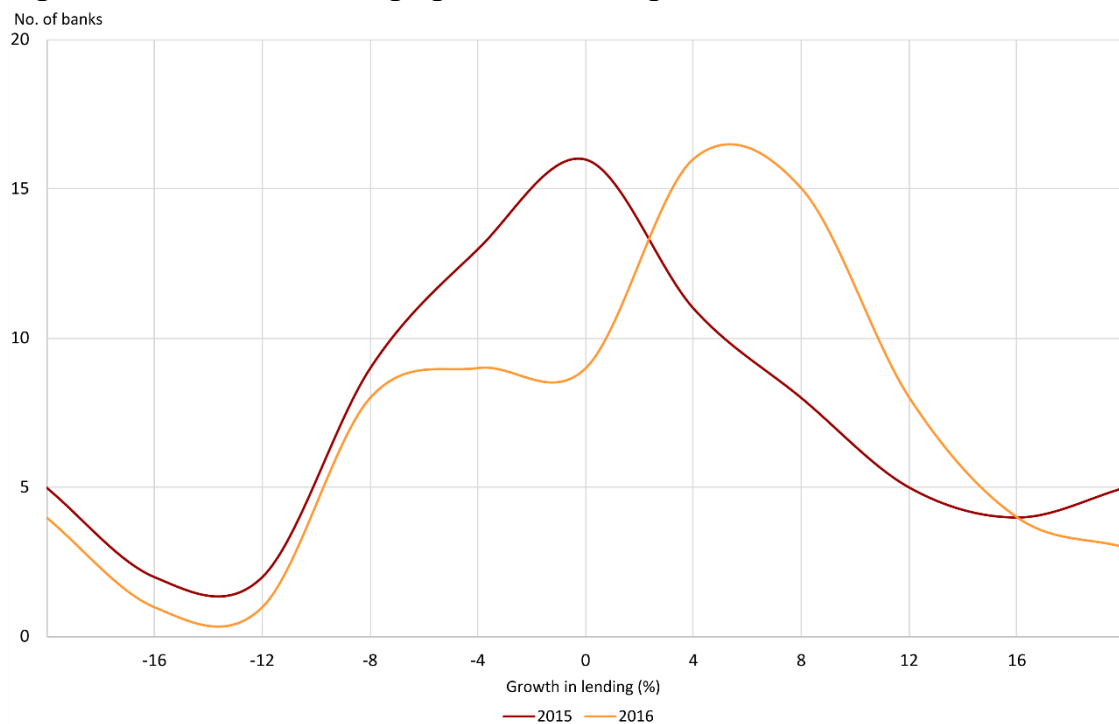
Given the unchanged level of lending for Group 1 banks and the simultaneous reduction in the number of employees and branches, we can expect the loan-to-cost ratio to rise. On the other hand, the improvement for Group 2 banks was driven by rising lending compared with relatively stable operating costs. The loan-to-cost ratio for Groups 3 and 4 has been falling since 2008, but this has levelled off in the past three years, and in 2016 Group 4 showed a slight increase in loan-to-cost ratio. The loan-to-cost ratio does not necessarily reflect cost-efficiency for the entire business, because there are assets other than loans that generate income, such as trading in securities or other commission-related activities.

Costs in relation to all assets is a broader measurement of cost-efficiency, in that the assets cover more income-generating assets than lending alone. Cost levels per asset (in DKK) have remained stable for Group 1 since 2008, while costs per asset for Group 2 banks have fallen slightly. Groups 3 and 4 have substantially greater costs per asset, and have experienced a general increase since 2008, although this trend was broken in 2016.

5. Rising risk

Banks' overall lending (excluding repos) rose by over 4% in 2016 and was over DKK 1.4 billion at the end of the year. Growth in lending is distributed in such a way that some banks grew a lot while others shrank. In 2016 there was a tendency for an increasing number of banks to grow their lending substantially. The typical growth rate grew to around 6% in 2016. For comparison purposes, the typical growth in lending in 2015 was around 0%; cf. Figure 7. The figure shows a clear tendency for many banks to increase growth in lending.

Figure 7: More banks with high growth in lending



Note: This figure shows the distribution of the banks' growth in lending. For example, 16 of the banks had 0% growth in lending in 2015 (interval of -2% to 2%).
Source: Reports to the Danish FSA.

The Danish FSA's supervisory diamond for banks includes a benchmark restricting growth in lending to below 20%. At the end of 2016 three banks breached this benchmark. High growth in lending at the expense of credit quality is one of several symptoms that characterised failing banks during the most recent crisis. This correlation was also present in previous crises.

A survey by Buchholst and Rangvid (2013) demonstrated that the probability of becoming a failing bank rose by around 5% for each percentage point that growth in lending was increased. This survey was based on Danish experiences. It is important that banks do not compromise on credit quality in order to increase business volume.

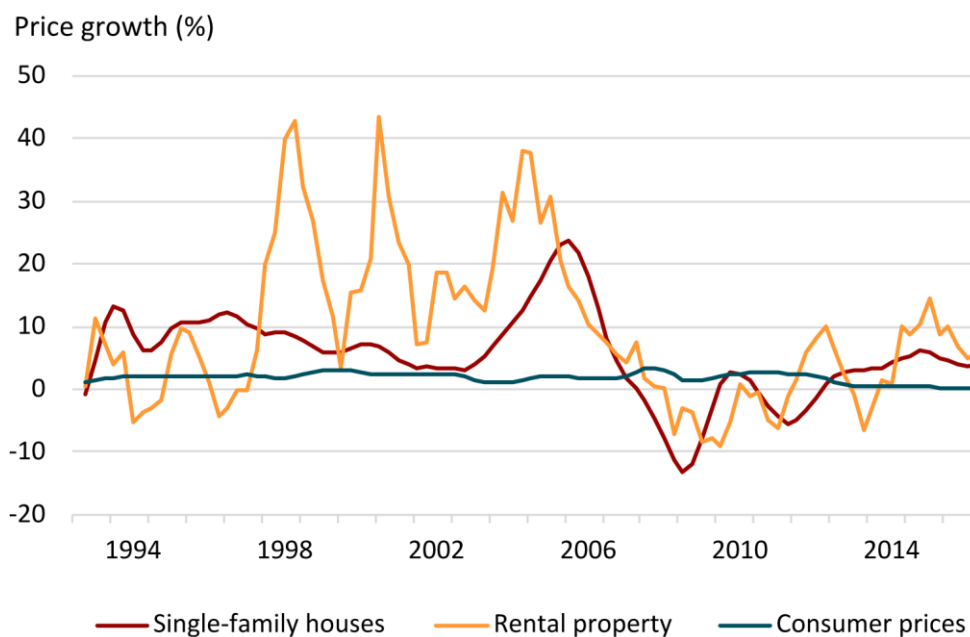
Rising lending to the commercial real estate industry

Greater lending to commercial real estate is another benchmark on the supervisory diamond. Lending to the industry has increased in recent years from 14% of business exposure in 2013 to 18% in 2016.¹ The Danish FSA has noted that property investors are requiring a steadily declining return on their investments both in Denmark and abroad. This falling requirement for returns leads to rising prices, and the higher prices provide a basis for rising lending.

Lending for property investment has historically been a source of problems within banks. Banks' lending to the commercial real estate industry rose substantially in the years leading up to the financial crisis, and banks were forced to write down a relatively large proportion of this lending in the years following the crisis. Substantial property exposure was also identified as one of the most significant direct causes of banks failing in the 1987–1993 crisis.²

The large fluctuation in real estate prices may be one of the reasons for the problems associated with lending for property investment. Real estate prices are extremely procyclical, i.e. prices go up a lot in boom periods – more so than the prices of single-family dwellings; cf. Figure 8.

Figure 8: Large price fluctuations in rental property



Note: This figure shows the annual price increases in single-family houses, rental property and consumer prices. Up to 2005, rental property meant properties with more than nine flats. Since 2005 it has meant properties with more than four flats. Data represents a moving average for four quarters.
Source: Statistics Denmark, StatBank.

International comparisons also imply that investors typically are more self-funded abroad than they are in Denmark. This may be due to the Danish mortgage-credit system, in which external financing is cheap and easy to access.

¹ Buchholst and Rangvid (2013) also showed that there is a positive correlation between exposures to real estate and the probability of a bank failing.

² The Financial Crisis in Denmark – causes, consequences and learnings, Committee investigating the causes and consequences of the financial crisis.

Strong competition for project properties

The Danish FSA has carried out two surveys of banks' exposure to property-related project financing: one on the large banks and one on the medium-sized banks. For the large banks, project financing is particularly prevalent in major cities, and the volume has grown substantially in the past three to four years. Banks themselves are reporting rising rents and lower requirements for returns on housing property.

Prices per square metre for these project properties are typically high. This places great demands on the buyers' income and financial circumstances, and this market is thus associated with a certain amount of uncertainty. So far sales and rentals have been effected more or less according to plan. There has therefore been no sign that banks are running a substantial risk of having to take over property that cannot be sold.

Banks also report that they are maintaining their conditions of a large proportion of prior sales or prior lettings or requirement for sizeable funds generated from operations to protect themselves from losses on property that cannot be sold or let as anticipated. Banks' requirements for funds generated from operations rise when they require a smaller proportion of prior sales or lettings. In the survey of the large banks, the Danish FSA found no signs that the banks' risk-taking approach may have changed.

Box 1: Surveys of property-related project financing

The Danish FSA has carried out two surveys of banks' exposure to property-related project financing, studying the exposure of large and medium-sized banks in this area. These surveys were conducted because low interest rates and rising property prices, particularly in large cities, involve a certain amount of risk of substantial price drops. This risk is higher in regard to properties that are under disposal or construction. This is because in many cases only part of a project property has been sold or let before the construction process begins. New properties are typically at the more expensive end of the scale, and are therefore more vulnerable to downturns in demand.

In the surveys, property-related project financing is defined as financing of land acquisition, development, construction of dwellings or real estate on a bank's own account for the purpose of future sale or leasing outside the company. It also covers exposure to customers who have invested in this area.

The interim survey results are presented here in this article. More detailed conclusions are expected to be published later in May 2017.

The survey of the medium-sized banks covered 23 businesses. At the current time, the volume of property-related project financing is not extensive for these banks. However, the industry is growing and there are no signs that this trend is ready to reverse. In two out of three cases, medium-sized banks finance projects located outside of the capital region and Aarhus.

The banks themselves consider property-related project financing to be a high-risk sector, and they have a policy of being particularly careful when providing this form of financing. This is also expressed in the banks' guidelines. However, in the survey of the medium-sized banks, the Danish FSA has noted that the majority of the banks deviate extensively from their own guidelines in the actual lending situation. This applies particularly to requirements regarding self-funding ratios and primary market area. Two banks informed us that they did not have a requirement regarding funds generated from operations at all.

The Danish FSA saw several examples of the banks disregarding their own requirement regarding self-funding in various exposures. In some cases, banks did not set a requirement regarding self-funding at all. Instead attempts are made to cover the projects via guarantees and mortgage deeds registered to the mortgagor.

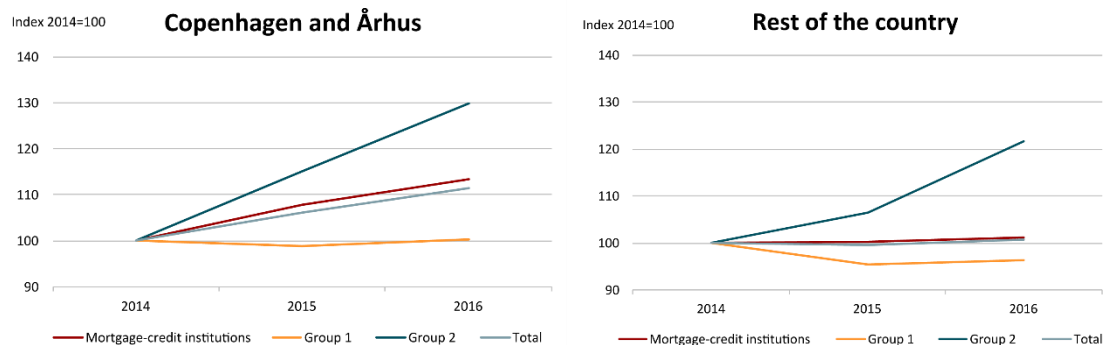
The banks' guidelines appear inadequate in key areas, namely in regard to both requirements for self-funding and requirements for prior sales or lettings when financing real estate projects. Only 20% of the medium-sized banks set a requirement regarding prior sales or lettings. In addition, the Danish FSA can see no common thread in the banks' actual exposure that correlates with whether or not they set requirements regarding prior sales or lettings. There is also no indication that substantial prior sales or lettings offset low requirements regarding self-funding.

Mortgage lending in Copenhagen and Århus continues to grow

The mortgage lending of the largest banks and mortgage-credit institutions in Copenhagen and Århus has risen by over 10% since 2014, while development has stagnated in the rest of the country; cf. Figure 9. This increase should be viewed in the context of rising house prices in the cities, which means that overall, home-buyers are taking on more debt than was previously the case.

This growing total lending is primarily driven by mortgage-credit institutions. The medium-sized institutions in Group 2, however, have increased their lending most since 2014, with their lending increasing by 30% in Copenhagen and Århus.

Figure 9: Mortgage lending in Copenhagen and Århus has continued to grow



Note: These figures show the increase in mortgage lending. The chart on the left covers the City of Copenhagen and surrounding area as well as Århus. The change from 2014 to 2015 is based on a selection of institutions and property types. Group 1 includes lending from Handelsbanken.
Source: Reports to the Danish FSA.

Since 2014 the Danish FSA has introduced a range of measures aimed at mortgage lending, and thus also aimed at Copenhagen and Århus. The supervisory diamond for mortgage-credit was published in 2014. It provides guidelines for mortgage-credit institutions' use of interest-only loans and loans with flexible interest rates. In 2015 we clarified that an appropriate down payment starts at 5% of the purchase amount. In 2016 the Danish FSA also published "Vejledning om forsigtighed i kreditvurderingen ved belåning af boliger i vækstområder mv." ("Guidelines on ~~care-cautious~~ credit assessments when financing properties in growth areas, etc."). Among other things, this provides guidelines for the home buyer's debt-to-income ratio.

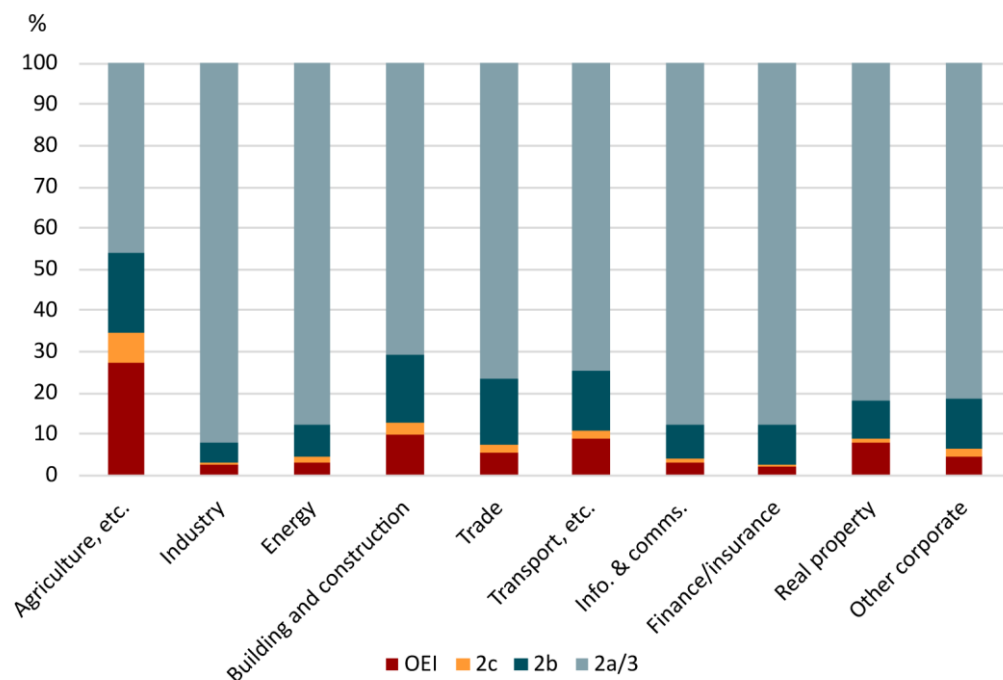
The measures will make both home buyers and institutions more resilient regarding any setbacks in the housing market. House prices and mortgage lending have continued to rise in Copenhagen and Århus since the measures were implemented. However, the measures were never intended to slow down pricing changes in the housing market.

The Danish FSA carried out a survey of new lending for home purchases in Copenhagen and Århus in 2015³. Among other things, it showed that competition appears to be particularly tough in regard to lending for cooperative flats in the Copenhagen area. For example, some loans covered 100% of the value of cooperative flats. There are currently no guidelines for appropriate down payments when buying cooperative flats, as there are for traditional residential real estate.

6. Credit quality and impairment charges

The percentage of lending with objective evidence of impairment (OEI), and on which it is most often necessary to make impairment charges, is highest within the agricultural industry; cf. Figure 10. The agricultural industry is still struggling with high levels of debt.

Figure 10: Weakness continues in agriculture



Note: This figure shows the credit quality of banks' lending and guarantees in 2016. The categories follow those in the Danish FSA's credit quality model, in which OEI is poorest and 2a/3 is best. At a minimum, data cover all lending representing over 1% of the individual bank's own funds.

Source: Reports to the Danish FSA.

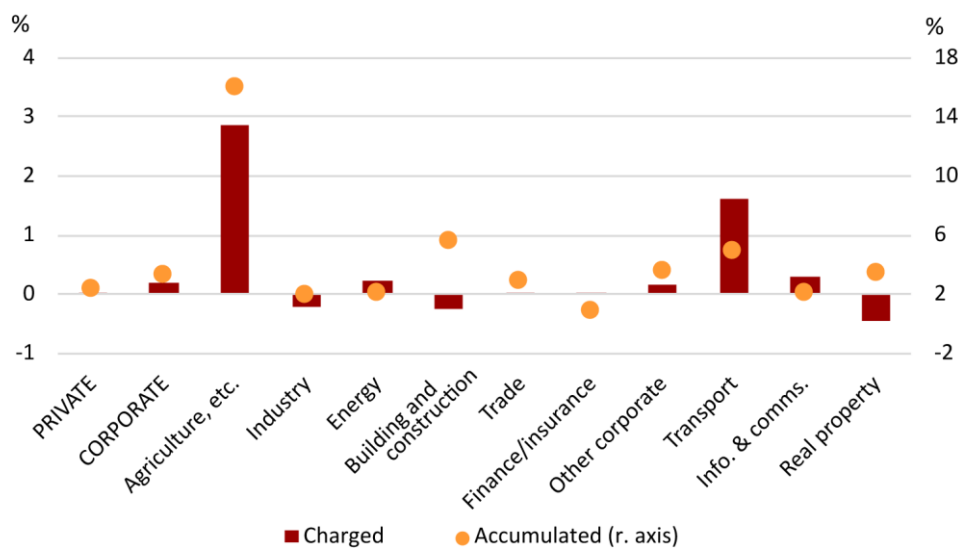
Impairment charges have fallen in recent years within lending to private customers and industry as a whole. However, agriculture is still embattled, and this is expressed in both the

³ Cf. Market Developments in 2015 for Banks, Box 1.

weak credit quality and the impairments. The impairments charged in 2016 constituted just under 3% of lending to the industry, compared with 3.5% in the preceding year. Banks have thus written down 16% of overall lending to agriculture; cf. Figure 11.

In other industries, including in particular the commercial real estate industry, banks have been able to recoup previous write-downs on lending. This is a natural consequence of economic conditions improving and the rising value of securities.

Figure 11: Impairment charges for agriculture are still high



Note: This figure shows the net write-downs in 2016, and so also includes reversals. Some industries therefore have negative net write-downs.
Source: Reports to the Danish FSA.

Adjustment of benchmark for large exposures

The benchmark for large exposures in the supervisory diamond for banks will change with effect from 1 January 2018.

This change was implemented in the light of recommendations in the Rangvid Committee's report on the causes of the financial crisis regarding stricter restrictions for large exposures in the supervisory diamond for banks.

This will be implemented by adjusting the method of calculation. Experience shows that with the newly applicable benchmark, fewer banks will breach the limit, even if they have a substantial concentration risk from many medium-sized individual exposures. At the moment, only exposures that constitute at least 10% of own funds are included in the calculation of the benchmark.

The new benchmark is therefore based on the 20 largest exposures, regardless of their size, relative to own funds. The sum of the bank's large exposures will in future be measured relative to the bank's tier 1 capital ratio, whereas a broader concept of capital is currently in use.

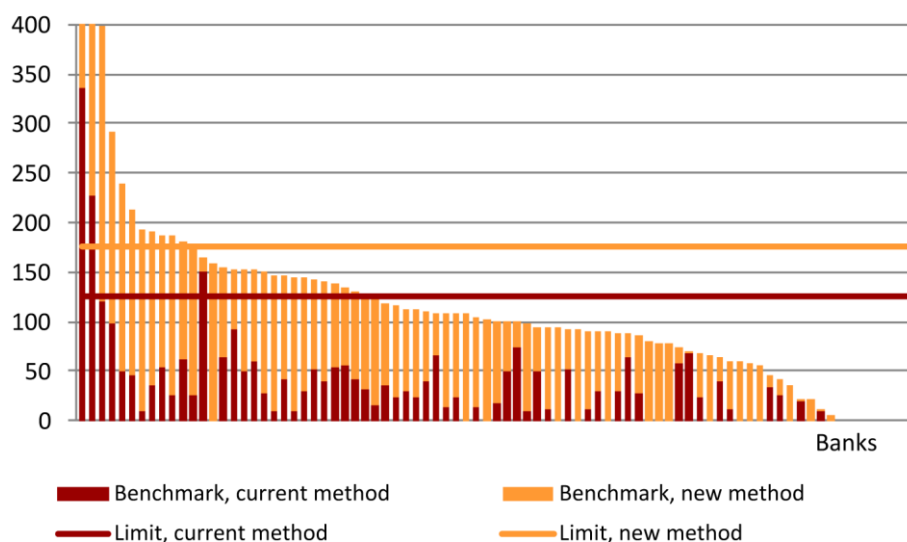
In autumn 2014, the Danish FSA collected data in order to calibrate the limit for the new benchmark. Against this background, the limit was set in such a way that the sum of the bank's 20 largest exposures cannot exceed 175% of the bank's tier 1 capital ratio, taking into account impairments and provisions as well as securities and other risk-reducing measures.

A triviality limit of DKK 3 million for an individual exposure has been retained so that exposures below this limit are not included in the calculation. This is to accommodate the smallest banks.

At the time of calibration, 12 banks exceeded the new benchmark; cf. Figure 12. When the new benchmark is introduced, the banks have about two and a half years to adapt their exposures and/or capital position to the upcoming change. The Danish FSA therefore expects the majority of the banks to comply with the new benchmark with effect from 1 January 2018.

To enable the Danish FSA to track developments until the change is implemented, banks will start to report data for calculation of the new benchmark as of now. The first report is due on 12 June 2017 based on Q1 figures. The results will not be published, but will merely provide a basis for tracking banks that have not yet sufficiently adapted their business to the new benchmark.

Figure 12: Tightening up the benchmark for large exposures



Note: This figure shows large exposures of banks as a percentage of own funds/common equity tier 1 capital ratio and the equivalent limits in the supervisory diamond. The current and new methods are calculated using different definitions. Data are from 2014.

Source: Reports to the Danish FSA.

7. Improved capital situation

The large upturn in earnings has enabled the sector to strengthen its own funds in 2016. Capital adequacy has increased in all groups except for Group 4. However, this group is still the best capitalised of the groups; cf. Table 1.

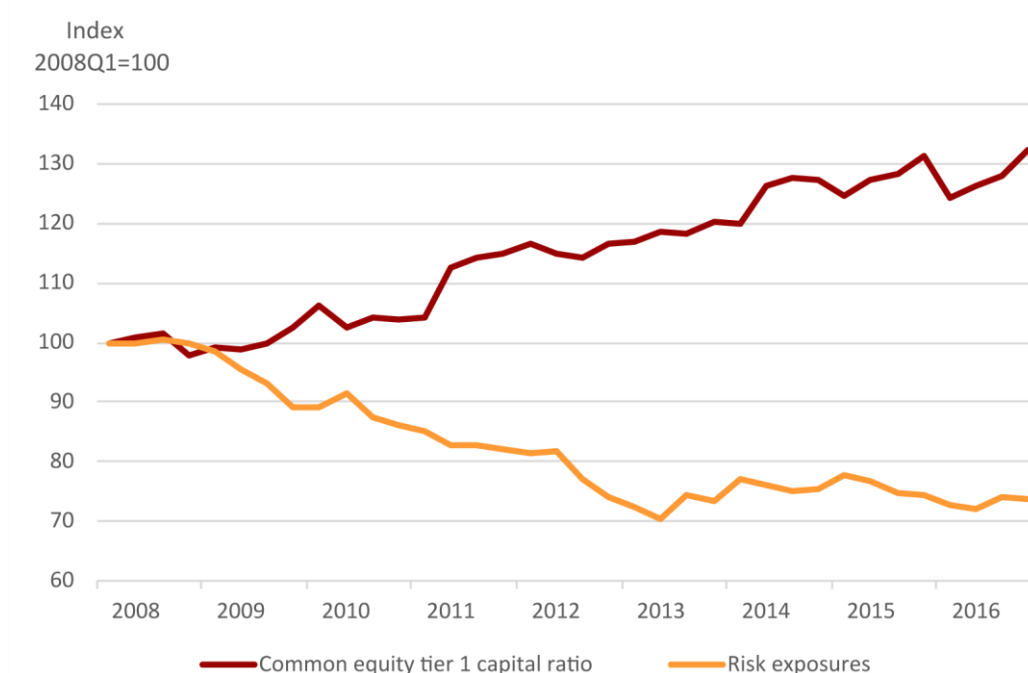
Table 1: The sector strengthens own funds

	Group 1			Group 2			Group 3			Group 4		
DKK million	2015	2016	Change	2015	2016	Change	2015	2016	Change	2015	2016	Change
Common equity tier 1 capital ratio	224.124	229.270	2,3%	28.996	30.574	5,4%	12.702	13.976	10,0%	776	732	-5,7%
Tier 1 capital	246.148	260.074	5,7%	31.122	33.858	8,8%	14.055	15.224	8,3%	784	745	-5,0%
Core capital	276.283	293.605	6,3%	34.705	37.922	9,3%	14.462	15.845	9,6%	784	747	-4,7%
Total risk exposure amount	1.203.068	1.191.361	-1,0%	209.728	216.899	3,4%	82.928	87.455	5,5%	2.777	2.758	-0,7%
Total assets	3.144.019	3.308.433	5,2%	307.807	329.715	7,1%	119.211	127.394	6,9%	4.359	4.510	3,5%
Tier 1 capital ratio	20,5	21,8		14,8	15,6		17,0	17,4		30,1	27,0	
Total capital ratio	23,0	24,6		16,6	17,5		15,3	16,0		30,1	27,1	

Source: Reports to the Danish FSA.

Since the financial crisis, banks have generally increased tier 1 capital and total capital ratios. This can probably be attributed to stricter regulatory requirements and increased market requirements, while a certain amount of restoration has also been necessary after the crisis. The banks have increased total capital ratios by substantially more than the increase in capital requirements, thereby increasing capital and solvency buffers. The rising capital ratios are due to both the banks increasing the common equity tier 1 capital ratio and falling risk exposures; cf. Figure 13.

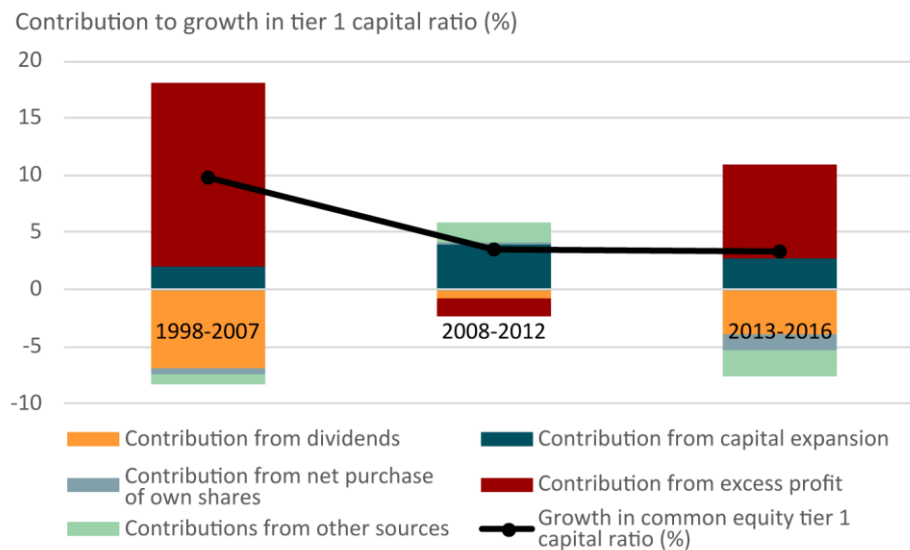
Figure 13: Strengthened capital position and falling risk exposures



Source: Reports to the Danish FSA.

Tier 1 capital has been strengthened thanks to both raising additional capital and retaining profits. In the period immediately following the crisis (2008 to 2012), earnings were weak and capital had to be raised from external sources. Common equity tier 1 capital ratio rose by 3.4% a year on average during this period. This is predominantly due to a 4% contribution to growth from capital expansions. On the other hand, deficits during this period helped to reduce capital growth by 1.5%; cf. Figure 14.

Figure 14: Profits were again paid to shareholders



Note: This figure shows the average annual contribution to the development in the overall banking sector's common equity tier 1 capital ratio. For example, "income" from capital expansions contributed by 4% on average to growth in the common equity tier 1 capital ratio between 2008 and 2012. The common equity tier 1 capital ratio rose by 3.4% annually on average during the same period.

Source: Reports to the Danish FSA.

Between 2013 and 2016, as earnings rose, the banks were predominantly able to strengthen their capital positions through profits. However, rising profits have also prompted several banks to increase their repayments to shareholders through higher dividends and by buying back their own shares. The same pattern was seen in the lead-up to the crisis, when banks distributed profits to shareholders instead of preparing for poorer times. The Danish FSA wants banks to have a larger financial buffer before the next recession hits.

The fall in risk exposures (see Figure 13, above) can be interpreted using two factors: development in total exposures and development in the risk/risk weightings of these exposures. The tendency for risk exposure to fall after 2008 is due to both a tendency for the average risk weighting to fall and a tendency for overall exposures to fall during the period. Development in the risk weightings can be attributed to banks changing their portfolio in favour of less risky exposures. It may also be due to technical changes resulting from the way in which risk weightings are calculated. As a rule, the Danish FSA does not accept lower risk weightings arising from purely technical changes. Lower risk weightings should thus only occur when the actual risk is reduced.

Own funds and eligible liabilities – MREL

The financial crisis highlighted the need for a common resolution regime at EU level with tools to effectively manage non-viable or failing banks. The new EU bank recovery and resolution directive (BRRD) came into effect in Denmark on 1 June 2015.

The directive provides the authorities with a range of options for intervening early and quickly in the case of a non-viable or failing bank. The aim is to ensure the continuity of the bank's critical functions while also minimising the effects of a bank's failure on the economy and the financial system. Furthermore, the BRRD aims to minimise the costs for tax-payers associated with the resolution of a bank.

The new directive requires countries to establish resolution authorities which are to prepare resolution plans for the resolution of individual banks if they fail. The resolution plans focus on identifying critical functions which, if discontinued, are likely to lead to the disruption of services that are essential to the real economy or to disrupt financial stability, such as bank customers' access to carrying out their daily transactions.

As part of the resolution planning, a minimum requirement for own funds and eligible liabilities (MREL) must be set. This will ensure that a failing bank has sufficient eligible liabilities and own funds to absorb losses so that it is possible to implement the chosen resolution model.

The Danish FSA expects to set an MREL requirement for all banks in 2017, and published a consultation paper regarding a resolution strategy and MREL requirement in January 2017.

The consultation paper includes descriptions of the three overall models for resolution plans, and thus for the establishment of MREL:

- **Bankruptcy:** The recapitalisation amount is set to zero. This strategy is primarily aimed at investment companies.
- **Intermediate model:** The set loss absorption amount is higher than the solvency need. This is intended to reflect the losses in a resolution situation that are not expected to be fully reflected in the solvency need (valuation 2 supplement). The set recapitalisation amount is lower than the solvency need, because some of the bank's assets can be sold quickly in connection with resolution.
- **Back on the market:** If the entire bank or group is to return to the market, an approach is taken in which the solvency need including capital buffers is doubled. This strategy is primarily aimed at SIFIs.

The Danish FSA has initiated an impact assessment regarding MREL which will be included in the final decision on a model for establishing MREL.

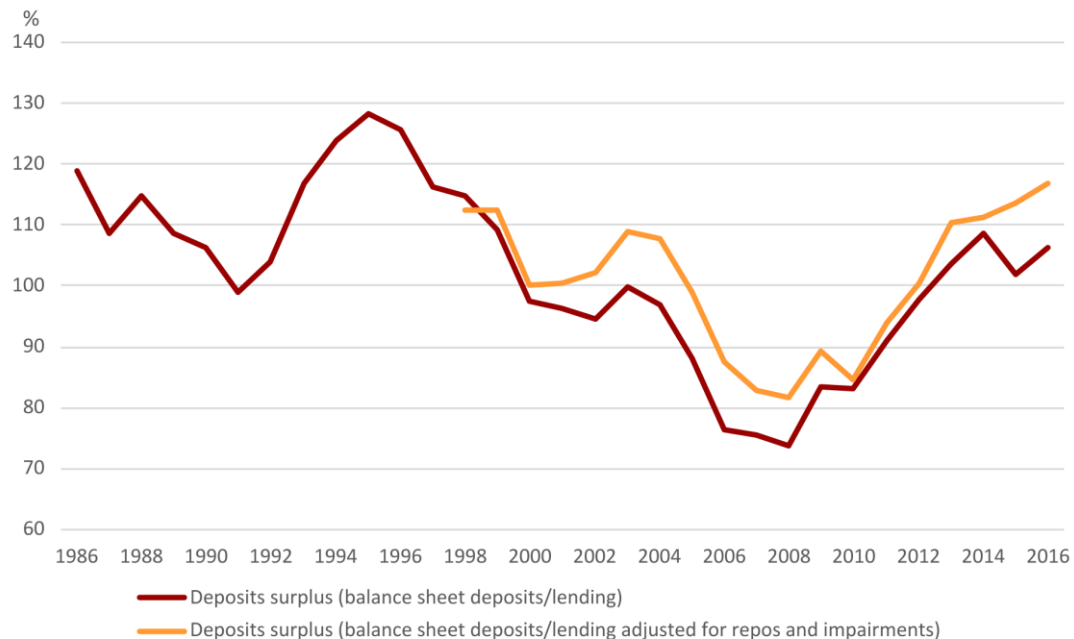
In parallel with the consultation process, the BRRD2 negotiations are underway within the EU regarding rules for establishing MREL. The reason for updating BRRD before it is even implemented in the Member States is to adapt it to international TLAC standards. The negotiations are still at an early stage, and no agreement has yet been reached regarding the final form the rules will take.

8. Liquidity and funding

Banks' lending and other assets are financed primarily through deposits, issues of various debt instruments as well as lending from other credit institutions and central banks. The composition of the various sources of finance is crucial to the liquidity risks of banks.

In the years leading up to the financial crisis, Danish banks developed a significant deficit of deposits. This was turned into an overall deposits surplus in 2012–2013 (cf. Figure 15), and at the end of 2016, the funding surplus was approximately DKK 250 billion.

Figure 15: The funding surplus is back to pre-financial crisis levels



Note: The funding surplus is reported as two different percentages in the chart. The red line shows the balance sheet deposits compared with balance sheet lending. The yellow line shows the balance sheet deposits adjusted for repos, compared with balance sheet lending adjusted for repos and impairments. We have adjusted for repos because in recent years the repo market has become increasingly significant, and the funding surplus should reflect the movement in ordinary deposits and lending to private and business customers. Lending is also adjusted for impairments, since in principle a bank's impairments may cause a full outflow of cash.

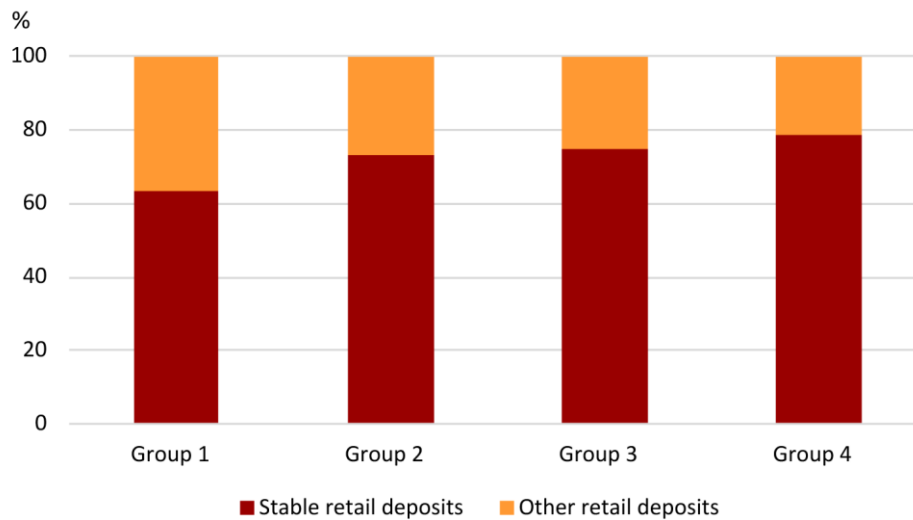
Source: Reports to the Danish FSA and own calculations.

A few years ago, the funding structure of banks was based on both deposits and market-based funding. As the funding surplus has been restored, smaller banks in Groups 2 and 3 in particular have substantially reduced their issuance volumes; cf. Figure 16. The significant fall in the issuance volume for Groups 2 and 3 banks is primarily due to maturity and early redemption on issuances with individual government guarantee (the scheme has ceased)

Smaller banks have many deposits from private customers and SME compared with larger banks. A large proportion of these deposits are stable, i.e. deposits that the banks expect to retain in a stress situation.

The larger banks have access to market-based funding, which is currently relatively cheap and easily accessible compared with earlier periods. It is therefore important for banks to remember that the situation can change quickly. Banks should thus not base their funding structure on less stable funding sources.

Figure 16: Most stable deposits in smaller banks



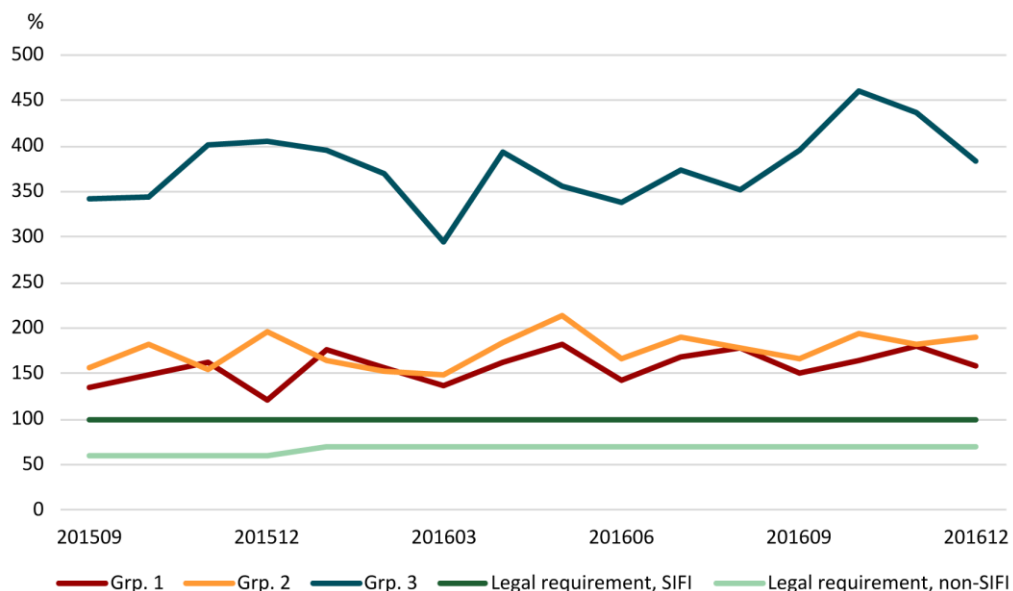
Note: Deposits of less than 1 million euro from private customers and SME is included in retail deposits. Retail deposits thus constitute part of the overall deposits with the banks. The Group 1 banks are all SIFI banks. Data are from the end of 2016.

Source: Reports to the Danish FSA and own calculations.

The LCR requirement

Since 1 October 2015, Danish credit institutions have been subject to the new common European liquidity coverage requirement: the *Liquidity Coverage Ratio*, or LCR (see Box 2 for a definition). LCR requires that banks always hold an adequate portfolio of highly liquid assets to cover possible imbalances between incoming and outgoing cash flows during a 30-day intensive liquidity stress.

Figure 17: Smaller banks have higher LCR levels



Note: The Group 1 banks are all SIFI banks. The median LCR values for Group 4 banks are higher than the median LCR values for Group 3 banks. During the period, Group 4 banks had median LCR values of between 422 and 1302 per cent.

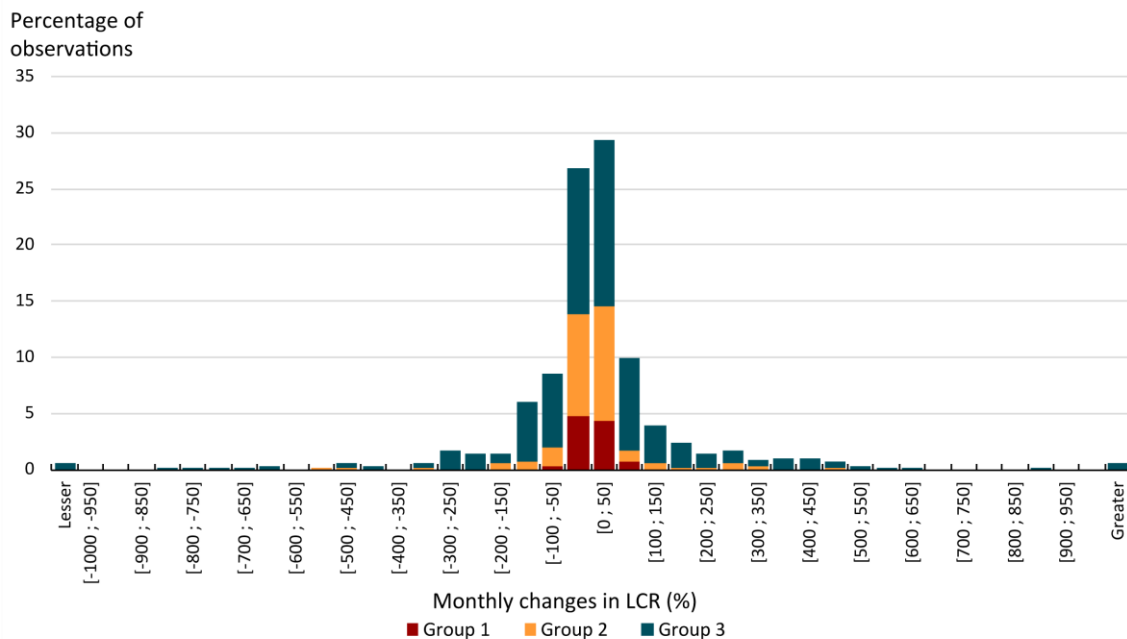
Source: Reports to the Danish FSA and own calculations.

The LCR requirement will be gradually phased in until 1 January 2018. However, for SIFIs, the LCR requirement was fully phased in (100%) from 1 October 2015. All the banks met the LCR requirement of at least 80 as at 1 January 2017; cf. Figure 17, which also shows that the SIFI banks met the LCR requirement of at least 100%.

The LCR will change during the course of the year as a result of banks' ordinary operations. Fluctuations from one month to the next may also be relatively large; cf. Figure 18.

Observations in Figure 18 that deviate substantially from zero are an expression of a big percentage monthly change in LCR in 2016. Obviously, most of the observations are close to zero, and 62.8% of the observations are within the interval of $\pm 50\%$. Nevertheless, there is a large difference in the distribution across the bank groups, which is also shown in the chart. 91% of the observations of monthly changes in LCR were within this interval for the largest banks in Group 1. This is evinced in the chart by the fact that the red area is almost always within the interval of $\pm 50\%$. In the case of Group 2 banks, 76% of the observations are within this interval, while for Group 3 banks this holds true for 42% of the observations. 10% of the observations for Group 3 banks show a drop of over 150% per month in LCR.

Figure 18: Smaller banks experienced the biggest month-to-month fluctuations in LCR



Note: This figure shows a histogram of monthly changes in LCR as a percentage (X axis) for banks in Groups 1–3. The figure is based on data for the period January to December 2016, and the distribution is shown for all observations for the year combined. The X axis is divided into intervals depending on the percentage size of the monthly changes in LCR, and each column represents an interval of 50%. The X axis stops at -1000% (lesser) and +1000% (greater). Three observations for Group 3 banks were less than -1000% and three observations for Group 3 banks were greater than +1000%. The Y axis shows the proportion of monthly percentage changes in LCR in each interval.

Source: Reports to the Danish FSA and own calculations.

LCR may change both as a result of changes in the portfolio of liquid assets and due to changes in the banks' net payment outflows over the coming 30 days. The position banks choose to take in regard to the legal LCR requirement should reflect the volatility that they experience in their LCR. As shown in Figure 18, an LCR of 500% today is no guarantee that the legislative requirement can be complied with in a month's time. LCR can thus be very volatile.

Box 2: Definition of the LCR requirement

The LCR requirement is defined as follows:

$$LCR = \frac{\text{Holding of liquid assets}}{\text{Net cash outflows over the next 30 days}} > 100 \%$$

where both the stock of liquid assets and net cash outflows are defined in the Delegated Regulation on LCR (EU) 2015/61.

The LCR requirement requires diversified liquid assets, in which at least 30% must be held in cash, deposits in central banks or government bonds, and no more than 70% may be covered bonds (mortgage-credit bonds, etc.). Liquid assets in LCR are defined in Articles 10–15, while the rules on diversification of liquid assets in LCR are found in Article 17 of the Delegated Regulation on LCR (EU) 2015/61. Assets issued by the bank itself may not be included as liquid assets in the bank's LCR.

Covered bonds represent a large proportion of liquid assets in Denmark. Many banks holds so many covered bonds in proportion to cash, deposits in central banks and government bonds that not all covered bonds can be counted as liquid assets in LCR.

In many smaller banks, net cash outflows over the next 30 days in the LCR's stress scenario are small. This is due in particular to the fact that smaller banks fund themselves via deposits, which are relatively stable over time. This means the LCR for many smaller banks is high; cf. Figure 17. For the smaller banks, the LCR requirement is also milder than the previous Danish liquidity requirement (section 152 of the Danish Financial Business Act). For larger banks the requirement is stricter. This can be seen by comparing the net cash outflows for the next 30 days relative to the balance with a proxy for the 10% requirement in the previous liquidity requirement⁴. The median level for the LCR requirement relative to the balance at the end of 2016 was 13.7% for the largest banks in Group 1 and 10.6% for the medium-sized banks in Group 2. In regard to the smallest banks, the median LCR requirement relative to the balance was 4.5% for Group 3 banks and 2.5% for Group 4 banks at the end of 2016.

The LCR is a mild liquidity requirement for many smaller banks compared with the previous Danish liquidity requirement, and many smaller banks have a high LCR level. It is therefore important for these banks to analyse whether their LCR provides an accurate picture of the bank's liquidity position. As stated above, the LCR can fluctuate strongly from one month to the next for these banks. If the bank has a small net cash outflow one month, the resulting high LCR level could give rise to a false sense of security. The net cash outflow could double the following month, and the LCR level would suddenly look very different. It may thus also be useful for a bank to track developments in other, simpler figures, such as the absolute size of the bank's liquidity holdings, when monitoring its liquidity position.

⁴ LCR came into effect on 1 October 2015, and the Danish liquidity requirement for banks pursuant to section 152 of the Financial Business Act (the section 152 requirement) was phased out at the end of 2016. In the chart, 10% of the balance is used as a proxy for the section 152 liquidity requirement. Under the section 152 requirement, liquid assets must comprise at least 15% of the debt that the bank would have to pay on demand or at less than a month's notice, and at least 10% of the bank's total debt and guarantee exposures, minus debt and equity which could be included when calculating capital adequacy. Under the section 152 requirement, the 10% requirement was effectively binding for many banks.

The LCR requirement applies to the total liquidity position of credit institutions. There are no requirements for the LCR requirement to be complied with in each currency, but there are requirements that the currency of net cash flows and liquid assets must match. This means that credit institutions must continuously monitor and ensure an adequate match between the composition of currency of their holding of liquid assets and their cash flows in LCR. In 2016 Danish SIFIs became subject to a requirement to comply with the LCR requirement in other significant currencies, with the exception of SEK and NOK; cf. Box 3. The Danish FSA continuously monitors LCR in significant currencies at both consolidated and individual levels. This applies to both Danish SIFIs who are subject to additional LCR requirements in significant currencies and to all other banks with significant currencies (Article 415, paragraph 2 of the Currency Requirements Regulation (CRR)).

Box 3: Liquidity requirements for Danish SIFIs for LCR in significant currencies

In 2016 the Danish FSA set an additional liquidity requirement for Danish SIFIs at consolidated level pursuant to section 152, subsection 4 of the Financial Business Act.

The liquidity risks of SIFIs in significant currencies may represent a systemic risk to Denmark. The Danish FSA has therefore decided that there is a need to address this specific systemic liquidity risk in Danish SIFIs. This has been done by setting a requirement that, in addition to the general LCR requirement, SIFIs in Denmark must comply with an additional LCR requirement in the individual SIFI's significant currencies. Significant currencies are currencies that a bank must report separately to the national supervisory authorities pursuant to Article 415, paragraph 2 of the CRR. NOK and SEK are exempt from this rule.

NOK and SEK are exempt from the LCR significant currencies requirement, since liquid assets denominated in DKK are widely recognised on both the Norwegian and Swedish markets. The Danish FSA therefore judges that adequate liquidity can be generated in SEK and NOK based on liquid assets denominated in DKK. However, SEK and NOK are still subject to the general requirement of the LCR regulation for banks to have adequate currency matching between their portfolio of liquid assets and net outgoing flows.

The additional LCR requirement in significant currencies will be phased in gradually. Banks must meet it by so 60% on 1 October 2016, 80% on 1 April 2017 and 100% on 1 October 2017.

The liquidity benchmark in the supervisory diamond

As already stated, LCR has replaced the previous Danish liquidity requirement (section 152 of the Financial Business Act), which was phased out at the end of 2016. The Danish FSA is in the process of revising the current liquidity benchmark in the supervisory diamond, which is based on the section 152 statutory requirement, so that in future it is based on LCR.

In the spring 2017 the Danish FSA sent out a proposal for consultation regarding a new liquidity benchmark for banks based on LCR, which looks beyond the 30-day LCR horizon. The Danish FSA proposes the benchmark to be based on a simplified projection of LCR in which a minimum limit is set for three months in which a positive liquidity should be maintained. The new benchmark indicates the stock of high-quality liquid assets that the Danish FSA deems necessary in order to withstand three months of liquidity stress. The Danish FSA regards banks as having increased short-term liquidity risk if they do not have sufficient liquidity to withstand three months of liquidity stress in normal circumstances.

To reduce the administrative burden, the Danish FSA proposes that the new benchmark should be designed in such a way that it can be reported on the basis of existing reports. The Danish FSA expects that reports will be expanded to include data for the maturity profile of a bank's funding (known as the Maturity Ladder) in spring 2018. When this happens, the Additional Liquidity Monitoring Metrics report will probably form the basis for the Danish FSA to monitor whether banks are continuing to comply with the liquidity benchmark. To avoid complexity, only the key elements from LCR will be used in the design of the benchmark.

Market liquidity

There is still focus on market liquidity both nationally and internationally. High market liquidity supports low transaction costs and helps to create competitive market structures. Market liquidity is thus an important element holding the financial markets together.

In 2016 various market participants expressed anxiety regarding market liquidity in the Danish mortgage-credit bond market. Among other things, in August 2016 the Danish Bankers Association (now Finance Denmark) issued a report on market liquidity in the Danish bond market. The report was based on an interview survey with market participants. The survey concluded that investors are experiencing falling liquidity on the Danish bond market, which concerns them. For example, investors feel that it takes substantially longer to perform actions than previously, and that the market impact of actions has also increased.

The Danish FSA continues to focus on liquidity in the mortgage-credit bond market due to the key importance of this market in Denmark. Demand for mortgage-credit bonds has changed in conjunction with adaptations to portfolios and changes in risk-taking, driven in part by new regulation. Adjustments to product portfolios – including a move toward fewer small bond series – may be appropriate in order to ensure adequate market liquidity. The Danish FSA is therefore pleased that various mortgage-credit institutions have actively worked to reduce the number of small bond series in 2016.

In recent years, the Danish FSA has followed the development of what is known as joint funding of banks' mortgage loans (see Box 4 for a definition). When using such financing structures, it is important that the banks involved maintain an overview of factors such as the liquidity risk of the mortgage loans issued by banks. For example, banks should continuously monitor the risk position. The liquidity risk for banks' mortgage loans is initially placed squarely with the banks, and does not change position until the mortgage loans are finally transferred to and financed by a bond issued from a special mortgage-credit institution. It is important for banks to continuously adjust to this. Among other things, this means that banks that are increasingly using this structure should transfer loans continuously, rather than allowing mortgage loans to accumulate on the bank's balance sheet. Doing this protects the banks from being forced (for example, by market unrest) to hold a large amount of mortgage loans on their own balance sheets, whereas they would otherwise have been intended for transfer to a mortgage-credit institution.

The Danish FSA will continuously monitor that expensive risks are not built up as a result of a bank's own mortgage loans. For the moment, however, the Danish FSA assesses that the volume of jointly funded mortgage loans involving non-group related banks is generally limited.

Box 4: What is joint funding of mortgage loans?

Joint funding of banks' mortgage loans is understood to mean regular bank loans (bank loans secured in fixed property) which are initially granted by and appear on the balance sheet of the lending bank. Under various conditions, the bank can subsequently transfer sell the loan to a mortgage-credit institution, which issues covered bonds with the transferred loan used as collateral. This means that the loan no longer appears on the bank's balance sheet, but instead on the balance sheet of the relevant mortgage-credit institution, which also funds the loan by issuing bonds. However, the bank still has a customer relationship with the borrower.

Asset encumbrance

Assets are considered to be encumbered when used as collateral for creditors' claims. This collateralisation may be used either to obtain financing, e.g. through repo transactions, covered bonds or asset-backed securities (ABS) or for trading and risk management, e.g. derivatives and securities lending. Asset encumbrance is thus a natural part of many banks' business model.

In stress situations, encumbrance of assets may be an important tool for credit institutions, as this is a way to obtain liquidity. In contrast, a disproportionally high level of encumbrance has a number of negative consequences for individual banks. There are two reasons for this. Firstly, banks with a high level of encumbrance may have more difficulty obtaining financing in a stress situation, because they have fewer unencumbered assets available. Secondly, encumbered assets are not available for unsecured creditors, including depositors, if the bank enters into liquidation or goes bankrupt. This can affect the bank's access to the unsecured financial markets.

The largest banks typically have an encumbrance ratio⁵ of over 15%, while most smaller and medium-sized banks have an encumbrance ratio of below 5%. The extent of asset encumbrance must be viewed in the context of the bank's size, with the largest banks having a greater volume of repo business and derivative contracts. In the case of smaller banks, asset encumbrance is primarily linked to central bank liquidity. However, many smaller banks simply do not have encumbered assets or receive collateral at all.

⁵ The encumbrance ratio is defined in accordance with Commission Implementing Regulation (EU) 2015/79 of 18 December 2014.

Appendices

Appendix 1: Financial statements of banks 2012–2016

						Growth per annum	
DKK billion	2012	2013	2014	2015	2016	2012-2016	2015-2016
Income statement							
Interest income	89,9	79,6	73,2	60,1	57,5	-10,6%	-4,4%
Interest expenses	39,5	32,3	25,4	15,3	15,4	-21,0%	0,4%
Net interest income	50,3	47,4	47,7	44,8	42,1	-4,4%	-6,1%
Dividends from shares, etc.	1,2	2,5	2,9	1,5	0,9	-6,4%	-38,4%
Fee and commission income	25,7	27,1	29,4	31,9	31,0	4,8%	-2,6%
Fees paid and commission expenses	6,1	6,4	6,0	6,2	6,2	0,1%	-1,0%
Net interest and fee income	71,1	70,6	74,0	71,9	67,8	-1,2%	-5,6%
Value adjustments	8,0	4,1	-2,3	2,6	6,9	-3,5%	170,7%
Other operating income	3,8	3,0	8,0	3,2	3,4	-2,6%	6,9%
Staff costs and administrative expenses	48,8	47,3	47,1	46,4	46,2	-1,4%	-0,4%
Amortisation and impairment on intangible and tangible assets	4,1	3,3	13,2	7,2	3,2	-6,2%	-56,3%
Other operating expenses	1,1	1,6	1,2	1,1	0,2	-31,3%	-78,4%
Impairment of loans and dues, etc.	27,2	17,2	12,5	5,7	2,7	-43,6%	-51,6%
Income from holdings in associates and affiliated undertakings	6,0	7,7	10,8	11,3	13,4	22,0%	18,0%
Income from activities during liquidation	-0,5	0,0	0,0	0,0	0,0	•	•
Profit before tax	7,3	16,2	16,5	28,6	39,2	52,5%	37,3%
Tax	3,7	2,8	2,2	4,5	5,4	10,1%	19,2%
Net profit for the year	3,6	13,4	14,2	24,0	33,8	75,2%	40,7%
Balance sheet items							
Cash in hand and demand deposits with central banks	136	64	44	65	48	-22,8%	-25,6%
Debt instruments that can be refinanced in central banks	0	0	0	0	0	•	•
Due from credit institutions and central banks	400	350	386	240	408	0,5%	70,4%
Lending	1.760	1.683	1.655	1.645	1.692	-1,0%	2,9%
<i>Lending excl. repos</i>	<i>1.479</i>	<i>1.353</i>	<i>1.341</i>	<i>1.354</i>	<i>1.411</i>	<i>-1,2%</i>	<i>4,2%</i>
Bonds	1.002	1.003	1.040	824	802	-5,4%	-2,7%
Shares	29	36	27	42	44	10,9%	4,4%
Holdings in associated undertakings	5	5	5	3	2	-24,0%	-42,5%
Equity investments in group undertakings	138	137	154	159	157	3,2%	-1,1%
Assets linked to pool schemes	110	111	116	127	135	5,2%	6,9%
Intangible assets	26	25	15	12	12	-17,9%	0,0%
Land and buildings	12	12	11	8	7	-11,1%	-7,6%
Other property, plant and equipment	4	4	4	4	5	3,0%	8,5%
Tax assets	3	3	5	3	3	-3,1%	-20,4%
Assets held temporarily	16	3	3	6	0	-59,0%	-92,9%
Other assets	600	369	552	445	452	-6,8%	1,6%
Accruals and deferred income	2	2	3	3	3	8,3%	-6,0%
Total assets	4.243	3.807	4.020	3.586	3.770	-2,9%	5,1%
Debt to credit institutions and central banks	800	660	648	476	465	-12,7%	-2,3%
Deposits	1.722	1.745	1.800	1.677	1.801	1,1%	7,4%
<i>Deposits excl. repos</i>	<i>1.563</i>	<i>1.584</i>	<i>1.579</i>	<i>1.615</i>	<i>1.715</i>	<i>2,3%</i>	<i>6,2%</i>
Issued bonds	390	311	337	378	408	1,1%	7,8%
Other non-derivative financial liabilities at fair value	85	84	93	34	54	-10,8%	58,1%
Current tax liabilities	1	2	1	1	1	-6,5%	3,2%
Liabilities held temporarily	0	0	0	3	0	-26,0%	-99,1%
Other non-derivative financial liabilities at fair value	851	611	755	623	640	-6,9%	2,8%
Accruals and deferred income	1	1	1	1	1	3,7%	19,9%
Total debt	3.850	3.413	3.635	3.193	3.370	-3,3%	5,5%
Total provisions	14	12	13	12	12	-4,6%	-2,4%
Subordinated debt	107	100	65	59	55	-15,3%	-6,2%
Equity	272	282	308	321	333	5,2%	3,6%
Total liabilities	4.243	3.807	4.020	3.586	3.770	-2,9%	5,1%

Income statement and balance sheet figures are at bank level. Figures are based on the banks, which existed in the individual years. Source: Reports to the Danish FSA.

Appendix 2: Financial statements of banks by group 2015–2016

	Group 1			Group 2			Group 3			Group 4		
DKK million	2015	2016	Change	2015	2016	Change	2015	2016	Change	2015	2016	Change
Income statement items (extract)												
Net interest income	31.913	29.458	-8%	8.748	8.581	-2%	3.780	3.881	3%	145	140	-3%
Dividends from shares, etc.	1.232	588	-52%	147	205	39%	69	101	46%	1	3	200%
Net fee and commission income	19.760	18.804	-5%	3.514	3.728	6%	2.180	2.257	4%	88	101	15%
Net interest and fee income	52.905	48.851	-8%	12.408	12.514	1%	6.029	6.239	3%	233	244	5%
Value adjustments	1.047	4.545	334%	1.395	2.147	54%	-48	242	*	0	2	
Staff and administrative expenses	33.295	33.152	0%	8.751	8.666	-1%	3.896	4.161	7%	221	205	-7%
Impairments on loans	1.651	102	-94%	2.126	1.873	-12%	1.672	759	-55%	54	11	-80%
Income from associates and group undertakings	10.950	12.791	17%	324	496	53%	34	81	138%	-1	0	100%
Profit before tax	25.965	33.614	29%	2.261	4.076	80%	247	1.556	530%	45	-14	-131%
Tax	4.074	4.477	10%	311	647	108%	107	277	159%	5	2	-60%
Net profit for the year	21.890	29.136	33%	1.949	3.429	76%	140	1.279	814%	40	-17	-143%
Balance sheet items (extract)												
Due from credit institutions	220.791	381.066	73%	11.245	15.358	37%	7.146	11.458	60%	336	538	60%
Lending	1.415.227	1.458.515	3%	157.271	164.196	4%	63.763	66.878	5%	2.092	2.092	0%
Lending excl. repos	1.129.124	1.184.209	5%	152.721	157.821	3%	63.574	66.878	5%	2.092	2.050	-2%
Bonds	717.257	686.473	-4%	77.199	83.497	8%	27.372	31.059	13%	883	1.067	21%
Shares, etc.	31.603	32.654	3%	7.048	7.608	8%	3.197	3.470	9%	139	181	30%
Due to credit institutions	455.866	441.185	-3%	14.554	18.376	26%	5.438	5.285	-3%	59	87	47%
Deposits	1.340.993	1.444.679	8%	236.036	251.430	7%	94.713	101.604	7%	3.308	3.455	4%
Deposits excl. repos	1.279.181	1.358.824	6%	235.666	251.430	7%	94.713	101.604	7%	3.308	3.378	2%
Issued bonds	377.067	406.886	8%	1.104	774	-30%	0	0		0	0	
Total equity	262.167	276.614	6%	37.458	39.461	5%	14.858	16.076	8%	849	808	-5%
Total assets	3.144.019	3.308.433	5%	307.807	329.715	7%	119.211	127.394	7%	4.359	4.510	3%
Guarantees	350.002	360.776	3%	40.296	48.495	20%	18.823	22.187	18%	425	531	25%
Other liabilities	200.840	215.530	7%	2.499	3.441	38%	1.067	1.529	43%	9	3	-67%
Selected financial ratios (bank level)												
Total capital ratio	23,0	24,6		16,6	17,5		17,4	18,1		30,1	27,1	
Tier 1 capital ratio	20,5	21,8		14,8	15,6		17,0	17,4		30,1	27,0	
ROE before tax for year	10,1	12,5		6,3	10,9		1,7	9,9		5,8	-1,7	
Ratio of operating income to operating expenses	1,6	2,1		1,2	1,4		1,0	1,3		1,2	0,9	
Accumulated impairment %	2,5	2,1		6,8	6,3		8,8	7,4		8,4	8,2	
Impairment for year %	0,1	0,0		1,0	0,8		1,8	0,8		2,0	0,4	

Note: The comparative figures take into account mergers and developments in working capital, which mean that a bank moves from one group to another. In other words, the groups are locked on the basis of the group allocation in 2016.

Source: Reports to the Danish FSA.

Appendix 3: Financial ratios of banks 2012–2016

	2012	2013	2014	2015	2016
Individual bank level					
Total capital ratio	22,1	22,3	21,0	22,0	23,2
Tier 1 capital ratio	19,2	19,5	18,5	19,7	20,7
Return on equity before tax	2,9	5,9	5,6	9,1	12,2
Return on equity after tax	1,6	4,9	4,8	7,7	10,5
Ratio of operating income to operating expenses	1,1	1,2	1,2	1,5	1,9
Interest-rate risk	0,3	0,8	1,1	1,3	1,3
Loans plus impairment charges in relation to deposits	106,6	101,0	96,1	101,8	96,9
Excess liquidity cover in relation to statutory requirements for	170,2	204,3	155,8	193,5	205,3
Sum of large exposures	16,3	8,0	7,3	5,2	8,8
Accumulated impairment loss ratio	3,9	4,0	3,8	3,3	2,7
Annual impairment loss ratio	1,2	0,8	0,6	0,3	0,1
Growth in lending for the year	-4,4	-7,4	-0,4	1,6	4,7
Loans in relation to equity	6,5	6,0	5,5	5,1	5,1
Group level					
Total capital ratio	19,4	19,9	18,3	19,7	20,5
Tier 1 capital ratio	16,6	17,3	16,0	17,5	18,2
Return on equity before tax	3,5	7,1	6,5	9,9	13,0
Return on equity after tax	1,5	5,2	4,9	7,6	10,4
Ratio of operating income to operating expenses	1,1	1,3	1,2	1,5	1,7
Interest-rate risk	0,4	1,2	1,3	1,8	1,2
Excess liquidity cover in relation to statutory requirements for	145,9	174,8	132,5	155,2	165,6
Sum of large exposures	14,7	6,7	6,4	3,0	8,0
Accumulated impairment loss ratio	2,7	2,7	2,4	2,1	1,7
Annual impairment loss ratio	0,9	0,5	0,4	0,2	0,1
Growth in lending for the year	0,8	-4,1	9,5	1,9	3,4
Loans in relation to equity	11,6	10,8	10,7	10,4	10,4

Note: Financial ratios are calculated on the basis of the banks which existed in the individual years.
Source: Reports to the Danish FSA.

Appendix 4: Banks' loans and guarantees by sector and industry

	2016	2015	2016	2015
	Loans and guarantees, DKK mill.	Loans and guarantees, DKK mill.	Loans and guarantees, %	Loans and guarantees, %
Public sector	115.439	60.175	5,3%	2,8%
Corporate:				
Agriculture	92.035	92.293	4,2%	4,3%
Industry	143.838	134.441	6,6%	6,3%
Energy supply	37.151	38.544	1,7%	1,8%
Building and construction	41.712	38.602	1,9%	1,8%
Trade	108.542	105.013	5,0%	4,9%
Transport	68.253	69.572	3,1%	3,3%
Information	17.618	15.939	0,8%	0,7%
Financing	461.262	528.156	21,1%	24,9%
Real property	234.849	225.454	10,8%	10,6%
Other corporate	115.942	121.780	5,3%	5,7%
Total corporate:	1.321.203	1.369.795	60,5%	64,5%
Private	747.580	695.330	34,2%	32,7%

Source: Reports to the Danish FSA.

Appendix 5: Loans and guarantees by quality category 2016

		Quality category							
		1	1 previous year	2c	2c previous year	sum 1 + 2c	sum 1 + 2c previous year	2b	2a/3
Total	Corporate	6,5	7,3	1,7	2,2	8,2	9,6	10,9	80,9
	Private	4,9	6,0	1,7	2,3	6,6	8,3	13,5	79,9
	Total	5,8	6,7	1,7	2,2	7,5	8,9	11,4	81,2
Group 1	Corporate	4,5	3,7	1,0	1,2	5,5	4,9	9,2	85,3
	Private	4,4	5,5	1,1	1,5	5,6	7,0	8,9	85,5
	Total	4,3	4,1	1,0	1,3	5,3	5,4	8,8	85,9
Group 2	Corporate	19,2	24,6	5,5	6,2	24,7	30,8	19,0	56,3
	Private	5,4	6,9	3,3	4,7	8,6	11,6	23,9	67,4
	Total	12,8	16,6	4,4	5,5	17,2	22,1	21,1	61,7
Group 3	Corporate	23,1	26,2	8,8	9,6	31,9	35,8	30,5	37,5
	Private	9,8	9,1	4,7	4,2	14,5	13,2	41,5	44,1
	Total	16,5	18,1	6,8	7,0	23,3	25,2	36,0	40,7
Group 4	Corporate	20,8	22,9	6,1	9,1	26,9	32,0	33,5	39,6
	Private	9,7	8,5	4,2	3,5	13,9	11,9	36,5	49,6
	Total	14,0	13,8	4,9	5,6	19,0	19,3	35,3	45,7

Source: Reports to the Danish FSA.

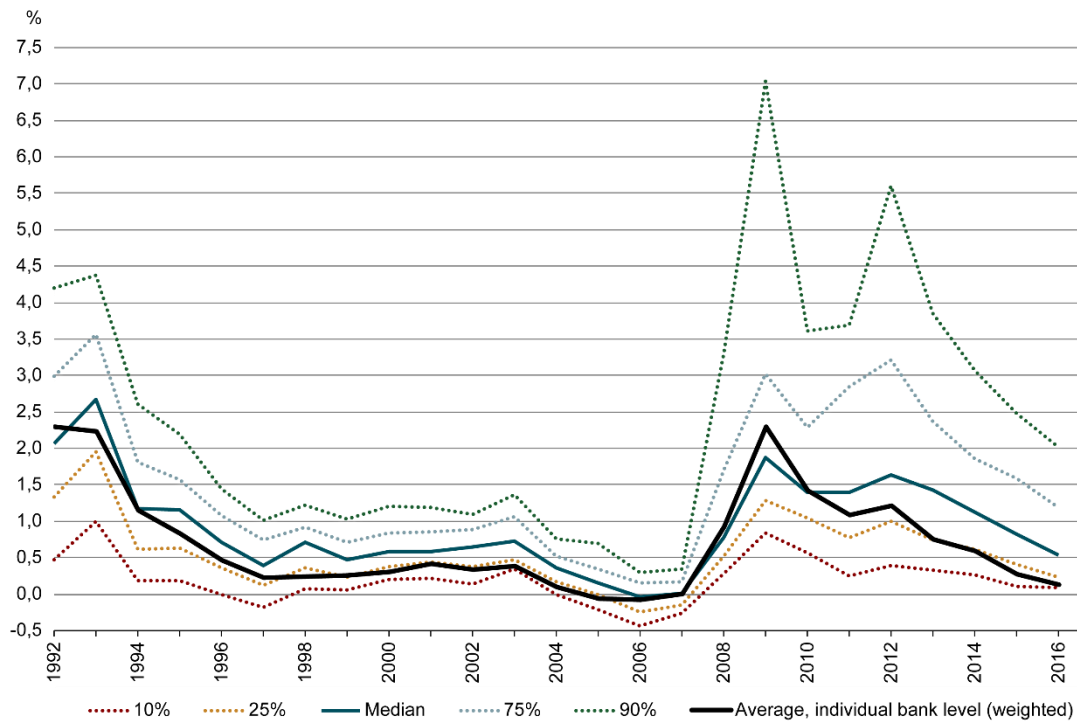
Appendix 6: Nordea Bank Denmark is included in this publication

Nordea Bank Denmark is included in this publication

In 2017 Nordea Bank Denmark moved from being a separate bank within the Nordea Group to being a subsidiary of Nordea Sweden. This means that supervision of Nordea's Danish bank activities switches from the Danish FSA to the Swedish Financial Supervisory Authority (Finansinspektionen). This publication primarily deals with development in Danish banks. This means that Nordea Bank Denmark is included in the analyses, but (for example), activities of Handelsbanken's subsidiaries in Denmark are not.

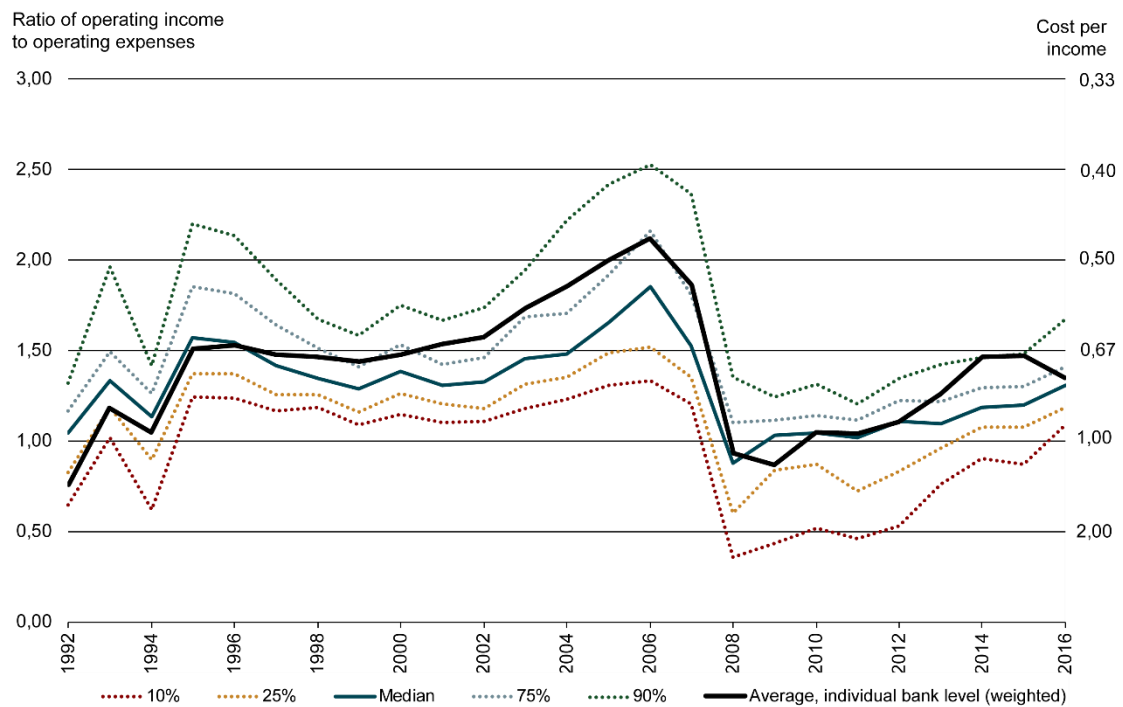
Appendix 7: Dispersion of financial ratios by fractiles

Figure A1: Annual impairment loss ratio (%) on loans and guarantees 1992–2016



Source: Reports to the Danish FSA.

Figure A2: Income/cost ratio 1992–2016



Note: The right axis shows the cost per income, which is the ratio of operating expenses to operating income. The same components are thus included in the calculation.

Source: Reports to the Danish FSA.

Appendix 8: Grouping by size, Groups 1–4 at the end of 2016

FSA no.	Name				
Group 1 – Working capital more than DKK 75 billion					
2222	Nordea Bank Denmark A/S				
3000	Danske Bank A/S				
7858	Jyske Bank A/S				
8079	Sydbank A/S				
8117	Nykredit Bank A/S				
Total institutions: 5					
Group 2 – Working capital more than DKK 12 billion					
9380	Spar Nord Bank A/S	7670	Ringkøbing Landbobank A/S	400	Lån og Spar Bank A/S
5301	A/S Arbejdernes Landsbank	8099	Nordjyske Bank A/S	9217	Jutlander Bank A/S
1149	Saxo Bank A/S	9335	Sparekassen Kronjylland	522	Sparekassen Sjælland-Fyn A/S
7730	Vestjysk Bank A/S	9686	Den Jyske Sparekasse	9070	Sparekassen Vendsyssel
Total institutions: 12					
Group 3 – Working capital more than DKK 500 million					
537	Dragsholm Sparekasse	7681	Alm. Brand Bank A/S	9860	Folkesparekassen
755	Middelfart Sparekasse	7780	Skjern Bank A/S	13080	Frørup Andelskasse
844	Fynske Bank A/S	7890	Salling Bank A/S	13460	Merkur Andelskasse
847	Rise Flemløse Sparekasse	7930	Kreditbanken A/S		
1671	Basisbank A/S	9044	Dronninglund Sparekasse		
5999	Danske Andelskassers Bank A/S	9090	Sparekassen Thy		
6140	Møns Bank A/S	9133	Frøslev-Møllerup Sparekasse		
6471	Grønlandsbanken, Aktieselskab	9137	Ekspres Bank A/S		
6520	Lollands Bank, Aktieselskab	9283	Langå Sparekasse		
6620	Coop Bank A/S	9312	Sparekassen Balling		
6771	Lægernes Bank A/S	9354	Rønde Sparekasse		
6860	Nordfyns Bank, Aktieselskabet	9388	Sparekassen Djursland		
6880	Totalbanken A/S	9682	Sparekassen for Nr. Nebel og Omegn		
7230	Østjysk Bank A/S	9695	Saxo Privatbank A/S		
7320	Djurslands Bank A/S	9740	Frøs Sparekasse		
7500	Hvidbjerg Bank. Aktieselskab	9797	Broager Sparekasse		
7570	PenSam Bank A/S	9827	Sparekassen Bredebro		
Total institutions: 37					
Group 4 – Working capital less than DKK 250 million					
544	Refsnæs Sparekasse	9629	Stadil Sparekasse	13350	J.A.K. Andelskasse Østervrå
579	Sparekassen Den lille Bikube	9634	Borbjerg Sparekasse	28001	Maj Bank A/S
800	Flemløse Sparekasse	9639	Fjaltring-Trans Sparekasse		
1693	PFA Bank A/S	9684	Fanø Sparekasse		
5125	Leasing Fyn Bank A/S	13070	Faster Andelskasse		
6102	Landbrugets Finansieringsbank A/S	13100	Københavns Andelskasse		
9124	Sønderhå-Hørsted Sparekasse	13220	Andelskassen OIKOS		
9135	Klim Sparekasse	13290	Andelskassen Fælleskassen		
9369	Søby-Skader-Halling Sparekasse	13330	Andelskassen J.A.K Slagelse		
Total institutions: 20					

Acquisitions, mergers and institutions closed do		
Institutions closed down		Transferring institutions
10001	FIH Erhvervsbank A/S	Closed down
828	Sparekassen Fyn	522 Sparekassen Sjælland-Fyn A/S

Closed down in 2017			
2222	Nordea Bank Denmark A/S	Subsidiarisation	
800	Flemløse Sparekasse	847	Rise Flemløse Sparekasse

Note: Group allocation is based on the banks' reports to the Danish FSA as of the fourth quarter of 2016.
The banks in Groups 1–4 are sorted according to the size of their working capital. Working capital consists of deposits, issued bonds, etc., subordinated debt and equity.